

USHIO Lamps for General Illumination

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Interlight Specialty Bulbs4
1-800-743-0005
www.interlight.biz

INCANDESCENT

ULTRA SERVICE™ – Sign Lamps

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USHIO LAMPS FOR GENERAL ILLUMINATION

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FLUORESCENT

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HIGH PRESSURE SODIUM

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500	1001493	500PAR64/MFL	57
500	1001495	500PAR64/NSP	57
500	1001497	500PAR64/WFL	57
500	1001281	Q500PAR56/MFL	57
500	1001282	Q500PAR56/NSP*	57
500	1001284	Q500PAR56/WFL	57
PRO-PAR™ Series			
35	1003064	35PAR20/FL30/120V	51
45	1001483	45PAR38/FL30/120V	54
45	1001484	45PAR38/FL30/130V	54
45	1001487	45PAR38/SP10/120V	54
45	1001488	45PAR38/SP10/130V	54
45	1001489	45PAR38/WFL50/120V	54
45	1001490	45PAR38/WFL50/130V	54
50	1001499	50PAR20/FL40/120V	51
50	1001500	50PAR20/FL40/130V	51
50	1001503	50PAR20/NFL30/120V	51
50	1001502	50PAR20/NFL30/130V	51
50	1001504	50PAR20/SP10/130V	51
50	1001507	50PAR30/FL40/120V	52
50	1001508	50PAR30/FL40/130V	52
50	1001510	50PAR30/NFL30/120V	52
50	1001511	50PAR30/NFL30/130V	52
50	1001514	50PAR30/SP10/120V	52
50	1001513	50PAR30/SP10/130V	52
* Special Order Item			

Wattage	USHIO Ordering Code	USHIO Product Code	Page
PRO-PAR™ Series			
50	1001516	50PAR30LN/FL40/120V	52
50	1001517	50PAR30LN/FL40/130V	52
50	1001519	50PAR30LN/NFL30/120V	52
50	1001520	50PAR30LN/NFL30/130V	52
50	1001522	50PAR30LN/SP10/120V	52
50	1001523	50PAR30LN/SP10/130V	52
60	1001530	60PAR38/FL30/120V	54
60	1003192	60PAR38/FL30/130V	54
60	1002246	60PAR38/SP10/120V	54
60	1003191	60PAR38/SP10/130V	54
75	1001533	75PAR30/FL40/120V	52
75	1001534	75PAR30/FL40/130V	52
75	1001536	75PAR30/NFL30/120V	52
75	1001537	75PAR30/NFL30/130V	52
75	1001540	75PAR30/SP10/120V	52
75	1001539	75PAR30/SP10/130V	52
75	1001542	75PAR30LN/FL40/120V	52
75	1001543	75PAR30LN/FL40/130V	52
75	1001545	75PAR30LN/NFL30/120V	52
75	1001546	75PAR30LN/NFL30/130V	52
75	1001548	75PAR30LN/SP10/120V	52
75	1001549	75PAR30LN/SP10/130V	52
75	1001725	75PAR38/FL30/120V	54
75	1003195	75PAR38/FL30/130V	54
75	1003193	75PAR38/SP10/120V	54
75	1003194	75PAR38/SP10/130V	54
90	1001553	90PAR38/FL30/120V	54
90	1001554	90PAR38/FL30/130V	54
90	1001556	90PAR38/SP10/120V	54
90	1001557	90PAR38/SP10/130V	54
90	1001558	90PAR38/WFL50/120V	54
90	1001559	90PAR38/WFL50/130V	54
120	1003068	120PAR38/FL30/120V	54
PULSESTRIKE™ Series – Metal Halide			
70	5001342	MP70/U/MED/32/PS	74
70	5001344	MH70/U/MED/42/PS	74
70	5001346	MP70/U/MED/42/PS	74
100	5001414	MP100/U/MED/32/PS	74
100	5001348	MH100/U/MED/40/PS	74
100	5001350	MP100/U/MED/40/PS	74
150	5001354	MP150/U/MED/32/PS	74
150	5001356	MH150/U/MED/42/PS	74
150	5001358	MP150/U/MED/40/PS*	74
250	5001360	MH250/U/MOG/40/PS	75
250	5001362	MP250/U/MOG/40/PS	75
320	5001364	MH320/U/MOG/40/PS	75
320	5001366	MP320/U/MOG/40/PS	75
350	5001368	MH350/U/MOG/40/PS	75
350	5001370	MP350/U/MOG/40/PS	75
400	5001372	MH400/U/MOG/40/PS	75
400	5001374	MP400/U/MOG/40/PS	75
SIGN – ULTRA SERVICE™			
11	1003212	11W S-14/CL/20	13
11	1003213	11W S-14/FR/20	13
15	1003214	15W A-15/CL/20	13
25	1003216	25W A-19/CL/20	13

* Special Order Item

Wattage	USHIO Ordering Code	USHIO Product Code	Page
SIGN – ULTRA SERVICE™			
25	1003217	25W A-19/FR/20*	13
25	1003296	25W A-19/CER/YELLOW/20	13
30	1003215	30W A-15/FR/20	13
30	1003205	30W R-20/HF/20	14
30	1003204	30W R-20/LF/20	14
45	1003220	45W BR-30/HF/9	14
54	1003221	54W BR-38/FL/9	14
SOFTLINE PAR™ Series			
90	1003506	90PAR38/FL/130V/SFT	58
SOLID STATE LIGHTING – DIRECT LED SYSTEM			
3.3	1003731	Direct LED Light Engine/White	86
1.6	1003732	Direct LED Light Engine/Red	86
3.5	1003733	Direct LED Light Engine/Blue	86
3.8	1003734	Direct LED Light Engine/Green	86
SOLID STATE LIGHTING – FIBER LED SYSTEM			
3.3	1003727	Fiber LED Light Engine/White	86
3.3	1003783	Fiber LED Light Engine/Warm White	86
1.6	1003728	Fiber LED Light Engine/Red	86
3.5	1003729	Fiber LED Light Engine/Blue	86
3.8	1003730	Fiber LED Light Engine/Green	86
SOLID STATE LIGHTING – OPAL-LUX™ Series			
6.6	1003720	6W OPAL-LUX/WARM WHITE	84
6.6	1003719	6W OPAL-LUX/WHITE	84
SOLID STATE LIGHTING – PEARL-LUX™ Series			
6	1003620	6W PEARL-LUX/WARM WHITE	84
6	1003621	6W PEARL-LUX/WHITE	84
SOLID STATE LIGHTING – SYNERGIE™			
4	1003601	SYNERGIE MR16, SP12, DL	83
4	1003602	SYNERGIE MR16, NFL24, DL	83
4	1003603	SYNERGIE MR16, FL34, DL	83
4	1003604	SYNERGIE MR16, WFL50, DL	83
4	1003609	SYNERGIE MR16, SP12, NW	83
4	1003610	SYNERGIE MR16, NFL24, NW	83
4	1003611	SYNERGIE MR16, FL34, NW	83
4	1003612	SYNERGIE MR16, WFL50, NW	83
4	1003605	SYNERGIE MR16, SP12, WW	83
4	1003607	SYNERGIE MR16, NFL24, WW	83
4	1003608	SYNERGIE MR16, FL34, WW	83
4	1003608	SYNERGIE MR16, WFL50, WW	83
SOLID STATE LIGHTING – U-LED™ Series			
0.6	1003701	U-LED CANDLE	85
UHI – AQUALITE™ Series			
75	5000870	UHI-70AQ/10	81
75	5001627	UHI-70AQ/14	81
75	5001606	UHI-70AQ/20+	81
150	5000440	UHI-150AQ/10	81
150	5001587	UHI-150AQ/14	81
150	5001588	UHI-150AQ/20+	81
175	5001586	UHI-S175AQ/65	81
175	5000761	UHI-S175AQ/10	81
175	5001591	UHI-S175AQ/14	81
175	5001592	UHI-S175AQ/20+	81
250	5000763	UHI-250AQ/10	81
250	5001589	UHI-250AQ/14	81
250	5001590	UHI-250AQ/20+	81
250	5001070	UHI-S250AQ/10/CWA	81

* Special Order Item

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Wattage	USHIO Ordering Code	USHIO Product Code	Page
UHI – AQUALITE™ Series			
250	5002092	UHI-S250AQ/14/CWA	81
250	5002093	UHI-S250AQ/20/CWA	81
400	5001492	UHI-S400AQ/10/CWA	81
400	5002094	UHI-S400AQ/14/CWA	81
400	5002095	UHI-S400AQ/20/CWA	81
400	5000760	UHI-S400AQ/10	81
400	5001608	UHI-S400AQ/14	81
400	5001607	UHI-S400AQ/20+	81
1000	5000910	UHI-S1000AQ/10	81
1000	5001493	UHI-S1000AQ/10/CWA	81
UHI – COLORLITE™ Series			
150	5000821	UHI-150BL, BLUE	80
150	5000822	UHI-150GR, GREEN	80
150	5001453	UHI-S150/BLUE*	80
150	5001452	UHI-S150/GREEN*	80
150	5001498	UHI-S150/MAGENTA*	80
150	5001499	UHI-S150/ORANGE	80
175	5001455	UHI-S175/BLUE	80
175	5001454	UHI-S175/GREEN	80
250	5001484	UHI-S250/BLUE	80
250	5001485	UHI-S250/GREEN*	80
250	5001486	UHI-S250/MAGENTA*	80
250	5001487	UHI-S250/ORANGE	80
400	5000947	UHI-S400BL, BLUE	80
400	5000946	UHI-S400GR, GREEN	80
400	5000948	UHI-S400MG, MAGENTA	80
1000	5001189	UHI-S1000BL, BLUE	80
1000	5001188	UHI-S1000GR, GREEN	80
UHI – EUROFLOOD™ Series			
75	5000190	UHI-70DL/UVP	77
75	5000192	UHI-70DM/UVP	77
75	5000194	UHI-70DW/UVP	77
150	5000178	UHI-150DD/UVP*	77
150	5000182	UHI-150DM/UVP	77
150	5000184	UHI-150DW/UVP	77
250	5000188	UHI-250DM/UVP	77
UHI – EUROSPOT™ Series			
75	5000439	UHI-S75DW/UVP	78
150	5000875	UHI-S150DM/A/UVP	78
150	5000950	UHI-S150DW/A/UVP	78
UHI – ULTRA-ARC™ Series			
250	5001175	UHI-S250DD	76
400	5000798	UHI-S400DD	76
UMH – Metal Halide			
50	5000230	UMH-50/U, ED17	72
175	5000222	UMH-175/U/MD, ED17	72
175	5000221	UMH-175/U, ED28	72
250	5000224	UMH-250/C/U, ED28	72
250	5000225	UMH-250/U, ED28	72
400	5000938	UMH-400/U, ED28	72
400	5000227	UMH-400/U, ED37	72
1000	5001139	UMH-1000/U, BT37	72
1000	5000214	UMH-1000/U, BT56	72
1500	5000217	UMH-1500/HBU, BT56	72
250	5001408	UMH-250/HOR/MOG/32/T15	73
400	5001409	UMH-400/HOR/MOG/32/T15	73
* Special Order Item			

Wattage	USHIO Ordering Code	USHIO Product Code	Page
XENOLINE™ Series – Festoon, Wedge, Rigid Loop			
5	5000765	FST 12V-5W/C/XX	15
5	5000886	FST 12V-5W/F/XX	15
10	5000850	FST 12V-10W/C/XX	15
10	5000891	FST 12V-10W/F/XX	15
3	5002235	FST 24V-3W/C/XX	15
3	5002234	FST 24V-3W/F/XX	15
5	5000766	FST 24V-5W/C/XX	15
5	5000755	FST 24V-5W/F/XX	15
10	5000851	FST 24V-10W/C/XX	15
10	5000756	FST 24V-10W/F/XX	15
3.36	1001417	UWX-10122 15LM	15
5	1001419	UWX-10124 33LM	15
5	1002260	UWX-10124 33LM Frosted	15
5	1003155	UWX-1045/BULK 45LM*	15
5	1002262	UWX-1024S/LL 37.7LM Frosted	15
5	1001598	UWX-1024S/LL 37.7LM	15
5.1	1001423	UWX-1024S 50.2LM*	15
7.2	1003002	UWX-15 67.9LM	15
7.2	1003151	UWX-15/BULK	15
7.2	1003698	UXW-918 82LM	15
7.5	1002272	UWX-T10XEWB 65.3LM	15
10	1003038	UWX-15 126LM*	15
10	1003152	UWX-15/BULK 126LM	15
11.5	1001430	UWX-15-1 120LM	15
18	1001433	UWX-15-5 250LM	15
5	5000852	XRL 12V-5W/C/XX	15
5	5000899	XRL 12V-5W/F/XX	15
5	5000854	XRL 24V-5W/C/XX	15
5	5000883	XRL 24V-5W/F/XX	15
10	5000853	XRL 12V-10W/C/XX	15
10	5000901	XRL 12V-10W/F/XX	15
10	5000855	XRL 24V-10W/C/XX	15
10	5000903	XRL 24V-10W/F/XX	15
* Special Order Item			

NON-REFLECTOR ULTRA SERVICE™ SIGN LAMPS

- For Use in Electronic Signs, Marquees & Message Centers
- Long Life
- Universal Burn Position
- Withstands Vibration
- Fused Leads to Protect Sign Components

Watts	Ushio Ordering Code	Ushio Lamp Description	Bulb Type	Volts V	Dimensions		Avg Life h	Bulb Finish	Burn Position	Case Qty	Fig No
					Dia (A)	MOL (B)					
Medium Screw Base – E26											
11	1003212	11W S-14/CL/20	S-14	120	1.75	3.50	20000	Clear	Univ	120	1
11	1003213	11W S-14/FR/20	S-14	120	1.75	3.50	20000	Frosted	Univ	120	1
15	1003214	15W A-15/CL/20	A-15	120	1.87	3.50	20000	Clear	Univ	120	2
25	1003216	25W A-19/CL/20	A-19	120	2.37	3.94	20000	Clear	Univ	120	2
25	1003217	25W A-19/FR/20*	A-19	120	2.37	3.94	20000	Frosted	Univ	120	2
25	1003296	25W A-19/CER/YELLOW/20	A-19	120	2.37	3.94	20000	Yellow	Univ	120	2
30	1003215	30W A-15/FR/20	A-15	120	1.87	3.50	20000	Frosted	Univ	120	2

* Special Order Item

All dimensions shown in inches unless otherwise noted.

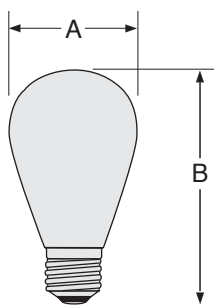


Fig. 1

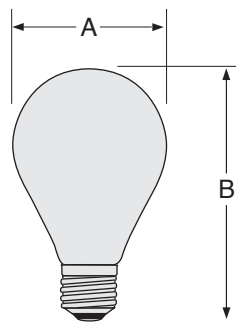


Fig. 2

REFLECTOR ULTRA SERVICE™ SIGN LAMPS

- For use in Electronic Signs & Message Centers
- Long Life
- Universal Burn Position
- Heavy Frost, Light Frost & Other Colors Including Blue, Blue White, Green & Red
- Fused Leads to Protect Sign Components

Watts	Ushio Ordering Code	Ushio Lamp Description	Bulb Type	Volts V	Dimensions		Avg Life h	Bulb Finish	Burn Position	Case Qty	Fig No
					Dia	MOL					
					(A)	(B)					
Medium Screw Base – E26											
30	1003204	30W R-20/LF/20	R-20	120	2.50	3.94	20000	Light Frost	Univ	60	1
30	1003205	30W R-20/HF/20	R-20	120	2.50	3.94	20000	Heavy Frost	Univ	60	1
45	1003220	45W BR-30/HF/9	BR-30	120	3.75	5.37	9000	Heavy Frost	Univ	24	2
54	1003221	54W BR-38/FL/9	BR-38	120	4.75	5.63	9000	Flood	Univ	24	3

All dimensions shown in inches unless otherwise noted.

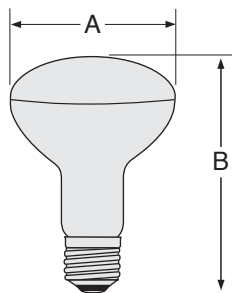


Fig. 1

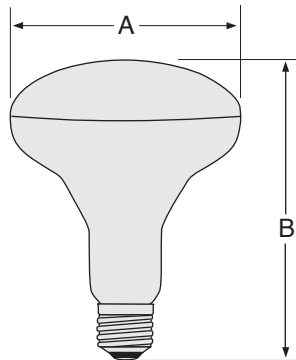


Fig. 2

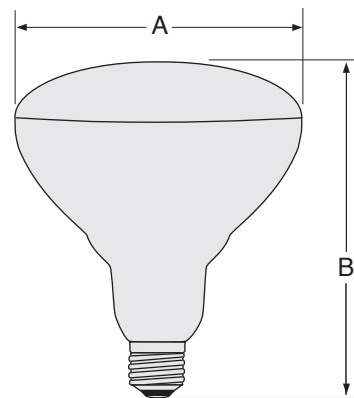


Fig. 3

XENOLINE™ SERIES

- Festoon, Rigid Loop & Wedge Base Xenon Lamps
- UV Protected
- Long Life
- Low Voltage

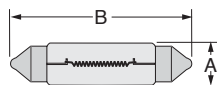
- Low Pressure
- Universal Burn Position



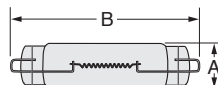
Watts	Ushio Ordering Code	Ushio Lamp Description	Volts V	Amps	Dimensions		Lumens lm	Avg Life h	Case Qty
					Dia (A)	MOL (B)			
Festoon – S8.5/8 Base									
3	5002235	FST 24V-3W/C/XX	24	0.131	0.39	1.73	30	10000	6
3	5002234	FST 24V-3W/F/XX	24	0.131	0.39	1.73	30	10000	10
5	5000765	FST 12V-5W/C/XX	12	0.370	0.39	1.73	50	20000	100
5	5000886	FST 12V-5W/F/XX	12	0.370	0.39	1.73	50	20000	100
5	5000766	FST 24V-5W/C/XX	24	0.192	0.39	1.73	50	15000	100
5	5000755	FST 24V-5W/F/XX	24	0.192	0.39	1.73	50	15000	100
10	5000850	FST 12V-10W/C/XX	12	0.740	0.39	1.73	120	20000	100
10	5000891	FST 12V-10W/F/XX	12	0.740	0.39	1.73	120	20000	100
10	5000851	FST 24V-10W/C/XX	24	0.385	0.39	1.73	120	10000	100
10	5000756	FST 24V-10W/F/XX	24	0.385	0.39	1.73	120	10000	100
Rigid Loop									
5	5000852	XRL 12V-5W/C/XX	12	0.417	0.39	1.69	45	20000	50
5	5000899	XRL 12V-5W/F/XX	12	0.417	0.39	1.69	45	20000	50
5	5000854	XRL 24V-5W/C/XX	24	0.208	0.39	1.69	40	20000	50
5	5000883	XRL 24V-5W/F/XX	24	0.208	0.39	1.69	40	20000	50
10	5000853	XRL 12V-10W/C/XX	12	0.833	0.39	1.69	100	20000	50
10	5000901	XRL 12V-10W/F/XX	12	0.833	0.39	1.69	100	20000	50
10	5000855	XRL 24V-10W/C/XX	24	0.417	0.39	1.69	90	20000	50
10	5000903	XRL 24V-10W/F/XX	24	0.417	0.39	1.69	90	20000	50
Wedge Base									
3.36	1001417	UWX-10122 15LM	14	0.240	0.41	1.06	15	19000	10
5	1001419	UWX-10124 33LM	13.5	0.370	0.41	1.06	33	8000	10
5	1002260	UWX-10124 33LM Frosted	13.5	0.370	0.41	1.06	33	8000	10
5	1003155	UWX-1045BULK, 45LM*	13.5	0.370	0.41	1.06	45	2000	500
5.1	1001423	UWX-1024S 50.2LM*	24	0.214	0.41	1.06	50.2	1000	10
5	1001598	UWX-1024S/LL 37.7LM	24	0.208	0.41	1.06	37.7	10000	10
5	1002262	UWX-1024S/LL 37.7LM Frosted	24	0.208	0.41	1.06	37.7	10000	10
7.2	1003002	UWX-15 67.9LM	24	0.300	0.59	1.49	67.9	2500	10
7.2	1003151	UWX-15/BULK	24	0.300	0.59	1.49	67.9	3000	400
7.2	1003698	UWX-918 82LM	12.8	0.560	0.59	1.49	82	10000	10
7.5	1002272	UWX-T10XEWB 65.3LM	24	0.313	0.41	1.06	65.3	10000	10
10	1003038	UWX-15 126LM*	24	0.416	0.59	1.49	126	2000	10
10	1003152	UWX-15/BULK, 126LM	24	0.416	0.59	1.49	126	3000	200
11.5	1001430	UWX-15-1 120LM	12	0.960	0.59	1.49	120	10000	10
18	1001433	UWX-15-5 250LM	12	1.500	0.59	1.49	250	10000	10

* Special Order Item

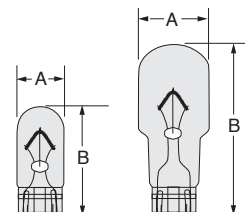
All dimensions shown in inches unless otherwise noted.



Festoon - S8.5/8 Base



Rigid Loop



Wedge Base

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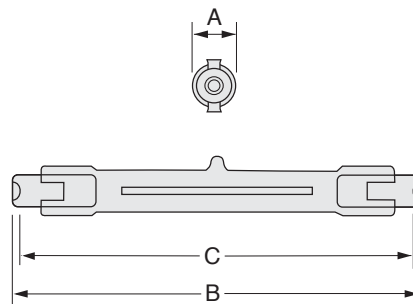
- Only for Use in Approved Enclosed Halogen Fixtures
- Recessed Single Contact Base - R7s-12
- C-8 & CC-8 Linear Filaments
- Even, Linear Illumination



Watts	Ushio	Ushio	Dimensions			Filament	Lumens lm	Avg	Bulb	Burn	Case
	Ordering Code	Lamp Description	Dia (A)	MOL (B)	C-to-C (C)	Type		Life h	Finish	Position	Qty
R7s-12 Base – MOL ≈ 3.16” (80.3mm) – T2.5, T4**											
100	1000698	J120V-100W/79MM SHORT	0.31	3.16	2.95	CC-8	1450	1500	Clear	Univ	50
100	1000721	J130V-100W/79MM SHORT	0.31	3.16	2.95	CC-8	1450	1500	Clear	Univ	50
100	1000762	J240V-100W/79MM SHORT	0.31	3.16	2.95	CC-8	1250	1500	Clear	H±4	50
150	1001734	J12V-150WA/80**	0.47	3.37	3.15	C-8	2700	2000	Clear	H±4	50
150	1000701	J120V-150W/79MM SHORT	0.31	3.16	2.95	CC-8	2400	1500	Clear	Univ	50
150	1000723	J130V-150W/79MM SHORT	0.31	3.16	2.95	CC-8	2400	2000	Clear	Univ	50
150	1000751	J230V-150W/79MM SHORT	0.31	3.16	2.95	CC-8	1950	1500	Clear	H±4	50
150	1000765	J240V-150W/79MM SHORT	0.31	3.16	2.95	CC-8	1950	1500	Clear	H±4	50
200	1000703	J120V-200W/79MM SHORT	0.31	3.16	2.95	CC-8	3460	2000	Clear	Univ	50
200	1000705	J120V-200WF/79MM SHORT	0.31	3.16	2.95	CC-8	3400	2000	Frosted	Univ	50
200	1000725	J130V-200W/79MM SHORT	0.31	3.16	2.95	CC-8	3460	2000	Clear	Univ	50
250	1000707	J120V-250W/79MM SHORT	0.31	3.16	2.95	CC-8	4500	2000	Clear	Univ	50
300	1000709	J120V-300W/79MM SHORT	0.31	3.16	2.95	CC-8	5900	2000	Clear	Univ	50
300	1000727	J130V-300W/79MM SHORT	0.31	3.16	2.95	CC-8	5900	2000	Clear	Univ	50

All dimensions shown in inches unless otherwise noted.

With greater economy through long life and high output, **J** lamps are ideal for flood lighting wide areas for both indoor and outdoor lighting installations.



R7s-12

J

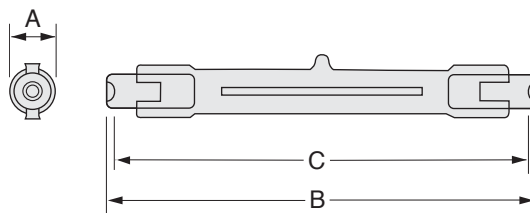
- Only for Use in Approved Enclosed Halogen Fixtures
- Recessed Single Contact Base - R7s-12
- C-8 & CC-8 Linear Filaments
- T2.5 & T4



Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions			Filament Type	Lumens lm	Color Temp K	Avg Life h	Bulb Finish	Burn Position	Case Qty
			Dia (A)	MOL (B)	C-to-C (C)							
R7s-12 Base – MOL≈ 4.71" (119.6mm) – T2.5												
100	1000697	J120V-100W/119MM LONG	0.31	4.71	4.50	C-8	1450	2750	1500	Clear	Univ	50
100	1000720	J130V-100W/119MM LONG	0.31	4.71	4.50	C-8	1450	2750	1500	Clear	Univ	50
100	1000761	J240V-100W/119MM LONG*	0.31	4.71	4.50	C-8	1250	—	1500	Clear	H±4	50
150	1000719	J12V-150WG	0.31	4.71	4.50	C-8	2400	2900	1500	Clear	Univ	50
150	1000700	J120V-150W/119MM LONG	0.31	4.71	4.50	C-8	2400	2800	1500	Clear	Univ	50
150	1000722	J130V-150W/119MM LONG	0.31	4.71	4.50	C-8	2400	2850	1500	Clear	Univ	50
150	1000764	J240V-150W/119MM LONG*	0.31	4.71	4.50	C-8	1950	2750	1500	Clear	H±4	50
200	1000702	J120V-200W/119MM LONG	0.31	4.71	4.50	C-8	2850	2900	2000	Clear	Univ	50
200	1000724	J130V-200W/119MM LONG	0.31	4.71	4.50	C-8	2850	2900	2000	Clear	Univ	50
200	1000770	J240V-200W/119MM LONG	0.31	4.71	4.50	C-8	3200	2850	1500	Clear	H±4	50
250	1000706	J120V-250W/119MM LONG	0.31	4.71	4.50	C-8	4500	2900	2000	Clear	Univ	50
300	1000777	J24V-300WG*	0.31	4.71	4.50	C-8	5000	2900	1500	Clear	H±4	50
300	1000779	J32V-300WG	0.31	4.71	4.50	C-8	5000	2900	1500	Clear	H±4	50
300	1000291	EHM, J120V-300W	0.31	4.71	4.50	C-8	5900	3000	2000	Clear	H±4	50
300	1000296	EHZ, J120V-300WF	0.31	4.71	4.50	C-8	5770	3000	2000	Frosted	H±4	50
300	1000726	J130V-300W/119MM LONG	0.31	4.71	4.50	C-8	5900	—	2000	Clear	Univ	50
300	1000756	J230V-300W	0.31	4.71	4.50	CC-8	4800	2900	2000	Clear	H±4	50
500	1000488	FCL, J120V-500W	0.31	4.71	4.50	C-8	10000	3000	2000	Clear	H±4	50
500	1000497	FCZ, J120V-500WF	0.31	4.71	4.50	C-8	10700	3000	2000	Frosted	H±4	50
500	1000712	J120V-500W/6*	0.31	4.71	4.50	C-8	11000	3000	2000	Clear	Univ	50
500	1000224	DVS, J130V-500WB	0.31	4.71	4.50	C-8	10500	3000	2000	Clear	H±4	50
500	1000736	J220V-500WE	0.47	4.71	4.50	C-8	9500	3000	2000	Clear	H±4	50
500	1000077	BSH, J240V-500WN	0.39	4.71	4.50	C-8	9500	2950	2000	Clear	H±4	50
750	1000738	J220V-750WB1	0.31	4.71	4.50	C-8	16100	3050	1500	Clear	H±4	50
MOL ≈ 7.52" (191.1mm) – T2.5, T4**												
1000	1000695	J120V-1000WB**	0.47	7.52	7.31	C-8	22000	3000	2000	Clear	Univ	100
1000	1000739	J225V-1000WB	0.31	7.52	7.31	C-8	22000	3050	2000	Clear	H±4	100

* Special Order Item

All dimensions shown in inches unless otherwise noted.



R7s-12

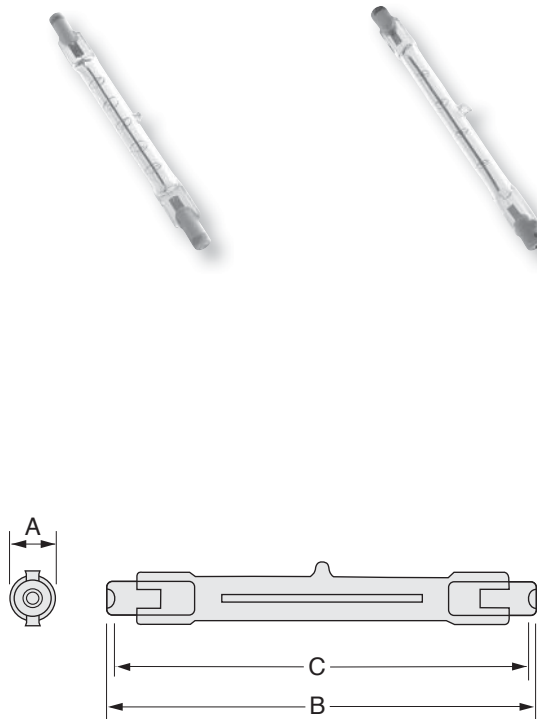
J

- Only for Use in Approved Enclosed Halogen Fixtures
- Recessed Single Contact Base - R7s-12
- Horizontal $\pm 4^\circ$ Burn Position
- T2.5

Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions			Filament Type	Lumens lm	Color Temp K	Avg Life h	Bulb Finish	Case Qty
			Dia (A)	MOL (B)	C-to-C (C)						
R7s-12 Base – MOL ≈ 10.1” (256.1mm)											
1000	1000740	J225V-1000WB1*	0.31	10.1	9.87	C-8	22000	3050	2000	Clear	100
1000	1000758	J240V-1000WB1	0.31	10.1	9.87	C-8	21500	3050	2000	Clear	100
1500	1000699	J120V-1500WB	0.31	10.1	9.87	C-8	35000	3050	2000	Clear	100
1500	1000750	J230V-1500WB	0.31	10.1	9.87	C-8	35000	3000	2000	Clear	100
1500	1000243	DYD, J240V-1500WB	0.31	10.1	9.87	C-8	33000	3050	2000	Clear	100
1500	1000778	J277V-1500WB	0.31	10.1	9.87	C-8	31500	3050	2000	Clear	100
MOL ≈ 13.2” (334.4mm)											
2000	1000752	J230V-2000WB*	0.31	13.2	12.68	C-8	44000	—	2000	Clear	100

* Special Order Item

All dimensions shown in inches unless otherwise noted.



R7s-12

JC

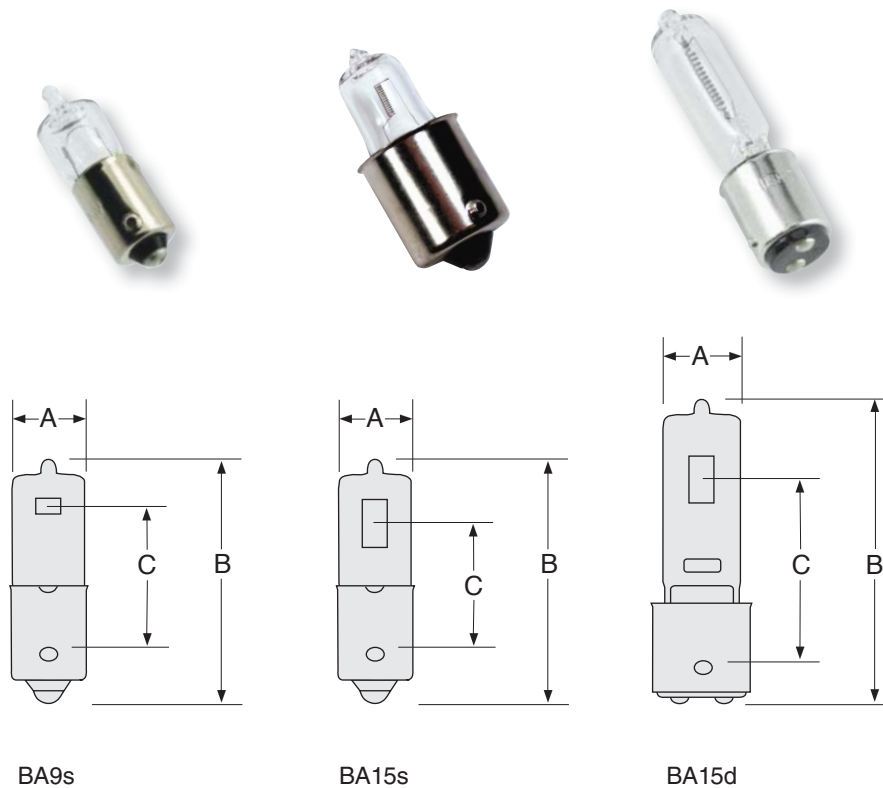
- Only for Use in Approved Enclosed Halogen Fixtures
- Single Contact Bayonet Base - BA9s, BA15s
- Double Contact Bayonet Base - BA15d

- Universal Burn Position

Watts	Ushio	Ushio	Dimensions			Filament	Lumens lm	Color	Avg	Bulb	Case
	Ordering	Lamp	Dia	MOL	LCL	Type		Temp	Life	Finish	Qty
	Code	Description	(A)	(B)	(C)			K	h		
Single Contact Bayonet Base – BA9s											
5	1000832	JC12V-5W/BA9S	0.35	1.10	0.59	C-2R	80	3000	240	Clear	10
10	1000810	JC12V-10W/BA9S	0.35	1.10	0.59	C-6	200	—	240	Clear	10
20	1000819	JC12V-20W/BA9S	0.35	1.18	0.53	C-6	340	2900	2000	Clear	10
Single Contact Bayonet Base – BA15s											
10	1003717	JC12V-10W/BA15S/XX	0.39	1.50	1.00	C-8	120	2850	10000	Clear	10
20	1003714	JC12V-20W/BA15S/XX	0.39	1.50	1.00	C-8	350	2900	10000	Clear	10
35	1003715	JC12V-35W/BA15S/XX	0.39	1.50	1.00	C-8	600	2900	8000	Clear	10
50	1003716	JC12V-50W/BA15S/XX	0.39	1.50	1.00	C-8	900	2950	8000	Clear	10
Double Contact Bayonet Base – BA15d											
35	1003754	JC12V-35W/BA15D	0.39	1.50	1.00	C-8	600	2900	10000	Clear	10
125	1000814	JC12V-125WB/BA15D*	0.59	1.92	1.13	C-8	1900	2800	1000	Clear	20

* Special Order Item

All dimensions shown in inches unless otherwise noted.



JC & JCX

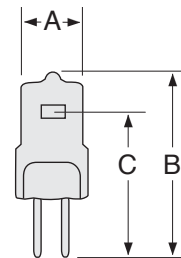
- Only for Use in Approved Enclosed Halogen Fixtures
- Miniature 2-Pin Base - G4
- Universal Burn Position



Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions			Filament Type	Lumens lm	Color Temp K	Avg Life h	Bulb Finish	Case Qty
			Dia (A)	MOL (B)	LCL (C)						
Miniature 2-Pin Base – G4											
5	1000833	JC12V-5W/G4	0.35	1.18	0.77	C-2R	60	2900	2000	Clear	10
10	1000856	JC6V-10W/G4	0.35	1.18	0.77	C-6	130	2850	2000	Clear	10
10	1003030	JC12V-10W/G4	0.35	1.18	0.77	C-6	120	2800	2000	Clear	10
10	1000811	JC12V-10W/G4	0.35	1.10	0.77	C-2R	140	2900	2000	Clear	10
10	1000812	JC12V-10W/G4	0.35	1.10	0.77	C-2R	175	2916	300	Clear	10
10	1000813	JC12V-10WF/G4	0.35	1.18	0.77	C-6	115	2800	2000	Frosted	10
20	1000866	JC6V-20W/G4	0.35	1.18	0.77	C-6	280	2850	2000	Clear	10
20	1000821	JC12V-20W/G4	0.35	1.18	0.77	C-6	350	2850	2000	Clear	10
20	1000804	JC12V-20W/G4	0.31	1.18	0.77	C-8	350	2850	2000	Clear	10
20	1000820	JC12V-20WF/G4	0.35	1.18	0.77	C-6	350	2900	2000	Frosted	10
20	1000844	JC24V-20W/G4	0.35	1.18	0.77	C-6	280	2850	2000	Clear	10
35	1000825	JC12V-35WB/G4	0.35	1.18	0.77	C-6	650	2900	2000	Clear	10
XENON Filled 2-Pin Base – G4											
10	1003051	JCX12V-10W/G4	0.37	1.61	0.83	C-8	100	2600	10000	Clear	10
10	1003083	JCX24V-10W/G4	0.37	1.61	0.83	CC-8	95	2550	10000	Clear	10
15	1003079	JCX12V-15W/G4	0.37	1.61	0.83	C-8	150	2600	10000	Clear	10
15	1003084	JCX24V-15W/G4	0.37	1.61	0.83	CC-8	150	2600	10000	Clear	10
20	1003072	JCX12V-20W/G4	0.37	1.61	0.83	C-8	200	2600	5000	Clear	10
20	1003085	JCX24V-20W/G4	0.37	1.61	0.83	CC-8	200	2600	5000	Clear	10
20	1003086	JCX28V-20W/G4	0.37	1.61	0.83	CC-8	200	2600	5000	Clear	10

All dimensions shown in inches unless otherwise noted.

Originally developed as light sources for optical instruments, **JC** lamps feature an overall compact design with precise LCL placement. The exceptional brightness of this compact lamp make this series an ideal choice for task light applications.



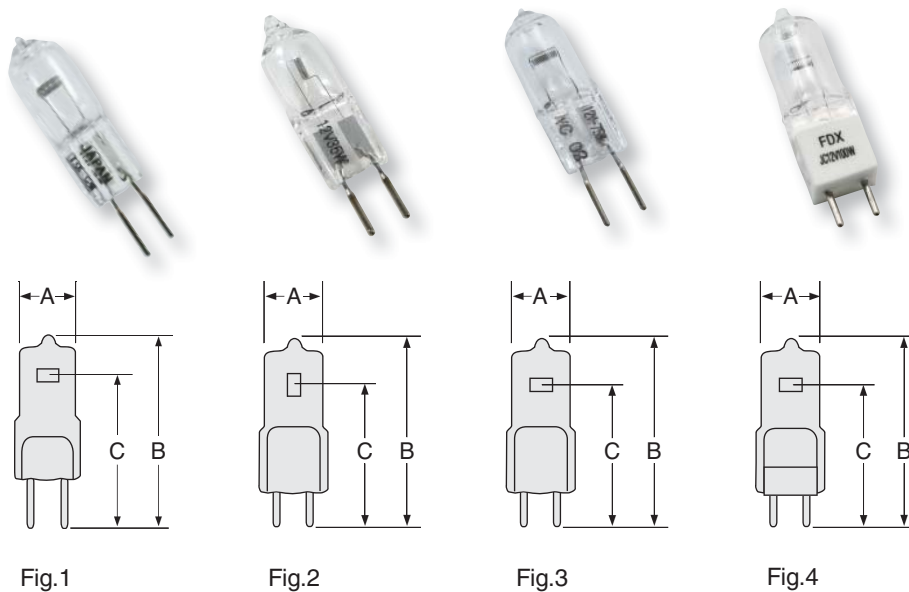
G4

JC

- Only for Use in Approved Enclosed Halogen Fixtures
- Glass 2-Pin Base - G6.35, GY6.35

Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions			Filament Type	Lumens lm	Color Temp K	Avg Life h	Bulb Finish	Burn Position	Case Qty	Fig No
			Dia (A)	MOL (B)	LCL (C)								
Glass 2-Pin Base – G6.35													
20	1000822	JC12V-20W	0.43	1.73	1.18	C-6	280	2850	2000	Clear	Univ	10	1
35	1000823	JC12V-35W	0.43	1.73	1.18	C-6	650	2900	2000	Clear	Univ	10	1
50	1000830	JC12V-50WG1.0	0.43	1.73	1.18	C-6	900	2900	2000	Clear	Univ	10	1
50	1000829	JC12V-50WF	0.43	1.73	1.18	C-6	840	3000	2000	Frosted	Univ	10	1
50	1000848	JC24V-50W	0.45	1.73	1.18	C-6	750	2950	2000	Clear	Univ	10	1
75	1000834	JC12V-75W	0.43	1.73	1.18	C-6	2200	3300	2000	Clear	Univ	10	1
100	1000839	JC24V-100W	0.43	1.73	1.18	CC-6	1800	3000	2000	Clear	Univ	10	1
Glass 2-Pin Base – GY6.35													
35	1000824	JC12V-35W	0.43	1.73	1.18	C-8	650	2900	2000	Clear	BD/Hor	10	2
35	1003486	JC12V-35WF	0.43	1.73	1.18	C-8	650	2900	2000	Frosted	BD/Hor	10	2
50	1000827	JC12V-50W	0.43	1.73	1.18	C-6	1000	3000	2000	Clear	Univ	10	3
50	1000828	JC12V-50W	0.43	1.73	1.18	C-8	1000	3000	2000	Clear	Univ	100	2
50	1003487	JC12V-50WF	0.43	1.73	1.18	C-8	1000	3000	2000	Frosted	Univ	10	2
75	1000835	JC12V-75W	0.43	1.73	1.18	C-6	1600	3000	2000	Clear	Univ	10	3
100	1000806	JC12V-100W	0.43	1.73	1.18	C-6	2300	3000	2000	Clear	Univ	10	3
100	1000807	JC12V-100WG	0.43	1.73	1.18	C-8	2300	3000	2000	Clear	Univ	10	2
100	1000381	EVA, JC12V-100H20	0.45	1.73	1.18	CBar6	2400	3000	2000	Clear	BD/Hor	10	3
100	1000490	FCR, JC12V-100W	0.43	1.65	1.18	CBar6	3000	3300	50	Clear	BD/Hor	10	3
100	1000507	FDX, JC12V-100WCG2	0.45	1.73	1.18	CBar6	3500	3300	50	Clear	Univ	12	4
300	1000545	FLW, JC24V-300WA-H	0.53	2.17	1.18	CBar6	10450	3500	50	Clear	BD	10	4
300	1000846	JC24V-300WB	0.69	2.17	1.30	CBar6	6600	3050	1000	Clear	Univ	10	3

All dimensions shown in inches unless otherwise noted.



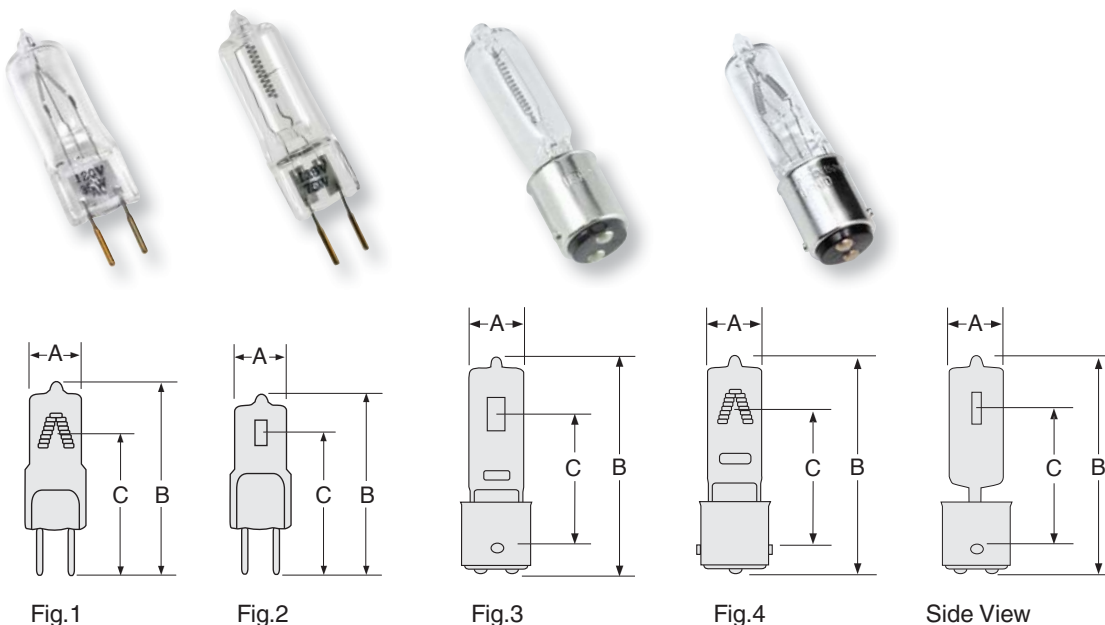
JCD & JCV

- Only for Use in Approved Enclosed Halogen Fixtures
- 2-Pin Base - GY6.35
- Double Contact Bayonet Base - BA15d
- Universal Burn Position
- 120 Volts (except as noted)

Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions			Filament Type	Lumens lm	Color Temp K	Avg Life h	Bulb Finish	Case Qty	Fig No
			Dia (A)	MOL (B)	LCL (C)							
2-Pin Base – GY6.35												
35	1000902	JCD120V-35W	0.43	2.17	1.50	CC-2V	500	2800	1500	Clear	10	1
50	1000905	JCD120V-50W	0.43	2.17	1.50	CC-2V	700	2800	1500	Clear	10	1
75	1000908	JCD120V-75W	0.45	2.17	1.50	CC-8	1100	2850	1500	Clear	10	2
Double Contact Bayonet Base – BA15d												
75	1000986	JCV120V-75WGB	0.47	2.32	1.38	CC-8	1200	2800	1000	Clear	10	3
75	1000987	JCV120V-75WGBF	0.55	2.83	1.38	CC-8	1125	2850	1000	Frosted	10	3
100	1000968	JCV120V-100WGB	0.51	2.44	1.38	CC-8	1600	2800	2000	Clear	10	3
100	1000969	JCV120V-100WGBF	0.51	2.44	1.38	CC-8	1550	2800	2000	Frosted	10	3
100	1000364	ESR, JCV120V-100WGB2	0.51	2.44	1.38	CC-2V	1800	2850	750	Clear	10	4
100	1000374	ETD, JCV120V-100WGB2F	0.51	2.44	1.38	CC-2V	1750	2850	750	Frosted	10	4
150	1000373	ETC, JCV120V-150WGB	0.51	2.44	1.38	CC-8	2800	2900	2000	Clear	10	3
150	1000362	ESP, JCV120V-150WGB2	0.51	2.44	1.38	CC-2V	2800	2900	1000	Clear	10	4
150	1000376	ETF, JCV120V-150WGBF	0.51	2.44	1.38	CC-8	2700	2900	2000	Frosted	10	3
200	1000512	FEV, JCV120V-200WCB2	0.51	2.44	1.38	CC-2V	5500	3200	50	Clear	10	4
200	1001803	JCV230V-200WGB	0.60	2.48	1.38	CC-8	5000	2800	2000	Clear	20	3
250	1000365	ESS, JCV120V-250WGB	0.51	2.99	1.61	CC-8	5000	3000	2000	Clear	10	3
250	1000372	ETB, JCV120V-250WGBF	0.51	2.99	1.61	CC-8	4800	3000	2000	Frosted	10	3
250	1000990	JCV130V-250WGBF*	0.51	2.99	1.61	CC-8	4800	3000	2000	Frosted	10	3
500	1000979	JCV120V-500WGB	0.51	3.43	2.13	CC-8	10450	2950	2000	Clear	10	3
500	1000980	JCV120V-500WGBF	0.51	3.43	2.13	CC-8	10100	2950	2000	Frosted	10	3

* Special Order Item

All dimensions shown in inches unless otherwise noted.



JCV

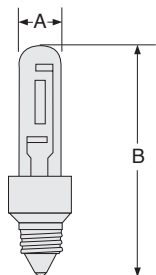
- Only Use Halogen Fill Lamps in Approved Enclosed Halogen Fixtures
- Universal Burn Position
- 120 Volts (except as noted)



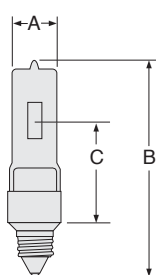
Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions			Filament Type	Lumens lm	Color Temp K	Avg Life h	Bulb Finish	Case Qty
			Dia (A)	MOL (B)	LCL (C)						
Krypton Fill – Mini Candelabra Base – E11 (Incandescent = cooler than halogen)											
20	1000973	JCV120V-20WGSN/E11/INC	0.41	2.56	1.77	CC-8	200	2700	2000	Clear	50
40	1000978	JCV120V-40WGSN/E11/INC	0.41	2.56	1.81	CC-8	560	2800	2000	Clear	10
60	1000982	JCV120V-60WGSN/E11/INC	0.47	2.56	1.81	CC-8	960	2800	2000	Clear	100
Halogen Fill – Mini Candelabra Base – E11											
75	1000988	JCV120V-75WGSN	0.47	2.72	1.26	CC-8	1125	2800	1000	Clear	10
75	1000989	JCV120V-75WGSNF	0.47	2.56	1.26	CC-8	1170	2850	1000	Frosted	10
100	1000970	JCV120V-100WGSN	0.55	2.72	1.26	CC-8	1600	2850	1500	Clear	10
100	1000971	JCV120V-100WGSNF	0.55	2.72	1.26	CC-8	1550	2800	1500	Frosted	10
100	1000361	ESN, JCV120V-100WGSN2	0.51	2.80	1.38	CC-2V	1800	2850	750	Clear	10
150	1000377	ETG, JCV120V-150WGSN	0.51	2.80	1.38	CC-8	2800	2900	2000	Clear	10
150	1000359	ESL, JCV120V-150WGSN2	0.51	2.80	1.38	CC-2V	2800	2900	1000	Clear	10
150	1000378	ETH, JCV120V-150WGSNF	0.51	2.80	1.38	CC-8	2700	2900	2000	Frosted	10
250	1000294	EHT, JCV120V-250WGSN	0.53	3.15	1.63	CC-8	5000	3000	2000	Clear	10
250	1000360	ESM, JCV120V-250WGSNF	0.51	3.15	1.61	CC-8	4800	3000	2000	Frosted	10
250	1000991	JCV130V-250WGSN	0.51	3.15	1.61	CC-8	5000	3000	2000	Clear	10
250	1001809	JCV130V-250WGSNF	0.51	3.15	1.61	CC-8	4850	3000	2000	Frosted	10
325	1000295	EHV, JCV120V-325WBS	0.51	3.15	1.61	CC-8	7800	3100	500	Clear	10
400	1000976	JCV120V-400WGSN	0.51	3.62	2.01	CC-8	8250	2950	2000	Clear	50
400	1000977	JCV120V-400WGSNF	0.51	3.62	2.01	CC-8	7850	2950	2000	Frosted	50
500	1000384	EVR, JCV120V-500WGS	0.51	3.62	2.01	CC-8	10450	2950	2000	Clear	50
500	1000466	EYX, JCV120V-500WGSF	0.51	3.62	2.01	CC-8	9500	3000	2000	Frosted	50
500	1000465	EYW, JCV130V-500WGS	0.51	3.62	2.01	CC-8	10000	3000	2000	Clear	10
500	1000464	EYV, JCV130V-500WGSF	0.51	3.62	2.01	CC-8	9500	3000	2000	Frosted	10
500	1000995	JCV230V-500WGS*	0.51	3.62	2.00	CC-8	9000	2950	2000	Clear	50
750	1000463	EYT, JCV120V-750WB1	0.51	3.74	2.01	CC-8	18500	3050	500	Clear	10
1000	1000967	JCV120V-1000WC3*	0.53	3.93	2.01	CC-8	26000	3200	300	Clear	10

* Special Order Item

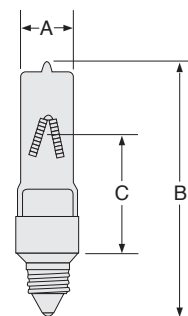
All dimensions shown in inches unless otherwise noted.



E11 Krypton



E11



E11

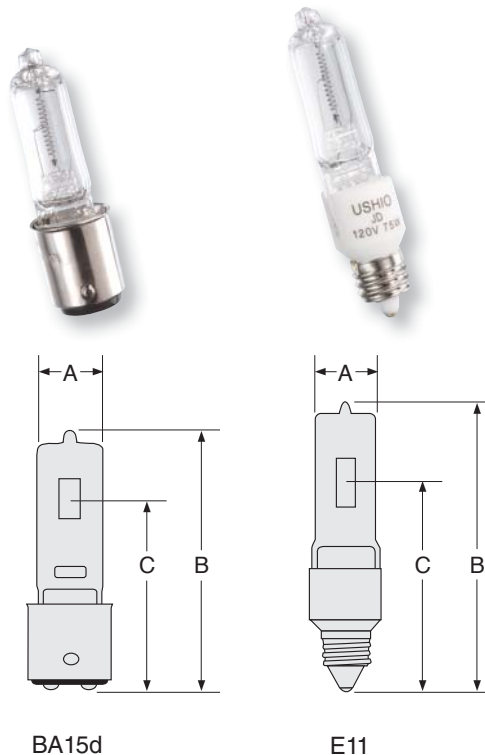
JD

- Only for Use in Approved Halogen Fixture
- Single Ended Halogen
- Universal Burn Position

Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions			Filament Type	Lumens lm	Color Temp K	Avg Life h	Bulb Finish	Case Qty
			Dia (A)	MOL (B)	LCL (C)						
Double Contact Bayonet Base – BA15d											
75	1003095	JD120V-75W/BA15D	0.53	2.56	1.26	CC-8	1125	2800	1000	Clear	10
75	1003638	JD120V-75W/BA15D	0.53	2.56	1.26	CC-8	1125	2800	1500	Clear	10
75	1003096	JD120V-75WF/BA15D*	0.53	2.56	1.26	CC-8	1090	2800	1000	Frosted	10
100	1003097	JD120V-100W/BA15D	0.53	2.56	1.38	CC-8	1600	2800	1500	Clear	10
100	1003098	JD120V-100WF/BA15D*	0.53	2.56	1.38	CC-8	1550	2800	1500	Frosted	10
150	1003099	JD120V-150W/BA15D	0.53	2.56	1.38	CC-8	2800	2900	2000	Clear	10
150	1003100	JD120V-150WF/BA15D	0.53	2.56	1.38	CC-8	2700	2900	2000	Frosted	10
Mini Candelabra Base – E11											
75	1003089	JD120V-75W/E11	0.53	2.71	1.26	CC-8	1125	2800	1000	Clear	10
75	1003090	JD120V-75WF/E11	0.53	2.71	1.26	CC-8	1090	2800	1000	Frosted	10
100	1003091	JD120V-100W/E11	0.53	2.80	1.38	CC-8	1600	2800	1500	Clear	10
100	1003092	JD120V-100WF/E11	0.53	2.80	1.38	CC-8	1550	2800	1500	Frosted	10
150	1003093	JD120V-150W/E11	0.53	3.00	1.38	CC-8	2800	2900	2000	Clear	10
150	1003094	JD120V-150WF/E11	0.53	3.00	1.38	CC-8	2700	2900	2000	Frosted	10

* Special Order Item

All dimensions shown in inches unless otherwise noted.



JT

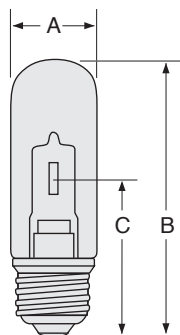
- Only for Use in Approved Halogen Fixtures
- Medium Screw Base - E26
- Mogul Screw Base - E39/E40
- Double Envelope
- 120 Volts (except as noted)
- Universal Burn Position

Watts	Ushio	Ushio	Dimensions			Filament	Lumens lm	Color	Avg	Bulb	Case
	Ordering	Lamp	Dia	MOL	LCL	Type		Temp	Life	Finish	Qty
	Code	Description	(A)	(B)	(C)			K	h		
Medium Screw Base – E26 Compact Version											
100	1001137	JT120V-100WG	1.22	3.35	2.01	CC-8	1600	2800	1500	Clear	10
150	1001883	JT120V-150WG*	1.22	3.35	2.13	CC-8	2800	2800	2000	Clear	10
250	1001141	JT120V-250WG	1.22	4.13	2.28	CC-8	5000	2950	2000	Clear	50
250	1001142	JT120V-250WGF*	1.22	4.13	2.28	CC-8	4850	2950	2000	Frosted	50
Mogul Screw Base – E39											
500	1001143	JT120V-500WB	1.57	7.60	4.84	C-8	11000	3200	2000	Clear	50
1000	1001134	JT120V-1000WB	1.65	10.2	6.18	C-8	22000	3050	2000	Clear	50
Mogul Screw Base – E40											
1000	1003361	JT120V-1000WC	1.65	7.67	4.84	C-8	25000	3200	150	Clear	50
500	1003516	JT220V-500WC1*	1.65	7.68	4.84	C-8	12500	3200	200	Clear	50
1000	1003517	JT220V-1000WC1*	1.65	7.68	4.84	C-8	25000	3200	200	Clear	50

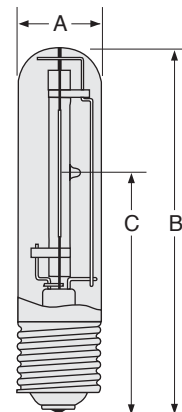
* Special Order Item

All dimensions shown in inches unless otherwise noted.

JT type Halogen lamps are double enveloped lamps in which a Halogen lamp serves as an inner tube.



E26
Compact Version



E39/E40

MR-8

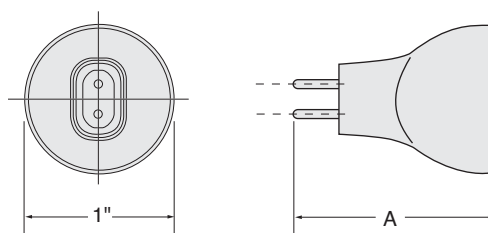
- Only for Use in Approved Halogen Fixtures
- 1 inch Diameter Dichroic Coating, Faceted Mirror Reflector
- Miniature 2-Pin Base - GZ4
- Low Voltage - 12 Volts
- Protective Front Glass Cover
- Universal Burn Position



Watts	Ushio	Ushio	Dimensions	Color	Beam			Avg	Case
	Ordering	Lamp	MOL	Temp	Angle	Spread	Max CP	Life	Qty
	Code	Description	(A)	K			cd	h	
Miniature 2-Pin Base – GZ4 with Front Glass Cover									
20	1003116	MR-8 12V-20W/NSP10/FG	1.36	3050	10°	Narrow Spot	1700	2000	12
20	1003117	MR-8 12V-20W/NFL23/FG	1.36	3050	23°	Narrow Flood	800	2000	12
35	1003118	MR-8 12V-35W/SP13/FG	1.36	3050	13°	Spot	2300	2000	12
35	1003119	MR-8 12V-35W/NFL26/FG	1.36	3050	26°	Narrow Flood	1400	2000	12

All dimensions shown in inches unless otherwise noted.

At only one inch in diameter, USHIO's **MR-8** lamp allows for even smaller fixture designs than MR-11 and MR-16 lamps.



GZ4

ø(ft)	H(ft)	E(fc)
1.84	3.28	14.7
3.77	6.56	3.6
5.61	9.84	1.67
10°	MR-8	20W

ø(ft)	H(ft)	E(fc)
1.51	3.28	6.87
8.72	6.56	1.77
13.1	9.84	.74
23°	MR-8	20W

ø(ft)	H(ft)	E(fc)
2.46	3.28	19.9
4.95	6.56	4.9
7.31	9.84	2.2
13°	MR-8	35W

ø(ft)	H(ft)	E(fc)
4.95	3.28	12.1
9.91	6.56	3.1
14.9	9.84	1.3
26°	MR-8	35W

MR-11

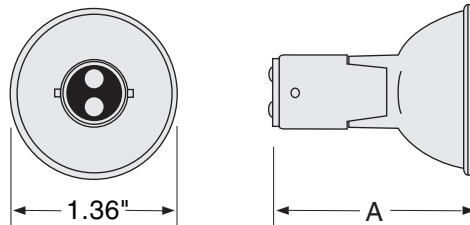
- Only for Use in Approved Halogen Fixtures
- Double Contact Bayonet Base - BA15d
- Low Voltage - 12 Volts
- Universal Burn Position
- Faceted Reflector
- Available with Front Glass Cover (/FG)



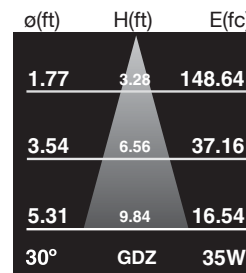
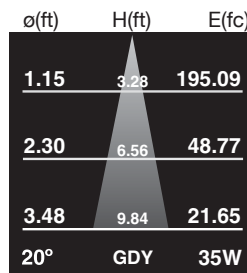
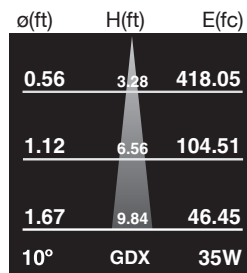
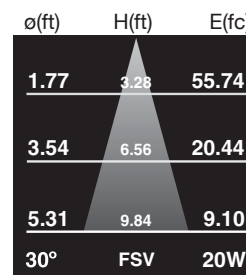
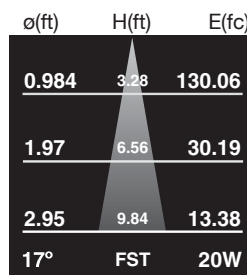
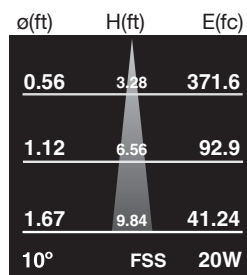
Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions	Filament Type	Color Temp K	Beam			Ave Life h	Case Qty
			MOL (A)			Angle	Spread	Max CP cd		
Double Contact Bayonet Base – BA15d										
20	1000607	FSS, JDR/M12V-20W/BA/NSP10	1.77	C-6	2900	10°	Narrow Spot	4000	2000	10
20	1000608	FSS/FG, JDR/M12V-20W/BA/NSP10/FG	1.89	C-6	2900	10°	Narrow Spot	4000	2000	10
20	1000609	FST, JDR/M12V-20W/BA/SP17	1.77	C-6	2900	17°	Spot	1400	2000	10
20	1000610	FST/FG, JDR/M12V-20W/BA/SP17/FG	1.89	C-6	2900	17°	Spot	1400	2000	10
20	1000611	FSV, JDR/M12V-20W/BA/FL30	1.77	C-6	2900	30°	Flood	600	2000	10
20	1000612	FSV/FG, JDR/M12V-20W/BA/FL30/FG	1.89	C-6	2900	30°	Flood	600	2000	10
35	1000655	GDX, JDR/M12V-35W/BA/NSP10	1.77	C-6	2900	10°	Narrow Spot	4500	2000	10
35	1000656	GDX/FG, JDR/M12V-35W/BA/NSP10/FG	1.89	C-6	2900	10°	Narrow Spot	4500	2000	10
35	1000657	GDY, JDR/M12V-35W/BA/SP20	1.77	C-6	3000	20°	Spot	2100	2000	10
35	1000658	GDY/FG, JDR/M12V-35W/BA/SP20/FG*	1.89	C-6	3000	20°	Spot	2100	2000	10
35	1000659	GDZ, JDR/M12V-35W/BA/FL30	1.77	C-6	2950	30°	Flood	1600	2000	10
35	1000660	GDZ/FG, JDR/M12V-35W/BA/FL30/FG	1.89	C-6	2950	30°	Flood	1600	2000	10

* Special Order Item

All dimensions shown in inches unless otherwise noted.



BA15d
with front glass cover



MR-11

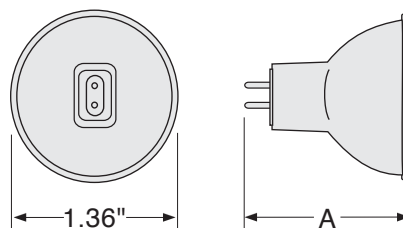
- Only for Use in Approved Halogen Fixtures
- 1.36 inch Diameter Dichroic Coating, Faceted Mirror Reflector
- Miniature 2-Pin Base - GZ4
- 12 & 24 Volts
- Available with Front Glass Cover (/FG)
- Universal Burn Position



Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions	Color	Beam			Ave Life h	Case Qty
			MOL (A)	Temp K	Angle	Spread	Max CP cd		
12V Miniature, 2-Pin Base – GZ4									
12	1000615	FTA, JDR/M12V-12W/G/NSP9.5	1.38	2925	9.5°	Narrow Spot	2300	2000	10
12	1000616	FTA/FG, JDR/M12V-12W/G/NSP9.5/FG	1.61	2925	9.5°	Narrow Spot	2300	2000	10
20	1000617	FTB, JDR/M12V-20W/G/SP10	1.38	2925	10°	Spot	3000	2000	10
20	1000618	FTB/FG, JDR/M12V-20W/G/SP10/FG	1.61	2925	10°	Spot	3000	2000	10
20	1000619	FTC, JDR/M12V-20W/G/SP17	1.38	2925	17°	Spot	1400	2000	10
20	1000620	FTC/FG, JDR/M12V-20W/G/SP17/FG	1.61	2925	17°	Spot	1400	2000	10
20	1000621	FTD, JDR/M12V-20W/G/FL30	1.38	2925	30°	Flood	600	2000	10
20	1000622	FTD/FG, JDR/M12V-20W/G/FL30/FG	1.61	2925	30°	Flood	600	2000	10
35	1000623	FTE, JDR/M12V-35W/G/SP12	1.38	2950	12°	Spot	4800	2000	10
35	1000624	FTE/FG, JDR/M12V-35W/G/SP12/FG	1.61	2950	12°	Spot	4800	2000	10
35	1000625	FTF, JDR/M12V-35W/G/SP20	1.38	2950	20°	Spot	2400	2000	10
35	1000626	FTF/FG, JDR/M12V-35W/G/SP20/FG	1.61	2950	20°	Spot	2400	2000	10
35	1000627	FTH, JDR/M12V-35W/G/FL30	1.38	2950	30°	Flood	1300	2000	10
35	1000628	FTH/FG, JDR/M12V-35W/G/FL30/FG	1.61	2950	30°	Flood	1300	2000	10
24V Miniature, 2-Pin Base – GZ4									
20	1001002	JDR/M24V-20W/SP12/FG	1.61	2925	12°	Spot	2200	2000	10
20	1000999	JDR/M24V-20W/SP19	1.38	2925	19°	Spot	1150	2000	10
20	1001000	JDR/M24V-20W/SP19/FG	1.61	2925	19°	Spot	1150	2000	10
20	1001003	JDR/M24V-20W/FL30	1.38	2925	30°	Flood	500	2000	10
20	1001004	JDR/M24V-20W/FL30/FG	1.61	2925	30°	Flood	500	2000	10
35	1001007	JDR/M24V-35W/SP13*	1.38	2925	13°	Spot	2100	2000	10
35	1001008	JDR/M24V-35W/SP13/FG	1.61	2925	13°	Spot	2100	2000	10
35	1001005	JDR/M24V-35W/SP19	1.38	2925	19°	Spot	1700	2000	10
35	1001010	JDR/M24V-35W/FL30/FG	1.61	2950	30°	Flood	850	2000	10

* Special Order Item

All dimensions shown in inches unless otherwise noted.



GZ4

ϕ (ft)	H(ft)	E(fc)
0.56	3.28	213.67
1.08	6.56	53.42
1.64	9.84	23.78
9.5°	FTA	12W

ϕ (ft)	H(ft)	E(fc)
0.56	3.28	278.7
1.12	6.56	69.68
1.67	9.84	30.94
10°	FTB	20W

ϕ (ft)	H(ft)	E(fc)
0.92	3.28	185.8
1.84	6.56	46.45
2.76	9.84	20.62
16°	JDR/M12V-20W/G/SP	20W

ϕ (ft)	H(ft)	E(fc)
0.98	3.28	130.06
1.97	6.56	32.52
2.95	9.84	14.49
17°	FTC	20W

ϕ (ft)	H(ft)	E(fc)
1.77	3.28	55.74
3.54	6.56	13.94
5.31	9.84	6.22
30°	FTD	20W

ϕ (ft)	H(ft)	E(fc)
0.69	3.28	445.92
1.38	6.56	111.48
2.07	9.84	49.52
12°	FTE	35W

ϕ (ft)	H(ft)	E(fc)
1.15	3.28	222.96
2.30	6.56	55.74
3.48	9.84	24.80
20°	FTF	35W

ϕ (ft)	H(ft)	E(fc)
1.77	3.28	120.77
3.54	6.56	30.19
5.31	9.84	13.38
30°	FTH	35W

ϕ (ft)	H(ft)	E(fc)
0.69	3.28	204.38
1.38	6.56	51.10
2.07	9.84	22.67
12°	JDR/M24V-20W/SP	20W

ϕ (ft)	H(ft)	E(fc)
1.12	3.28	106.84
2.20	6.56	26.76
3.28	9.84	11.89
19°	JDR/M24V-20W/SP	20W

ϕ (ft)	H(ft)	E(fc)
1.77	3.28	46.45
3.54	6.56	11.61
5.31	9.84	5.20
30°	JDR/M24V-20W/FL	20W

ϕ (ft)	H(ft)	E(fc)
.075	3.28	195.09
1.51	6.56	48.77
2.23	9.84	21.64
13°	JDR/M24V-35W/SP	35W

ϕ (ft)	H(ft)	E(fc)
1.12	3.28	157.93
2.20	6.56	39.48
3.28	9.84	17.56
19°	JDR/M24V-35W/SP	35W

ϕ (ft)	H(ft)	E(fc)
1.77	3.28	78.97
3.54	6.56	19.79
5.31	9.84	8.73
30°	JDR/M24V-35W/FL	35W

MR-11 EUROSTAR™ REFLEKTO™ SERIES

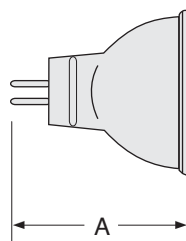
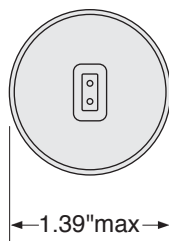
- Only for Use in Approved Halogen Fixtures
- Aluminized Multimirror Reflector
- Low Voltage - 12 Volts
- Less Heat to the Back of the Lamp
- Axial Filament
- Miniature 2-Pin Base - GU4
- Consistent Color
- Integrated UV Protection
- No Light Diffusion from Backspill
- Decorative Aluminum Coating in Clear & Matte Colors Black & Silver

Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions	Color Temp K	Beam			Ave Life h	Case Qty
			MOL (A)		Angle	Spread	Max CP cd		
EUROSTAR™ REFLEKTO™ 12V Miniature, 2-Pin Base – GU4									
20	1003344	20MR11/SP12/A/FG, REFLEKTO CLEAR	1.77	2900	12°	Spot	1600	1500	50
20	1003345	20MR11/FL36/A/FG, REFLEKTO CLEAR	1.77	2900	36°	Flood	500	1500	50
20	1003348	20MR11/SP12/B/FG, REFLEKTO BLACK	1.77	2900	12°	Spot	1600	1500	50
20	1003349	20MR11/FL36/B/FG, REFLEKTO BLACK	1.77	2900	36°	Flood	500	1500	50
20	1003352	20MR11/SP12/S/FG, REFLEKTO SILVER	1.77	2900	12°	Spot	1600	1500	50
20	1003353	20MR11/FL36/S/FG, REFLEKTO SILVER	1.77	2900	36°	Flood	500	1500	50
35	1003346	35MR11/SP12/A/FG, REFLEKTO CLEAR	1.77	2900	12°	Spot	2700	1500	50
35	1003347	35MR11/FL36/A/FG, REFLEKTO CLEAR	1.77	2900	36°	Flood	1050	1500	50
35	1003350	35MR11/SP12/B/FG, REFLEKTO BLACK	1.77	2900	12°	Spot	2700	1500	50
35	1003351	35MR11/FL36/B/FG, REFLEKTO BLACK	1.77	2900	36°	Flood	1050	1500	50
35	1003354	35MR11/SP12/S/FG, REFLEKKTO SILVER	1.77	2900	12°	Spot	2700	1500	50
35	1003355	35MR11/FL36/S/FG, REFLEKTO SILVER	1.77	2900	36°	Flood	1050	1500	50

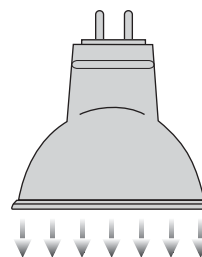
All dimensions shown in inches unless otherwise noted.



The aluminum coating of the reflector ensures lower heat radiation to the rear of the lamp.



GU4



ø(ft)	H(ft)	E(fc)
.69	3.28	148.92
1.38	6.56	36.97
2.10	9.84	16.91
2.79	13.12	8.92
12° MR-11 Reflektó 20W		

ø(ft)	H(ft)	E(fc)
.69	3.28	250.92
1.38	6.56	62.99
2.10	9.84	27.96
2.79	13.12	15.98
12° MR-11 Reflektó 35W		

ø(ft)	H(ft)	E(fc)
2.13	3.28	46.2
4.26	6.56	11.98
6.23	9.84	4.92
8.53	13.12	2.97
36° MR-11 Reflektó 20W		

ø(ft)	H(ft)	E(fc)
2.13	3.28	97.92
4.26	6.56	23.97
6.23	9.84	10.96
8.53	13.12	5.95
36° MR-11 Reflektó 35W		

MR-16 JR 12V - EUROSTAR™ SERIES

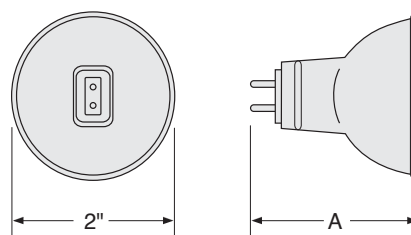
- Only for Use in Approved Halogen Fixtures
- Titanium Oxide Coated Reflector
- Axial Filament
- Low Voltage - 12 Volts

- Consistent Color
- Integrated UV Protection
- Precisely Focused Light Cone
- Up to 60 Degree Beam
- Available with Front Glass Cover (/FG)



Watts	Ushio Ordering Code	Ushio Lamp Description	Dimension	Filament	Beam		Color Temp K	Avg Life h	Burn Position	Case Qty
			MOL (A)	Type	Angle	Max CP cd				
EUROSTAR™ 12V, 2-Pin Base – GU5.3										
10	1001107	JR12V-10W/NFL21	1.77	C-8	21°	600	2800	1200	Univ	50
10	1001108	JR12V-10W/NFL21/FG	1.78	C-8	21°	600	2800	1200	Univ	50
10	1003154	JR12V-10W/FL32	1.77	C-8	32°	400	2800	1200	Univ	50
20	1000366	ESX, JR12V-20W/SP12	1.77	C-8	12°	3500	2950	5000	Univ	50
20	1000370	ESX/FG, JR12V-20W/SP12/FG	1.78	C-8	12°	3500	2950	5000	Univ	50
20	1000028	BBF, JR12V-20W/NFL24	1.77	C-8	24°	1200	2950	5000	Univ	50
20	1000037	BBF/FG, JR12V-20W/NFL24/FG	1.78	C-8	24°	1200	2950	5000	Univ	50
20	1000000	BAB, JR12V-20W/FL36	1.77	C-8	36°	600	2950	5000	Univ	50
20	1000014	BAB/FG, JR12V-20W/FL36/FG	1.78	C-8	36°	600	2950	5000	Univ	50
20	1000001	BAB/60, JR12V-20W/WFL60	1.77	C-8	60°	270	2950	5000	Univ	50
20	1000004	BAB/60/FG, JR12V-20W/WFL60/FG	1.78	C-8	60°	270	2950	5000	Univ	50
35	1000548	FMT/FRB, JR12V-35W/SP12	1.77	C-8	12°	6000	2950	5000	Univ	50
35	1000551	FMT/FG, JR12V-35W/SP12/FG	1.78	C-8	12°	6000	2950	5000	Univ	50
35	1000552	FMV/FRA, JR12V-35W/NFL24	1.77	C-8	24°	2300	2950	5000	Univ	50
35	1000559	FMV/FG, JR12V-35W/NFL24/FG	1.78	C-8	24°	2300	2950	5000	Univ	50
35	1000564	FMW, JR12V-35W/FL36	1.77	C-8	36°	1300	2950	5000	Univ	50
35	1000573	FMW/FG, JR12V-35W/FL36/FG	1.78	C-8	36°	1300	2950	5000	Univ	50
35	1000565	FMW/60, JR12V-35W/WFL60	1.77	C-8	60°	510	2950	5000	Univ	50
35	1000566	FMW/60/FG, JR12V-35W/WFL60/FG	1.78	C-8	60°	510	2950	5000	Univ	50
50	1000416	EXT, JR12V-50W/SP12	1.77	C-8	12°	11000	3000	5000	Univ	50
50	1000419	EXT/FG, JR12V-50W/SP12/FG	1.78	C-8	12°	11000	3000	5000	Univ	50
50	1000424	EXZ, JR12V-50W/NFL24	1.77	C-8	24°	3600	3000	5000	Univ	50
50	1000430	EXZ/FG, JR12V-50W/NFL24/FG	1.78	C-8	24°	3600	3000	5000	Univ	50
50	1000398	EXN, JR12V-50W/FL36	1.77	C-8	36°	2000	3000	5000	Univ	50
50	1000405	EXN/FG, JR12V-50W/FL36/FG	1.78	C-8	36°	2000	3000	5000	Univ	50
50	1000589	FNV, JR12V-50W/WFL60	1.77	C-8	60°	850	3000	5000	Univ	50
50	1000592	FNV/FG, JR12V-50W/WFL60/FG	1.78	C-8	60°	850	3000	5000	Univ	50
75	1000451	EYF, JR12V-75W/SP12	1.77	C-8	12°	13000	3000	5000	Univ	50
75	1000452	EYF/FG, JR12V-75W/SP12/FG	1.78	C-8	12°	13000	3000	5000	Univ	50
75	1000454	EYJ/EZZ, JR12V-75W/NFL24	1.77	C-8	24°	4800	3000	5000	Univ	50
75	1000455	EYJ/EZZ/FG, JR12V-75W/NFL24/FG	1.78	C-8	24°	4800	3000	5000	Univ	50
75	1000444	EYC, JR12V-75W/FL36	1.77	C-8	36°	2700	3000	5000	Univ	50
75	1000447	EYC/FG, JR12V-75W/FL36/FG	1.78	C-8	36°	2700	3000	5000	Univ	50
75	1000445	EYC/60, JR12V-75W/WFL60	1.77	C-8	60°	1220	3000	5000	Univ	50
75	1000446	EYC/60/FG, JR12V-75W/WFL60/FG	1.78	C-8	60°	1220	3000	5000	Univ	50

All dimensions shown in inches unless otherwise noted.



GU5.3

ø(ft)	H(ft)	E(fc)	ø(ft)	H(m)	E(fc)
1.25	3.28	55.74	1.97	3.28	37.16
2.53	6.56	13.94	3.94	6.56	9.29
3.77	9.84	6.22	5.90	9.84	4.09
5.05	13.12	3.53	7.87	13.12	2.32
21° JR12V-10W/NFL 10W			32° JR12V-10W/FL 10W		

ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)
0.69	3.28	325.15	1.41	3.28	111.48	2.13	3.28	55.74	3.77	3.28	25.08
1.38	6.56	81.29	2.79	6.56	27.87	4.26	6.56	13.94	7.58	6.56	6.32
2.10	9.84	36.14	4.20	9.84	12.36	6.40	9.84	6.22	11.35	9.84	2.79
2.79	13.12	20.35	5.58	13.12	6.97	8.53	13.12	3.53	15.15	13.12	1.58
12° ESX 20W			24° BBF 20W			36° BAB 20W			60° BAB/60 20W		

ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)
0.69	3.28	557.4	1.41	3.28	213.67	2.13	3.28	120.77	3.77	3.28	47.38
1.38	6.56	139.35	2.79	6.56	53.42	4.26	6.56	30.19	7.58	6.56	11.89
2.10	9.84	61.96	4.20	9.84	23.78	6.40	9.84	13.38	11.35	9.84	5.30
2.79	13.12	34.84	5.58	13.12	13.38	8.53	13.12	7.52	15.15	13.12	2.97
12° FMT/FRB 35W			24° FMV/FRA 35W			36° FMW 35W			60° FMW/60 35W		

ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)
0.69	3.28	1021.9	1.41	3.28	334.44	2.13	3.28	185.8	3.77	3.28	78.97
1.38	6.56	255.48	2.79	6.56	83.61	4.26	6.56	46.45	7.58	6.56	19.69
2.10	9.84	113.52	4.20	9.84	37.16	6.40	9.84	20.62	11.35	9.84	8.73
2.79	13.12	63.92	5.58	13.12	23.69	8.53	13.12	11.61	15.15	13.12	4.92
12° EXT 50W			24° EXZ 50W			36° EXN 50W			60° FNV 50W		

ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)
0.21	3.28	1207.7	1.41	3.28	445.92	2.13	3.28	250.83	3.77	3.28	113.33
1.38	6.56	301.93	2.79	6.56	111.48	4.26	6.56	62.71	7.58	6.56	28.33
2.10	9.84	134.15	4.20	9.84	49.52	6.40	9.84	27.87	11.35	9.84	12.63
2.79	13.12	75.43	5.58	13.12	27.87	8.53	13.12	15.70	15.15	13.12	7.06
12° EYF 75W			24° EYJ/EZZ 75W			36° EYC 75W			60° EYC/60 75W		

MR-16 JR 12V & 24V - EUROSTAR™ SERIES

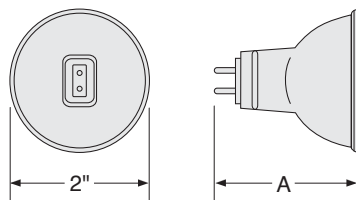
- Only for Use in Approved Halogen Fixtures
- 2 inch Diameter Dichroic Coated Reflector
- 2-Pin Base - GU5.3, GX5.3
- Available with Front Glass Cover (/FG)
- Consistent Color



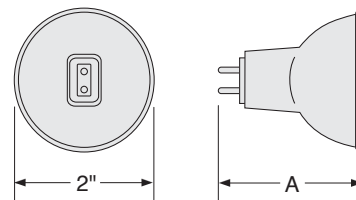
Watts	Ushio Ordering Code	Ushio Lamp Description	Dimension	Filament	Beam		Color Temp K	Avg Life h	Burn Position	Case Qty
			MOL (A)	Type	Angle	Max CP cd				
EUROSTAR™ 24V, 2-Pin Base – GU5.3										
20	1001112	JR24V-20W/SP12*	1.77	C-6	12°	3500	2900	2500	Univ	50
20	1001113	JR24V-20W/SP12/FG	1.78	C-6	12°	3500	2900	2500	Univ	50
20	1001114	JR24V-20W/FL36	1.77	C-6	36°	600	2900	2500	Univ	50
20	1001115	JR24V-20W/FL36/FG	1.78	C-6	36°	600	2900	2500	Univ	50
35	1003110	JR24V-35W/SP12*	1.77	C-6	12°	4600	2900	3500	Univ	50
35	1001119	JR24V-35W/SP12/FG	1.78	C-6	12°	4600	2900	3500	Univ	50
35	1001117	JR24V-35W/NFL24/FG	1.78	C-6	24°	1600	2900	3500	Univ	50
35	1003112	JR24V-35W/FL36	1.77	C-6	36°	900	2900	3500	Univ	50
35	1001121	JR24V-35W/FL36/FG	1.78	C-6	36°	900	2900	3500	Univ	50
50	1003113	JR24V-50W/SP12	1.77	C-6	12°	7000	2950	4000	Univ	50
50	1001125	JR24V-50W/SP12/FG	1.78	C-6	12°	7000	2950	4000	Univ	50
50	1003114	JR24V-50W/NFL24	1.77	C-6	24°	2900	2950	4000	Univ	50
50	1001123	JR24V-50W/NFL24/FG	1.78	C-6	24°	2900	2950	4000	Univ	50
50	1003115	JR24V-50W/FL36	1.77	C-6	36°	1600	2950	4000	Univ	50
50	1001127	JR24V-50W/FL36/FG	1.78	C-6	36°	1600	2950	4000	Univ	50
75	1003281	JR24V-75W/FL36/FG	1.78	C-6	36°	2500	2900	3000	Univ	50
12V, 2-Pin Base – GX5.3										
42	1000461	EYR, JR12V-42W/SP12	1.81	CC-6	12°	9000	3000	4000	Univ	10
42	1000462	EYS, JR12V-42W/NFL23	1.81	CC-6	23°	2800	3000	4000	Univ	10
42	1000460	EYP, JR12V-42W/FL38	1.81	CC-6	38°	1400	3000	4000	Univ	10
65	1000595	FPA, JR12V-65W/SP13	1.81	CC-6	13°	11500	3050	4000	Univ	10
65	1000596	FPB, JR12V-65W/FL38	1.81	CC-6	38°	2000	3050	4000	Univ	10

* Special Order Item

All dimensions shown in inches unless otherwise noted.



GU5.3



GX5.3

ø(ft)	H(ft)	E(fc)
0.69	3.28	325.15
1.38	6.56	81.29
2.10	9.84	36.14
2.79	13.12	20.35
12° JR24V-20W/SP 20W		

ø(ft)	H(ft)	E(fc)
0.69	3.28	427.34
1.38	6.56	106.84
2.10	9.84	47.47
2.79	13.12	26.76
12° JR24V-35W/SP 35W		

ø(ft)	H(ft)	E(fc)
0.69	3.28	650.3
1.38	6.56	162.58
2.10	9.84	72.28
2.79	13.12	40.69
12° JR24V-50W/SP 50W		

ø(ft)	H(ft)	E(fc)
1.41	3.28	148.64
2.79	6.56	37.16
4.20	9.84	16.54
5.58	13.12	9.29
24° JR24V-35W/NFL 35W		

ø(ft)	H(ft)	E(fc)
1.41	3.28	269.41
2.79	6.56	67.35
4.20	9.84	29.91
5.58	13.12	16.81
24° JR24V-50W/NFL 50W		

ø(ft)	H(ft)	E(fc)
2.13	3.28	55.74
4.26	6.56	13.94
6.40	9.84	6.22
8.53	13.12	3.53
36° JR24V-20W/FL 20W		

ø(ft)	H(ft)	E(fc)
2.13	3.28	83.61
4.26	6.56	20.90
6.40	9.84	9.29
8.53	13.12	5.20
36° JR24V-35W/FL 35W		

ø(ft)	H(ft)	E(fc)
2.13	3.28	148.64
4.26	6.56	37.16
6.40	9.84	16.54
8.53	13.12	9.29
36° JR24V-50W/FL 50W		

ø(ft)	H(ft)	E(fc)
2.13	3.28	232.25
4.26	6.56	58.06
6.40	9.84	25.83
8.53	13.12	14.49
36° JR24V-75W/FL 75W		

ø(ft)	H(ft)	E(fc)
0.69	3.28	836.10
1.38	6.56	190.45
2.07	9.84	84.54
EYR 12° JR12V-42W/SP 42W		

ø(ft)	H(ft)	E(fc)
0.75	3.28	1068.4
1.51	6.56	278.7
2.26	9.84	123.6
FPA 13° JR12V-65W/SP 65W		

ø(ft)	H(ft)	E(fc)
1.44	3.28	260.12
2.92	6.56	65.96
4.36	9.84	29.73
EYS 23° JR12V-42W/NFL 42W		

ø(ft)	H(ft)	E(fc)
2.39	3.28	130.06
4.79	6.56	27.87
7.18	9.84	12.08
EYP 38° JR12V-42W/FL 42W		

ø(ft)	H(ft)	E(fc)
2.23	3.28	185.80
4.46	6.56	49.24
6.69	9.84	21.37
FPB 38° JR12V-65W/FL 65W		

MR-16 EUROSTAR™ REFLEKTO™ SERIES

- Only for Use in Approved Halogen Fixtures
- Aluminized Multimirror Reflector
- Low Voltage - 12 Volts
- Less heat to back of the lamp
- Axial Filament
- Consistent Color
- Integrated UV Protection
- Precisely Focused Light Cone
- Universal Burn Position
- Available with Front Glass Cover (/FG)
- Up to 60 Degree Beam

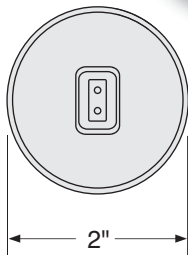


Watts	Ushio Ordering Code	Ushio Lamp Description	Dimension MOL (A)	Color Temp K	Beam Angle	Beam Spread	Max CP cd	Avg Life h	Case Qty
EUROSTAR™ REFLEKTO™ Multimirror Reflector, 2-Pin Base – GU5.3									
10	1002143	JR12V-10W/NFL24/A, EUROSTAR-REFLEKTO	1.77	2800	24°	Narrow Flood	400	1200	50
20	1000368	ESX/C/A, EUROSTAR-REFLEKTO	1.77	2950	12°	Spot	3500	3500	50
20	1000369	ESX/C/A/FG, EUROSTAR-REFLEKTO	1.78	2950	12°	Spot	3500	3500	50
20	1000033	BBF/C/A/FG, EUROSTAR-REFLEKTO	1.78	2950	24°	Narrow Flood	1200	3500	50
20	1000009	BAB/C/A, EUROSTAR-REFLEKTO	1.77	2950	36°	Flood	600	3500	50
20	1000010	BAB/C/A/FG, EUROSTAR-REFLEKTO	1.78	2950	36°	Flood	600	3500	50
35	1000549	FMT/C/A, EUROSTAR-REFLEKTO	1.77	2950	12°	Spot	6000	3500	50
35	1000550	FMT/C/A/FG, EUROSTAR-REFLEKTO	1.78	2950	12°	Spot	6000	3500	50
35	1000556	FMV/C/A, EUROSTAR-REFLEKTO	1.77	2950	24°	Narrow Flood	2300	3500	50
35	1000557	FMV/C/A/FG, EUROSTAR-REFLEKTO	1.78	2950	24°	Narrow Flood	2300	3500	50
35	1000570	FMW/C/A, EUROSTAR-REFLEKTO	1.77	2950	36°	Flood	1300	3500	50
35	1000571	FMW/C/A/FG, EUROSTAR-REFLEKTO	1.78	2950	36°	Flood	1300	3500	50
35	1001682	FMW/60/C/A, EUROSTAR-REFLEKTO	1.77	2950	60°	Wide Flood	510	3500	50
35	1001683	FMW/60/C/A/FG, EUROSTAR-REFLEKTO	1.78	2950	60°	Wide Flood	510	3500	50
50	1000417	EXT/C/A, EUROSTAR-REFLEKTO	1.77	3000	12°	Spot	11000	3500	50
50	1000418	EXT/C/A/FG, EUROSTAR-REFLEKTO	1.78	3000	12°	Spot	11000	3500	50
50	1000427	EXZ/C/A, EUROSTAR-REFLEKTO	1.77	3000	24°	Narrow Flood	3600	3500	50
50	1000428	EXZ/C/A/FG, EUROSTAR-REFLEKTO	1.78	3000	24°	Narrow Flood	3600	3500	50
50	1000402	EXN/C/A, EUROSTAR-REFLEKTO	1.77	3000	36°	Flood	2000	3500	50
50	1000403	EXN/C/A/FG, EUROSTAR-REFLEKTO	1.78	3000	36°	Flood	2000	3500	50
50	1000590	FNV/C/A, EUROSTAR-REFLEKTO	1.77	3000	60°	Wide Flood	850	3500	50
50	1000591	FNV/C/A/FG, EUROSTAR-REFLEKTO	1.78	3000	60°	Wide Flood	850	3500	50

All dimensions shown in inches unless otherwise noted.

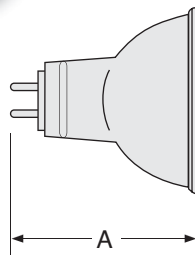


Up to
60° Beam Angle



2"

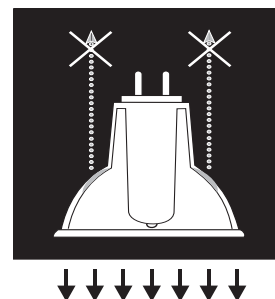
GU5.3



A

Reflektolamps are made with an aluminum deposition to reduce process heat emission through the back of the lamp. Well suited for enclosed or recessed fixtures

Reduced light diffusion from back-spill.



ø(ft)	H(ft)	E(fc)
1.41	3.28	37.16
2.79	6.56	9.29
4.20	9.84	4.09
5.58	13.12	2.32
24°	JR12V-10W/NFL/A	10W

ø(ft)	H(ft)	E(fc)
0.69	3.28	325.15
1.38	6.56	81.29
2.10	9.84	36.14
2.79	13.12	20.35
12°	ESX	20W

ø(ft)	H(ft)	E(fc)
1.41	3.28	111.48
2.79	6.56	27.87
4.20	9.84	12.36
5.58	13.12	6.97
24°	BBF	20W

ø(ft)	H(ft)	E(fc)
2.13	3.28	55.74
4.26	6.56	13.94
6.40	9.84	6.22
8.53	13.12	3.53
36°	BAB	20W

ø(ft)	H(ft)	E(fc)
0.69	3.28	557.4
1.38	6.56	139.35
2.10	9.84	61.96
2.79	13.12	34.84
12°	FMT	35W

ø(ft)	H(ft)	E(fc)
1.41	3.28	213.67
2.79	6.56	53.42
4.20	9.84	23.78
5.58	13.12	13.38
24°	FMV	35W

ø(ft)	H(ft)	E(fc)
2.13	3.28	120.77
4.26	6.56	30.19
6.40	9.84	13.38
8.53	13.12	7.52
36°	FMW	35W

ø(ft)	H(ft)	E(fc)
3.77	3.28	47.38
7.58	6.56	11.89
11.35	9.84	5.30
15.15	13.12	2.97
60°	FMW/60	35W

ø(ft)	H(ft)	E(fc)
0.69	3.28	1021.9
1.38	6.56	255.48
2.10	9.84	113.52
2.79	13.12	63.92
12°	EXT	50W

ø(ft)	H(ft)	E(fc)
1.41	3.28	334.44
2.79	6.56	83.61
4.20	9.84	37.16
5.58	13.12	20.90
24°	EXZ	50W

ø(ft)	H(ft)	E(fc)
2.13	3.28	185.80
4.26	6.56	46.45
6.40	9.84	20.62
8.53	13.12	11.61
36°	EXN	50W

ø(ft)	H(ft)	E(fc)
3.77	3.28	78.97
7.58	6.56	19.69
11.35	9.84	8.73
15.15	13.12	4.92
60°	FNV	50W

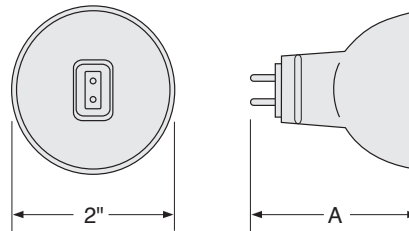
MR-16 EUROSTAR™ IR SERIES

- IR Technology Provides Up to 30% Energy-Savings
- Long Life 6,000 Hours Average Rated Life
- 2 inch Diameter Multi-layer Titanium Oxide Coated Reflector
- UV-Cut Halogen Capsule
- Front Glass Cover (/FG)



Watts	Ushio Ordering Code	Ushio Lamp Description	Dimension MOL (A)	Color Temp K	Angle	Beam Spread	Max CP cd	Avg Life h	Case Qty
EUROSTAR™ IR, 2-Pin Base – GU5.3									
37	1003706	JR12V-37W/SP/FG/IR	1.99	3000	9°	Spot	13000	6,000	20
37	1003705	JR12V-37W/NFL/FG/IR	1.99	3000	25°	Narrow Flood	4400	6,000	20
37	1003704	JR12V-37W/FL/FG/IR	1.99	3000	35°	Flood	2200	6,000	20
37	1003707	JR12V-37W/WFL/FG/IR	1.99	3000	60°	Wide Flood	1100	6,000	20
50	1003710	JR12V-50W/SP/FG/IR	1.99	3000	9°	Spot	15500	6,000	20
50	1003709	JR12V-50W/NFL/FG/IR	1.99	3000	25°	Narrow Flood	5700	6,000	20
50	1003708	JR12V-50W/FL/FG/IR	1.99	3000	35°	Flood	2800	6,000	20
50	1003711	JR12V-50W/WFL/FG/IR	1.99	3000	60°	Wide Flood	1400	6,000	20

All dimensions shown in inches unless otherwise noted.



GU5.3

The exceptional performance of the **Eurostar™ IR** lamps is a direct result of the unique capsule design and the thin film coatings that allow visible light to pass through the glass envelope while reflecting the infrared energy back to the filament. Because of this, the capsule maintains an optimum operating temperature and reduces the energy used by the lamp.

ø(ft)	H(ft)	E(fc)
0.52	3.3	1208
1.03	6.6	302
1.55	9.8	134
2.07	13.1	75
9° JR12V-37W/SP/FG/IR 37W		

ø(ft)	H(ft)	E(fc)
1.45	3.3	409
2.91	6.6	102
4.36	9.8	45
5.82	13.1	26
25° JR12V-37W/NFL/FG/IR 37W		

ø(ft)	H(ft)	E(fc)
2.07	3.3	204
4.14	6.6	51
6.21	9.8	23
8.28	13.1	13
35° JR12V-37W/FL/FG/IR 37W		

ø(ft)	H(ft)	E(fc)
3.79	3.3	102
7.58	6.6	26
11.37	9.8	11
15.15	13.1	6
60° JR12V-37W/WFL/FG/IR 37W		

ø(ft)	H(ft)	E(fc)
0.52	3.3	1440
1.03	6.6	360
1.55	9.8	160
2.07	13.1	90
9° JR12V-50W/SP/FG/IR 50W		

ø(ft)	H(ft)	E(fc)
1.45	3.3	529
2.91	6.6	132
4.36	9.8	59
5.82	13.1	33
25° JR12V-50W/NFL/FG/IR 50W		

ø(ft)	H(ft)	E(fc)
2.07	3.3	260
4.14	6.6	65
6.21	9.8	29
8.28	13.1	16
35° JR12V-50W/FL/FG/IR 50W		

ø(ft)	H(ft)	E(fc)
3.79	3.3	130
7.58	6.6	33
11.37	9.8	14
15.15	13.1	8
60° JR12V-50W/WFL/FG/IR 50W		

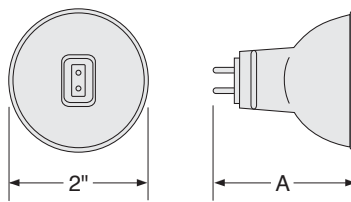
MR-16 EUROSAVER™ SERIES

- Only for Use in Approved Halogen Fixtures
- 2 inch Diameter Titanium Oxide Coated Reflector
- Up to 30% Energy-Savings
- Low Voltage - 12 Volts
- 60% Brighter than standard Halogen MR-16's
- Consistent Color
- Universal Burn Position
- Front Glass Cover (/FG)



Watts	Ushio Ordering Code	Ushio Lamp Description	Dimension MOL (A)	Color Temp K	Beam Angle	Beam Spread	Max CP cd	Avg Life h	Case Qty
EUROSAVER™ Titanium Oxide Coated Reflector, 2-Pin Base – GU5.3									
24	1003696	JR12V-24W/SP/FG/EUROSAVER	1.78	3000	9°	Spot	6000	4,000	50
24	1003695	JR12V-24W/NFL/FG/EUROSAVER	1.78	3000	20°	Narrow Flood	2300	4,000	50
24	1003694	JR12V-24W/FL/FG/EUROSAVER	1.78	3000	32°	Flood	1300	4,000	50
24	1003697	JR12V-24W/WFL/FG/EUROSAVER	1.78	3000	50°	Wide Flood	510	4,000	50
35	1003673	FMT/FG/EUROSAVER	1.78	3000	9°	Spot	11000	4,000	50
35	1003674	FMV/FG/EUROSAVER	1.78	3000	20°	Narrow Flood	3600	4,000	50
35	1003676	FMW/FG/EUROSAVER	1.78	3000	32°	Flood	2000	4,000	50
35	1003675	FMW/50/FG/EUROSAVER	1.78	3000	50°	Wide Flood	850	4,000	50
50	1003690	EXT/FG/EUROSAVER	1.78	3000	9°	Spot	13000	4,000	50
50	1003691	EXZ/FG/EUROSAVER	1.78	3000	20°	Narrow Flood	4800	4,000	50
50	1003689	EXN/FG/EUROSAVER	1.78	3000	32°	Flood	2700	4,000	50
50	1003692	FNV/FG/EUROSAVER	1.78	3000	50°	Wide Flood	1220	4,000	50

All dimensions shown in inches unless otherwise noted.



GU5.3

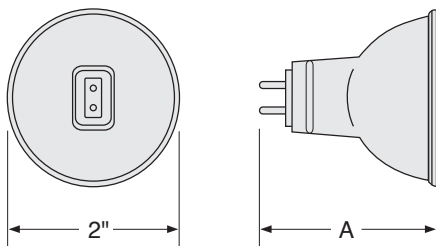
ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)
0.69	3.28	557.4	1.41	3.28	213.67	2.13	3.28	120.77	3.77	3.28	47.38
1.38	6.56	139.35	2.79	6.56	53.42	4.27	6.56	30.19	7.58	6.56	11.89
2.10	9.84	61.96	4.2	9.84	23.78	6.4	9.84	13.38	11.35	9.84	5.30
2.79	13.12	34.84	5.58	13.12	13.38	8.53	13.12	7.52	15.16	13.12	2.97
9° JR12V-24W/SP/FG 24W			20° JR12V-24W/NFL/FG 24W			32° JR12V-24W/FL/FG 24W			50° JR12V-24W/WFL/FG 24W		
0.69	3.28	1021.9	1.41	3.28	334.44	2.13	3.28	185.8	3.77	3.28	78.96
1.38	6.56	255.47	2.79	6.56	83.61	4.27	6.56	46.45	7.58	6.56	19.78
2.10	9.84	113.52	4.2	9.84	37.16	6.4	9.84	20.62	11.35	9.84	8.73
2.79	13.12	63.91	5.58	13.12	20.9	8.53	13.12	11.61	15.16	13.12	4.92
9° FMT 35W			20° FMV 35W			32° FMW 35W			50° FMW 35W		
0.69	3.28	1207.7	1.41	3.28	445.92	2.13	3.28	250.83	3.77	3.28	113.34
1.38	6.56	301.93	2.79	6.56	111.48	4.26	6.56	62.71	7.58	6.56	28.33
2.10	9.84	134.15	4.2	9.84	49.52	6.4	9.84	27.87	11.35	9.84	12.63
2.79	13.12	75.53	5.58	13.12	27.87	8.53	13.12	15.70	15.16	13.12	7.06
9° EXT 50W			20° EXZ 50W			32° EXN 50W			50° FNV 50W		

MR-16 ULTRALINE™ SERIES

- Only for Use in Approved Halogen Fixtures
- Long Life 10,000 Hours Average Rated Life
- 2 inch Diameter Titanium Oxide Coated Reflector
- Lasts Up to 2 Times Longer Than Other MR-16 Lamps
- Low Voltage - 12 Volts
- Consistent Color
- Integrated UV Protection
- Precisely Focused Light Cone
- Cool Beam Effect
- Up to 60 Degree Beam
- Universal Burn Position
- Front Glass Cover (/FG)

Watts	Ushio Ordering Code	Ushio Lamp Description	Dimension MOL (A)	Color Temp K	Beam Angle	Beam Spread	Max CP cd	Avg Life h	Case Qty
ULTRALINE™ Titanium Oxide Coated Reflector, 2-Pin Base – GU5.3									
20	1003413	BBF/FG/ULTRA	1.78	3000	24°	Narrow Flood	880	10000	50
20	1003412	BAB/FG/ULTRA	1.78	3000	36°	Flood	450	10000	50
35	1002236	FMV/FG/ULTRA	1.78	3000	24°	Narrow Flood	1700	10000	50
35	1002237	FMW/FG/ULTRA	1.78	3000	36°	Flood	950	10000	50
35	1003342	FMW/60/FG/ULTRA	1.78	3000	60°	Wide Flood	370	10000	50
50	1002168	EXT/FG/ULTRA	1.78	3100	12°	Spot	8600	10000	50
50	1002114	EXZ/FG/ULTRA	1.78	3100	24°	Narrow Flood	2700	10000	50
50	1000410	EXN/FG/ULTRA	1.78	3100	36°	Flood	1500	10000	50
50	1003343	FNV/60/FG/ULTRA	1.78	3100	60°	Wide Flood	620	10000	50

All dimensions shown in inches unless otherwise noted.



GU5.3

The exceptional performance of the **Ultraline™** MR-16 reflector lamps are a result of new advancements in our filament design and gas fill technologies. Manufactured under ISO 9001 guidelines, refinements in the reflector coating process slows deterioration of the reflector, allowing Ultraline™ lamps to maintain their consistent Halogen color throughout the life of the lamp.

Rated at more than twice the life of other MR-16s on the market today, Ultraline™ lamps are an astute choice for applications where frequency of lamp changes and cost of ownership are significant factors. The Halogen capsule helps to protect ultraviolet sensitive objects by eliminating 90% of harmful UV emissions.



ø(ft)	H(ft)	E(fc)
0.69	3.28	798.94
1.41	6.56	199.74
2.13	9.84	88.72
2.85	13.12	49.89
12°	EXT	50W

ø(ft)	H(ft)	E(fc)
1.41	3.28	81.75
2.79	6.56	20.44
4.20	9.84	9.10
5.58	13.12	5.11
24°	BBF	20W

ø(ft)	H(ft)	E(fc)
1.41	3.28	157.93
2.79	6.56	39.48
4.20	9.84	17.56
5.58	13.12	9.85
24°	FMV	35W

ø(ft)	H(ft)	E(fc)
1.41	3.28	250.83
2.79	6.56	62.71
4.20	9.84	27.87
5.58	13.12	15.70
24°	EXZ	50W

ø(ft)	H(ft)	E(fc)
2.13	3.28	41.81
4.26	6.56	10.50
6.40	9.84	4.65
8.53	13.12	2.32
36°	BAB	20W

ø(ft)	H(ft)	E(fc)
2.13	3.28	88.26
4.26	6.56	22.11
6.40	9.84	9.85
8.53	13.12	5.48
36°	FMW	35W

ø(ft)	H(ft)	E(fc)
2.13	3.28	139.35
4.26	6.56	34.84
6.40	9.84	15.51
8.53	13.12	8.73
36°	EXN	50W

ø(ft)	H(ft)	E(fc)
3.77	3.28	37.16
7.58	6.56	9.29
11.35	9.84	4.09
15.15	13.12	2.32
60°	FMW	35W

ø(ft)	H(ft)	E(fc)
3.77	3.28	55.74
7.58	6.56	13.94
11.35	9.84	6.22
15.15	13.12	3.53
60°	FNV	50W

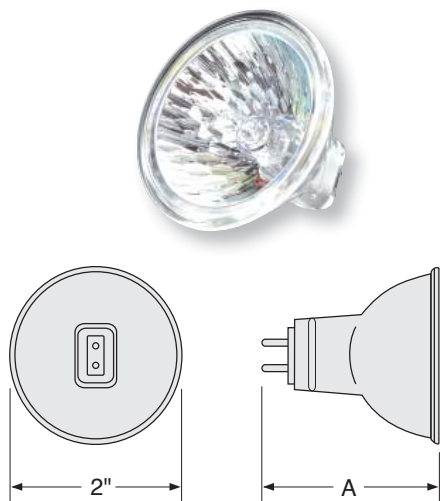
MR-16 ULTRALINE™ TITAN SERIES

- Only for Use in Approved Halogen Fixtures
- Up to 18,000 Hours Average Rated Life
- 2 inch Diameter Titanium Oxide Coated Reflector
- Lasts Up to 4 Times Longer Than Other MR-16 Lamps
- Low Voltage - 12 Volts
- Consistent Color
- Integrated UV Protection
- Precisely Focused Light Cone
- Cool Beam Effect
- Up to 60 Degree Beam
- Universal Burn Position
- Front Glass Cover (/FG)

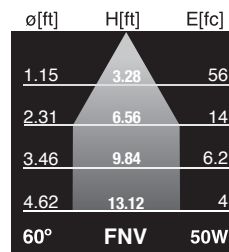
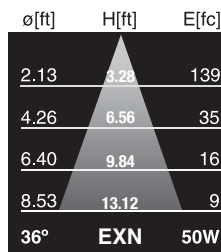
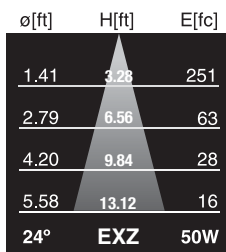
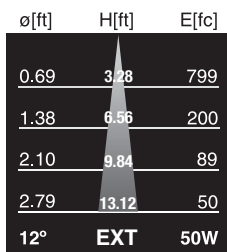
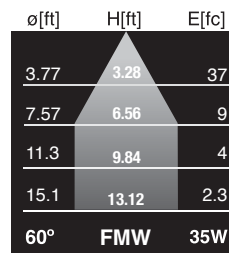
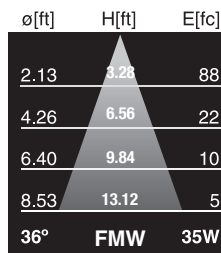
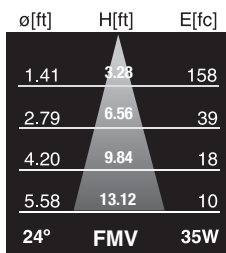
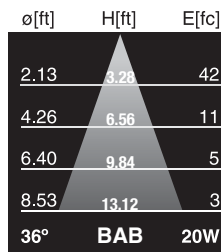
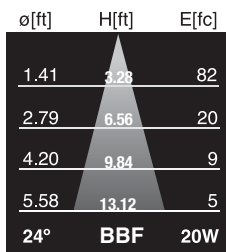
Watts	Ushio Ordering Code	Ushio Lamp Description	Dimension MOL (A)	Color Temp K	Beam Angle	Beam Spread	Max CP cd	Avg Life h	Case Qty
ULTRALINE™ Titanium Oxide Coated Reflector, 2-Pin Base – GU5.3									
20	1003551	BBF/FG/ULTRA TITAN	1.78	3000	24°	Narrow Flood	880	12000	50
20	1003552	BAB/FG/ULTRA TITAN	1.78	3000	36°	Flood	450	12000	50
35	1003556	FMV/FG/ULTRA TITAN	1.78	3000	24°	Narrow Flood	1700	18000	50
35	1003557	FMW/FG/ULTRA TITAN	1.78	3000	36°	Flood	950	18000	50
35	1003558	FMW/60/FG/ULTRA TITAN	1.78	3000	60°	Wide Flood	370	18000	50
50	1003554	EXT/FG/ULTRA TITAN	1.78	3100	12°	Spot	8600	18000	50
50	1003555	EXZ/FG/ULTRA TITAN	1.78	3100	24°	Narrow Flood	2700	18000	50
50	1003553	EXN/FG/ULTRA TITAN	1.78	3100	36°	Flood	1500	18000	50
50	1003559	FNV/60/FG/ULTRA TITAN	1.78	3100	60°	Wide Flood	620	18000	50

All dimensions shown in inches unless otherwise noted.

The longest life Halogen MR-16 lamps on the market, the **Ultraline™ Titan** provides long life, consistent color throughout lamp life and integrated UV protection. These lamps are the result of years of development and innovations in filament construction, gas fill technology and refinements in the reflector coating process.



GU5.3



MR-16 SUPERLINE™ SERIES

- Only for Use in Approved Halogen Fixtures
- 2 inch Diameter Multilense Reflector
- Excellent Center-to-Edge Beam Uniformity
- High Quality Titanium Oxide Reflector Coating
- Consistent Color
- Integrated UV Protection
- 5,000 Hours Average Rated Life
- Low Voltage - 12 Volts
- Universal Burn Position
- Available with Front Glass Cover (/FG)

Watts	Ushio Ordering Code	Ushio Lamp Description	Dimension	Color	Beam			Avg Life h	Case Qty
			MOL (A)	Temp K	Angle	Spread	Max CP cd		
SUPERLINE Superior Beam Spread, 2-Pin Base – GU5.3									
20	1000043	BBF/SL, SUPERLINE	1.77	2950	24°	Narrow Flood	870	5000	50
20	1000020	BAB/SL, SUPERLINE	1.77	2950	36°	Flood	510	5000	50
20	1000015	BAB/FG/SL, SUPERLINE	1.78	2950	36°	Flood	510	5000	50
35	1000563	FMV/SL, SUPERLINE	1.77	2950	24°	Narrow Flood	2000	5000	50
35	1000560	FMV/FG/SL, SUPERLINE	1.78	2950	24°	Narrow Flood	2000	5000	50
35	1000577	FMW/SL, SUPERLINE	1.77	2950	36°	Flood	1200	5000	50
35	1000574	FMW/FG/SL, SUPERLINE*	1.78	2950	36°	Flood	1200	5000	50
50	1000440	EXZ/SL, SUPERLINE	1.77	3050	24°	Narrow Flood	3000	5000	50
50	1000431	EXZ/FG/SL, SUPERLINE	1.78	3050	24°	Narrow Flood	3000	5000	50
50	1000409	EXN/SL, SUPERLINE	1.77	3050	36°	Flood	1580	5000	50
50	1000406	EXN/FG/SL, SUPERLINE	1.78	3050	36°	Flood	1580	5000	50

* Special Order Item

All dimensions shown in inches unless otherwise noted.

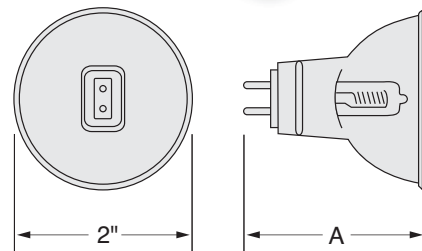
The geometry of the **Superline™** Multilense Reflector together with an axial filament design, guarantees an absolute uniform appearance across the beam without unsightly, dark spots or rings. (All Photos: 20 Watt, flood distribution, taken 1 meter from screen)



Standard Multimirror Reflector



Superline™- Multilense Reflector

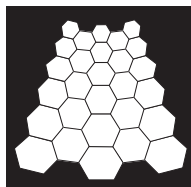


GU5.3

Superline™- Multilense Reflector

Reflector Surface:

Optimized reflector design with hexagonal-shaped lenses



Reflector Cross Section:

The hexagonal-shaped lenses provide total uniformity of light distribution



See Photometrics
on page 44

MR-16 SUPERLINE™ REFLEKTO™ SERIES

- Only for Use in Approved Halogen Fixtures
- 2 inch Diameter Multilense Reflector
- No Light Diffusion from Backspill
- Consistent Color

- Low Voltage - 12 Volts
- Integrated UV Protection
- Universal Burn Position
- Available with Front Glass Cover (/FG)

Decorative Aluminum
Coating in Matte Colors
Black, Silver and Bronze.

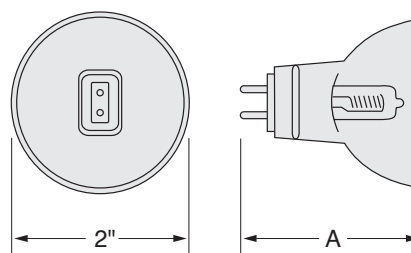
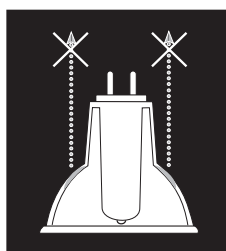


Watts	Ushio Ordering Code	Ushio Lamp Description	Dimension MOL (A)	Color Temp K	Beam Angle	Spread	Max CP cd	Avg Life h	Case Qty
SUPERLINE™ REFLEKTO™ Aluminized Colored Back, 2-Pin Base – GU5.3									
20	1000005	BAB/B, REFLEKTO BLACK	1.77	2900	36°	Flood	510	3500	50
20	1000007	BAB/B/FG, REFLEKTO BLACK	1.78	2900	36°	Flood	510	3500	50
20	1000018	BAB/S, REFLEKTO SILVER	1.77	2900	36°	Flood	510	3500	50
20	1000019	BAB/S/FG, REFLEKTO SILVER	1.78	2900	36°	Flood	510	3500	50
35	1000554	FMV/B/FG, REFLEKTO BLACK	1.78	2950	24°	Narrow Flood	2000	3500	50
35	1000567	FMW/B, REFLEKTO BLACK	1.77	2950	36°	Flood	1200	3500	50
35	1000568	FMW/B/FG, REFLEKTO BLACK	1.78	2950	36°	Flood	1200	3500	50
35	1003543	FMW/BZ/FG, REFLEKTO BRONZE	1.78	2950	36°	Flood	1200	3500	50
35	1000575	FMW/S, REFLEKTO SILVER	1.77	2950	36°	Flood	1200	3500	50
35	1000576	FMW/S/FG, REFLEKTO SILVER	1.78	2950	36°	Flood	1200	3500	50
50	1001652	EXZ/B, REFLEKTO BLACK	1.77	3000	24°	Narrow Flood	3000	3500	50
50	1000425	EXZ/B/FG, REFLEKTO BLACK	1.78	3000	24°	Narrow Flood	3000	3500	50
50	1003542	EXZ/BZ/FG, REFLEKTO BRONZE	1.78	3000	24°	Narrow Flood	3000	3500	50
50	1001653	EXZ/S, REFLEKTO SILVER	1.77	3000	24°	Narrow Flood	3000	3500	50
50	1000439	EXZ/S/FG, REFLEKTO SILVER	1.78	3000	24°	Narrow Flood	3000	3500	50
50	1000399	EXN/B, REFLEKTO BLACK	1.77	3000	36°	Flood	1580	3500	50
50	1000400	EXN/B/FG, REFLEKTO BLACK	1.78	3000	36°	Flood	1580	3500	50
50	1003541	EXN/BZ/FG, REFLEKTO BRONZE	1.78	3000	36°	Flood	1580	3500	50
50	1000407	EXN/S, REFLEKTO SILVER	1.77	3000	36°	Flood	1580	3500	50
50	1000408	EXN/S/FG, REFLEKTO SILVER	1.78	3000	36°	Flood	1580	3500	50

Decorative Silver, Black or Bronze Coating Stops Backspill of Any Light

All dimensions shown in inches unless otherwise noted.

The aluminum coating of the reflector ensures lower heat radiation to the rear of the lamp.



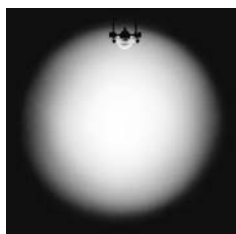
GU5.3

Superline™- Multilense Reflector

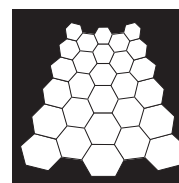
Standard Multimirror Reflector



Superline™- Multilense Reflector



The geometry of the Multilense reflector together with an axial filament design, guarantees an absolute uniform appearance across the beam without unsightly shadows, dark spots or rings.
(All photos: 20W, flood distribution, taken 1 meter from screen)



Reflector Surface:
Optimized reflector design with hexagonal-shaped lenses



Reflector Cross Section:
The hexagonal-shaped lenses provide total uniformity of light distribution

See Photometrics on page 44

ø(ft)	H(ft)	E(fc)
1.41	3.28	80.82
2.79	6.56	20.25
4.20	9.84	9.01
5.58	13.12	5.02
24°	BBF	20W

ø(ft)	H(ft)	E(fc)
2.13	3.28	47.38
4.26	6.56	11.89
6.40	9.84	5.30
8.53	13.12	2.97
36°	BAB	20W

ø(ft)	H(ft)	E(fc)
1.41	3.28	185.8
2.79	6.56	46.45
4.20	9.84	20.62
5.58	13.12	11.61
24°	FMV	35W

ø(ft)	H(ft)	E(fc)
2.13	3.28	111.48
4.26	6.56	27.87
6.40	9.84	12.36
8.53	13.12	6.97
36°	FMW	35W

ø(ft)	H(ft)	E(fc)
1.41	3.28	278.7
2.79	6.56	69.68
4.20	9.84	30.94
5.58	13.12	17.47
24°	EXZ	50W

ø(ft)	H(ft)	E(fc)
2.13	3.28	146.78
4.26	6.56	36.70
6.40	9.84	16.35
8.53	13.12	9.20
36°	EXN	50W

MR-16 WHITESTAR™ SERIES

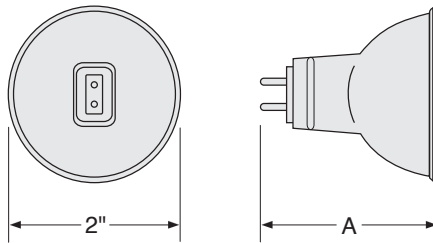
- Only for Use in Approved Halogen Fixtures
- High Color Temperature 4200K–6500K
- 2 inch Diameter Dichroic Reflector
- UV-Cut Halogen Capsule
- Low Voltage - 12 Volts
- 2-Pin Base - GU5.3
- Universal Burn Position
- Integrated Front Glass Cover (FG)



Watts	Ushio Ordering Code	Ushio Lamp Description	Dimension MOL (A)	Color Temp K	Angle	Beam Spread	Max CP cd	Avg Life h	Case Qty
WHITESTAR™ High Color Temperature, 2-Pin Base – GU5.3									
35	1003340	FMW/FG/WS/4200, WHITESTAR	1.78	4200	36°	Flood	600	4000	50
35	1003341	FMW/FG/WS/5300, WHITESTAR	1.78	5300	36°	Flood	500	4000	50
50	1002287	EXT/FG/WS/4700, WHITESTAR	1.78	4700	12°	Spot	5000	4000	50
50	1002286	EXZ/FG/WS/4200, WHITESTAR	1.78	4200	24°	Narrow Flood	2000	4000	50
50	1002249	EXN/FG/WS/4200, WHITESTAR	1.78	4200	36°	Flood	1200	4000	50
50	1003226	EXT/FG/WS/6500, WHITESTAR	1.78	6500	12°	Spot	3300	4000	50
50	1003224	EXZ/FG/WS/5300, WHITESTAR	1.78	5300	24°	Narrow Flood	1100	4000	50
50	1003225	EXN/FG/WS/5300, WHITESTAR	1.78	5300	36°	Flood	600	4000	50

All dimensions shown in inches unless otherwise noted.

The **Whitestar™** lamp was designed to provide a full spectrum MR-16 for display and task lighting. This high color temperature lamp projects a high luminous intensity with low ultraviolet and infrared emissions to protect artwork and valuable merchandise. Ideal for displaying silver, glass, diamonds and crystal.



GU5.3

ø(ft)	H(ft)	E(fc)
2.07	3.28	55.93
3.94	6.56	13.94
6.23	9.84	5.97
8.20	13.12	3.99
36°	FMW 4200K	35W

ø(ft)	H(ft)	E(fc)
2.07	3.28	55.93
3.94	6.56	13.94
6.23	9.84	5.97
8.20	13.12	3.99
36°	FMW 5300K	35W

ø(ft)	H(ft)	E(fc)
.69	3.28	464.5
1.38	6.56	116.13
2.10	9.84	51.65
2.79	13.12	29.08
12°	EXT 4700K	50W

ø(ft)	H(ft)	E(fc)
1.41	3.28	185.80
2.79	6.56	46.45
4.20	9.84	20.62
5.58	13.12	11.61
24°	EXZ 4200K	50W

ø(ft)	H(ft)	E(fc)
2.11	3.28	111.48
4.26	6.56	27.87
6.40	9.84	12.36
8.53	13.12	6.97
36°	EXN 4200K	50W

ø(ft)	H(ft)	E(fc)
.69	3.28	306.57
1.38	6.56	76.64
2.10	9.84	34.09
2.79	13.12	19.14
12°	EXT 6500K	50W

ø(ft)	H(ft)	E(fc)
1.41	3.28	102.19
2.79	6.56	25.55
4.20	9.84	11.33
5.58	13.12	6.41
24°	EXZ 5300K	50W

ø(ft)	H(ft)	E(fc)
2.13	3.28	55.74
4.26	6.56	13.94
6.40	9.84	6.22
8.53	13.12	3.53
36°	EXN 5300K	50W

MR-16 SPECIALTY LAMPS

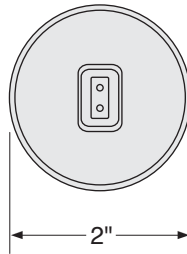
- Only for Use in Approved Halogen Fixtures
- 2 inch Diameter Dichroic Reflector
- Low Voltage - 12 Volts
- 2-Pin Base - GU5.3
- Universal Burn Position
- Integrated Front Glass Cover (/FG)

Watts	Ushio Ordering Code	Ushio Lamp Description	Dimension MOL (A)	Color	Angle	Beam Spread	Max CP cd	Avg Life h	Case Qty
POPSTAR™ Colored Dichroic Lens, 2-Pin Base – GU5.3									
50	1000580	FNC/FG, JR12V-50W/FG	1.78	Yellow	12°	Spot	9000	4000	50
50	1000582	FND/FG, JR12V-50W/FG	1.78	Red	12°	Spot	2000	4000	50
50	1000584	FNE/FG, JR12V-50W/FG	1.78	Green	12°	Spot	4400	4000	50
50	1000586	FNF/FG, JR12V-50W/FG	1.78	Blue	12°	Spot	2200	4000	50
50	1003200	EXT/MG/FG, JR12V-50W/FG	1.78	Magenta	12°	Spot	4400	4000	50
50	1003132	EXT/OR/FG, JR12V-50W/FG	1.78	Orange	12°	Spot	5000	4000	50
FIBERLINE™ Dichroic Coated Reflector, 2-Pin Base – GU5.3									
Luminous Flux									
50	1003125	JCR12V-50W/FO, ENL/HO	1.77	—	30°	Flood	360	4000	50
75	1003239	JCR12V-75W/FO	1.77	—	30°	Flood	500	3500	50

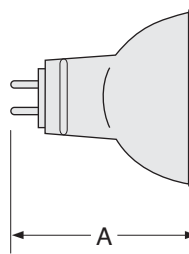
All dimensions shown in inches unless otherwise noted.



POPSTAR™



2"



A

GU5.3



FIBERLINE™

**POPSTAR™
Chromaticity Coordinates**

50W	Yellow	x = .520	y = .471
	Red	x = .686	y = .307
	Blue	x = .135	y = .307
	Green	x = .286	y = .681
	Orange	x = .618	y = .378
	Magenta	x = .577	y = .312

**POPSTAR™
Photometrics**

ø(ft)	H(ft)	E(fc)
0.69	3.38	836.1
2.26	6.56	209
2.01	9.84	92.9
2.79	13.12	52.21
12°	FNC/FG	50W

ø(ft)	H(ft)	E(fc)
0.69	3.38	185.8
2.26	6.56	46.45
2.01	9.84	20.62
2.79	13.12	11.61
12°	FND/FG	50W

ø(ft)	H(ft)	E(fc)
0.69	3.38	408.8
2.26	6.56	102.2
2.01	9.84	45.43
2.79	13.12	25.55
12°	FNE/FG	50W

ø(ft)	H(ft)	E(fc)
0.69	3.38	204.38
2.26	6.56	51.10
2.01	9.84	22.67
2.79	13.12	12.73
12°	FNF/FG	50W

ø(ft)	H(ft)	E(fc)
0.69	3.38	464.5
2.26	6.56	116.13
2.01	9.84	51.65
2.79	13.12	28.98
12°	EXT/OR	50W

ø(ft)	H(ft)	E(fc)
0.69	3.38	408.76
2.26	6.56	102.19
2.01	9.84	45.43
2.79	13.12	25.55
12°	EXT/MG	50W

MR-16 SOFTLINE™ SERIES

- Only for Use in Approved Halogen Fixtures
- 2 inch Diameter Titanium Oxide Coated Reflector
- Low Voltage - 12 Volts
- Frosted Front Glass Surface
- Reduces Glare
- Eliminates Spots or Striations
- UV-Cut Halogen Capsule
- Consistent Color
- Universal Burn Position



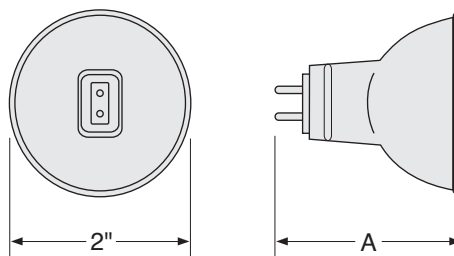
Watts	Ushio	Ushio	Dimension	Filament	Color	Beam			Avg	Case
	Ordering	Lamp	MOL	Type	Temp	Angle	Spread	Max CP	Life	Qty
	Code	Description	(A)		K			cd	h	
SOFTLINE™ Frosted Front Glass Cover, 2-Pin Base – GU5.3										
20	1003284	JR12V-20W/FL30/FG/SFT	1.78	C-8	2950	30º	Flood	400	4000	50
35	1003285	JR12V-35W/FL30/FG/SFT	1.78	C-8	2950	30º	Flood	700	4000	50
50	1003286	JR12V-50W/FL30/FG/SFT	1.78	C-8	2950	30º	Flood	1200	4000	50
75	1003287	JR12V-75W/FL30/FG/SFT	1.78	C-8	2950	30º	Flood	1600	3500	50

All dimensions shown in inches unless otherwise noted.

The **Softline™** series is constructed of a consistent reflective coating and a frosted front cover glass. The frosted front glass reduces glare and evenly distributes crisp halogen light without spots or striations.

Applications:

- Wall Washing
- Landscape
- Artwork
- Restaurants



GU5.3

ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)
1.77	3.28	37.16	1.77	3.28	65.03	1.77	3.28	111.48	1.77	3.28	148.64
3.51	6.56	9.29	3.51	6.56	16.26	3.51	6.56	27.87	3.51	6.56	37.16
5.28	9.84	4.09	5.28	9.84	7.25	5.28	9.84	12.36	5.28	9.84	16.54
7.02	13.12	2.32	7.02	13.12	4.08	7.02	13.12	6.97	7.02	13.12	9.29
30°	JR12V-20W/FL30/FG/SFT	20W	30°	JR12V-35W/FL30/FG/SFT	35W	30°	JR12V-50W/FL30/FG/SFT	50W	30°	JR12V-75W/FL30/FG/SFT	75W

MR-16 FROSTLINE™ SERIES

- Only for Use in Approved Halogen Fixtures
- 2 inch Diameter Frosted Front Glass & Reflector Surface
- Diffused Halogen Light
- Universal Burn Position

Watts	Ushio Ordering Code	Ushio Lamp Description	Volts V	Dimension MOL (A)	Color Temp K	Luminous Flux lm	Avg Life h	Case Qty
FROSTLINE™, 2-Pin Base – GU5.3								
20	1003253	JR12V-20W/FR/FG	12	1.78	2900	250	4000	50
35	1003254	JR12V-35W/FR/FG	12	1.78	2900	520	4000	50
50	1003255	JR12V-50W/FR/FG	12	1.78	2950	850	4000	50

All dimensions shown in inches unless otherwise noted.

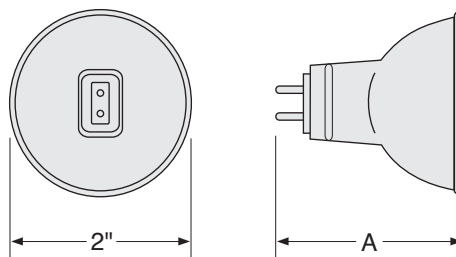
Frostline™ MR-16 lamps feature a Halogen capsule surrounded by a frosted reflector and frosted front glass cover. Because there is no reflective coating on the reflector, the light profile spills in all directions. Normal dichroic MR-16s typically cause color changes or disruptive patterns on colored fixture glass. The Frostline™ series was designed to fit into pendant glass fixtures and eliminate the back-spill of “dichroic color” often occurring when used in these types of fixtures.

Applications:

- Glass Pendant Lighting
- Decorative Lighting



FROSTLINE™



GU5.3

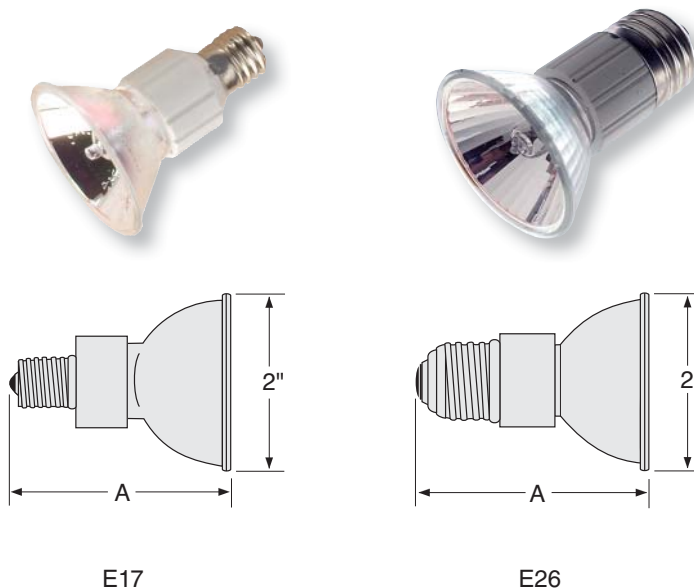
MR-16 JDR

- Only for Use in Approved Halogen Fixtures
- 2 inch Dichroic Coated Reflector
- Line Voltage - 120 Volts
- Operate Base Up
- Intermediate Screw Base - E17
- Medium Screw Base - E26

Watts	Ushio Ordering Code	Ushio Lamp Description	ANSI Code	Dimension	Beam			Color Temp K	Avg Life h	Case Qty
				MOL (A)	Angle	Spread	Max CP cd			
Intermediate Screw Base – E17										
75	1001032	JDR120V-75WL/SP14	FSA	3.0	14°	Spot	5000	3000	2000	10
75	1001030	JDR120V-75WL/NFL24	FSB	3.0	24°	Narrow Flood	1800	3000	2000	10
75	1001033	JDR120V-75WL/FL38	FSD	3.0	38°	Flood	1300	3000	2000	10
100	1001013	JDR120V-100WL/SP14	FSC	3.0	14°	Spot	7100	3000	2000	12
100	1001011	JDR120V-100WL/NFL24	FSE	3.0	24°	Narrow Flood	4200	3000	2000	10
100	1001016	JDR120V-100WL/FL38	FSF	3.0	38°	Flood	2800	3000	2000	10
Krypton Fill Medium Screw Base – E26 (cooler than Halogen)										
20	1001019	JDR120V-20W/FL28/E26/INC		2.8	28°	Flood	—	2800	2000	10
40	1001020	JDR120V-40W/FL28/E26/INC		2.8	28°	Flood	—	2900	2000	10
60	1001021	JDR120V-60W/FL28/E26/INC		2.8	28°	Flood	—	3150	2000	10
Medium Screw Base – E26										
75	1001834	JDR120V-75WL/SP14		3.0	14°	Spot	5000	3000	2000	10
75	1001022	JDR120V-75W/NFL20/FG**		3.0	20°	Narrow Flood	2800	3000	2000	20
75	1001031	JDR120V-75WL/NFL24		3.0	24°	Narrow Flood	2800	3000	2000	10
75	1001836	JDR120V-75WL/FL30		3.0	30°	Flood	2100	3000	2000	10
75	1001029	JDR120V-75W/FL30/FG**		3.0	30°	Flood	2100	3000	2000	20
100	1001014	JDR120V-100WL/NSP10		3.0	10°	Narrow Spot	6300	3000	2000	10
100	1001012	JDR120V-100WL/NFL20		3.0	20°	Narrow Flood	4200	3000	2000	10
100	1001017	JDR120V-100WL/FL30		3.0	30°	Flood	2500	3000	2000	10

** with Front Glass cover

All dimensions shown in inches unless otherwise noted.



MR-16 PRO-STAR™ SERIES

- Only for Use in Approved Halogen Fixtures
- Line Voltage – 120 Volts
- Available in Dichroic & Aluminum Reflectors
- Compact Design
- Integrated UV Protection
- Universal Burn Position
- Integrated Front Glass Cover (/FG)
- Turn In / Turn Out Bases (GU10)

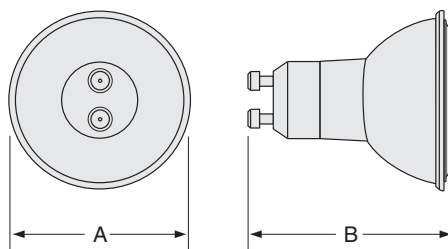


Watts	Ushio	Ushio	Dimensions		Color	Beam		Center	Avg	Case
	Ordering	Lamp	Dia	MOL	Temp	Angle	Spread	Beam	Life	Qty
	Code	Description	(A)	(B)	K			cp	h	
PRO-STAR™ Turn In/Out Base – GU10										
50	1003301	50MR16/GU10/NFL25	2.0	2.16	2750	25°	Narrow Flood	1400	2500	100
50	1003303	50MR16/GU10/WFL50	2.0	2.16	2750	50°	Wide Flood	650	2500	100

All dimensions shown in inches unless otherwise noted.



Aluminized Reflector



GU10

ø(ft)	H(ft)	E(fc)	ø(ft)	H(ft)	E(fc)
1.41	3.28	129.97	2.98	3.28	59.92
2.82	6.56	32.98	5.90	6.56	14.97
3.94	9.84	13.94	90.2	9.84	6.97
5.58	13.12	7.99	11.81	13.12	3.99
25°	PRO-STAR™ 50W		50°	PRO-STAR™ 50W	

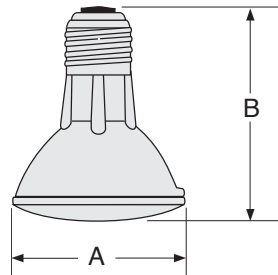
PRO-PAR™ 20 SERIES

- Only for Use in Approved Halogen Fixtures
- PAR 20
- Medium Screw Base - E26
- Improved Optics & Color Consistency
- Dimmable
- Vibration Protection
- Universal Burn Position

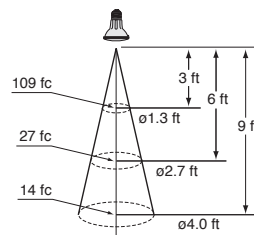


Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions		Lumens lm	Beam		Center Beam cp	Avg Life h	Case Qty
			Dia (A)	MOL (B)		Angle	Spread			
PRO-PAR™ 20 Medium Screw Base – E26										
35	1003064	35PAR20/FL30/120V	2.5	3.3	425	30°	Flood	900	2500	15
50	1001504	50PAR20/SP10/130V	2.5	3.3	600	10°	Spot	5000	2500	15
50	1001503	50PAR20/NFL30/120V	2.5	3.3	600	30°	Narrow Flood	1250	2500	15
50	1001502	50PAR20/NFL30/130V	2.5	3.3	600	30°	Narrow Flood	1250	2500	15
50	1001499	50PAR20/FL40/120V	2.5	3.3	600	40°	Flood	900	2500	15
50	1001500	50PAR20/FL40/130V	2.5	3.3	600	40°	Flood	900	2500	15

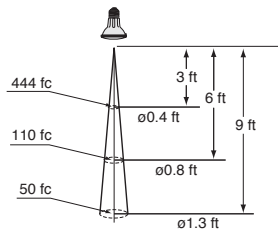
All dimensions shown in inches unless otherwise noted.



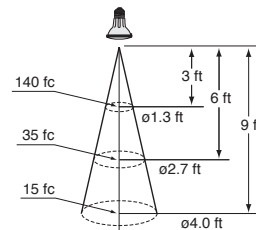
E26



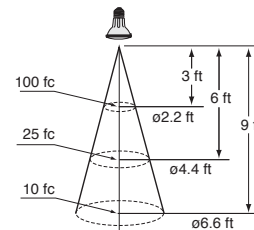
35W PAR20 FLOOD 30°



50W PAR20 SPOT 10°



50W PAR20 NARROW FLOOD 30°



50W PAR20 FLOOD 40°

PRO-PAR™ 30 & 30 LONG NECK SERIES

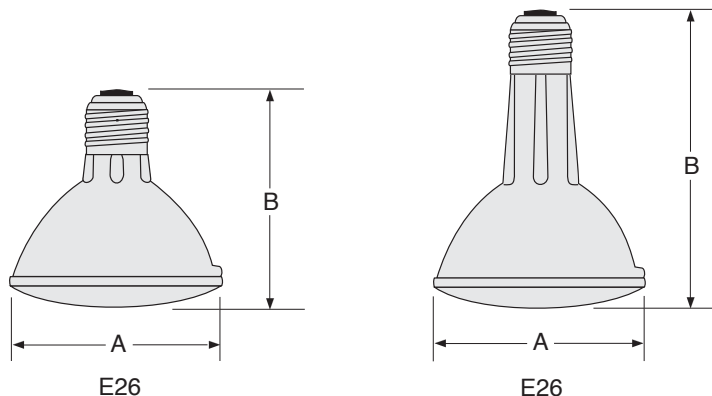
- Only for Use in Approved Halogen Fixtures
- PAR 30, PAR 30 Long Neck
- Medium Screw Base - E26
- Improved Optics & Color Consistency
- Dimmable
- Vibration Protection
- Universal Burn Position

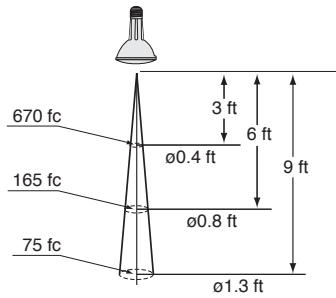


Watts	Ushio	Ushio	Dimensions		Lumens lm	Beam		Center Beam cp	Avg Life h	Case Qty
	Ordering Code	Lamp Description	Dia (A)	MOL (B)		Angle	Spread			
PRO-PAR™ 30 Medium Screw Base – E26										
Ⓔ 50	1001514	50PAR30/SP10/120V	3.75	3.63	600	10º	Spot	6000	2500	15
Ⓔ 50	1001513	50PAR30/SP10/130V Ratings @ 120V=44W	3.75	3.63	600 470	10º	Spot	6000	2500 5000	15
Ⓔ 50	1001510	50PAR30/NFL30/120V	3.75	3.63	600	30º	Narrow Flood	2000	2500	15
Ⓔ 50	1001511	50PAR30/NFL30/130V Ratings @ 120V=44W	3.75	3.63	600 470	30º	Narrow Flood	2000	2500 5000	15
Ⓔ 50	1001507	50PAR30/FL40/120V	3.75	3.63	600	40º	Flood	1300	2500	15
Ⓔ 50	1001508	50PAR30/FL40/130V Ratings @ 120V=44W	3.75	3.63	600 470	40º	Flood	1300	2500 5000	15
Ⓔ 75	1001540	75PAR30/SP10/120V	3.75	3.63	1100	10º	Spot	14000	2500	15
Ⓔ 75	1001539	75PAR30/SP10/130V Ratings @ 120V=66W	3.75	3.63	1100 860	10º	Spot	14000	2500 5000	15
Ⓔ 75	1001536	75PAR30/NFL30/120V	3.75	3.63	1100	30º	Narrow Flood	3200	2500	15
Ⓔ 75	1001537	75PAR30/NFL30/130V Ratings @ 120V=66W	3.75	3.63	1100 860	30º	Narrow Flood	3200	2500 5000	15
Ⓔ 75	1001533	75PAR30/FL40/120V	3.75	3.63	1100	40º	Flood	2000	2500	15
Ⓔ 75	1001534	75PAR30/FL40/130V Ratings @ 120V=66W	3.75	3.63	1100 860	40º	Flood	2000	2500 5000	15
PRO-PAR™ 30 Long Neck, Medium Screw Base – E26										
Ⓔ 50	1001522	50PAR30LN/SP10/120V	3.75	4.50	600	10º	Spot	6000	2500	15
Ⓔ 50	1001523	50PAR30LN/SP10/130V Ratings @ 120V=44W	3.75	4.50	600 470	10º	Spot	6000	2500 5000	15
Ⓔ 50	1001519	50PAR30LN/NFL30/120V	3.75	4.50	600	30º	Narrow Flood	2000	2500	15
Ⓔ 50	1001520	50PAR30LN/NFL30/130V Ratings @ 120V=44W	3.75	4.50	600 470	30º	Narrow Flood	2000	2500 5000	15
Ⓔ 50	1001516	50PAR30LN/FL40/120V	3.75	4.50	600	40º	Flood	1300	2500	15
Ⓔ 50	1001517	50PAR30LN/FL40/130V Ratings @ 120V=44W	3.75	4.50	600 470	40º	Flood	1300	2500 5000	15
Ⓔ 75	1001548	75PAR30LN/SP10/120V	3.75	4.50	1000	10º	Spot	14000	2500	15
Ⓔ 75	1001549	75PAR30LN/SP10/130V Ratings @ 120V=66W	3.75	4.50	1100 860	10º	Spot	14000	2500 5000	15
Ⓔ 75	1001545	75PAR30LN/NFL30/120V	3.75	4.50	1100	30º	Narrow Flood	3200	2500	15
Ⓔ 75	1001546	75PAR30LN/NFL30/130V Ratings @ 120V=66W	3.75	4.50	1100 860	30º	Narrow Flood	3200	2500 5000	15
Ⓔ 75	1001542	75PAR30LN/FL40/120V	3.75	4.50	1100	40º	Flood	2000	2500	15
Ⓔ 75	1001543	75PAR30LN/FL40/130V Ratings @ 120V=66W	3.75	4.50	1100 860	40º	Flood	2000	2500 5000	15

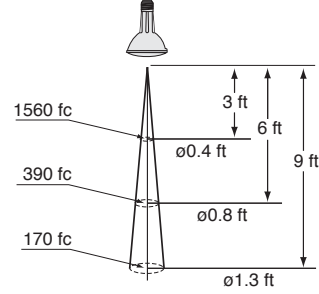
Ⓔ = This Bulb Meets US Federal Minimum Efficiency Standard

All dimensions shown in inches unless otherwise noted.

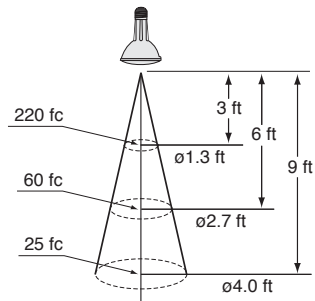




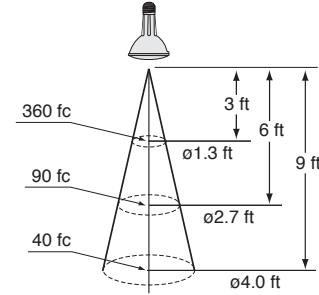
50W PAR30 SPOT 10°



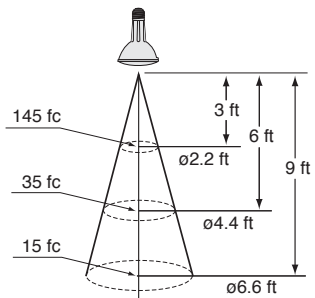
75W PAR30 SPOT 10°



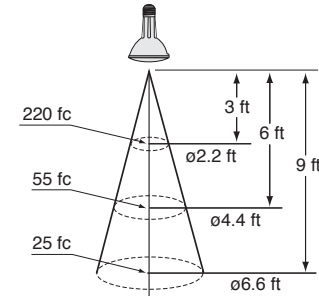
50W PAR30 NARROW FLOOD 30°



75W PAR30 NARROW FLOOD 30°



50W PAR30 FLOOD 40°



75W PAR30 FLOOD 40°

PRO-PAR™ 38 SERIES

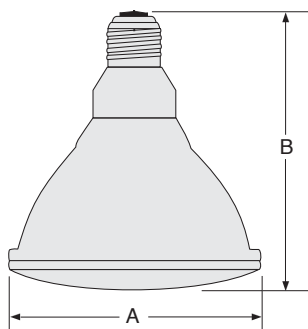
- Only for Use in Approved Halogen Fixtures
- PAR 38
- Medium Screw Base - E26
- Improved Optics & Color Consistency
- Dimmable
- Vibration Protection
- Universal Burn Position



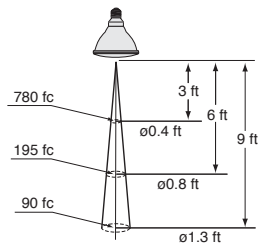
Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions		Lumens lm	Beam		Center Beam cp	Avg Life h	Case Qty
			Dia (A)	MOL (B)		Angle	Spread			
PRO-PAR™ 38 Medium Screw Base – E26										
Ⓔ 45	1001487	45PAR38/SP10/120V	4.75	5.31	520	10°	Spot	7000	2500	15
Ⓔ 45	1001488	45PAR38/SP10/130V	4.75	5.31	520	10°	Spot	7000	2500	15
		Ratings @ 120V=40W			400				5000	
Ⓔ 45	1001483	45PAR38/FL30/120V	4.75	5.31	520	30°	Flood	2000	2500	15
Ⓔ 45	1001484	45PAR38/FL30/130V	4.75	5.31	520	30°	Flood	2000	2500	15
		Ratings @ 120V=40W			400				5000	
Ⓔ 45	1001489	45PAR38/WFL50/120V	4.75	5.31	520	50°	Wide Flood	600	2500	15
Ⓔ 45	1001490	45PAR38/WFL50/130V	4.75	5.31	520	50°	Wide Flood	600	2500	15
		Ratings @ 120V=40W			400				5000	
Ⓔ 60	1002246	60PAR38/SP10/120V	4.75	5.31	720	10°	Spot	15000	2500	15
Ⓔ 60	1003191	60PAR38/SP10/130V	4.75	5.31	720	10°	Spot	15000	2500	15
		Ratings @ 120V=53W			560				5000	
Ⓔ 60	1001530	60PAR38/FL30/120V	4.75	5.31	720	30°	Flood	3200	2500	15
Ⓔ 60	1003192	60PAR38/FL30/130V	4.75	5.31	720	30°	Flood	3200	2500	15
		Ratings @ 120V=53W			560				5000	
Ⓔ 75	1003193	75PAR38/SP10/120V	4.75	5.31	1100	10°	Spot	17500	2500	15
Ⓔ 75	1003194	75PAR38/SP10/130V	4.75	5.31	1100	10°	Spot	17500	2500	15
		Ratings @ 120V=66W			860				5000	
Ⓔ 75	1001725	75PAR38/FL30/120V	4.75	5.31	1100	30°	Flood	3500	2500	15
Ⓔ 75	1003195	75PAR38/FL30/130V	4.75	5.31	1100	30°	Flood	3500	2500	15
		Ratings @ 120V=66W			860				5000	
Ⓔ 90	1001556	90PAR38/SP10/120V	4.75	5.31	1300	10°	Spot	19500	2500	15
Ⓔ 90	1001557	90PAR38/SP10/130V	4.75	5.31	1300	10°	Spot	19500	2500	15
		Ratings @ 120V=79W			1015				5000	
Ⓔ 90	1001553	90PAR38/FL30/120V	4.75	5.31	1300	30°	Flood	5000	2500	15
Ⓔ 90	1001554	90PAR38/FL30/130V	4.75	5.31	1300	30°	Flood	5000	2500	15
		Ratings @ 120V=79W			1015				5000	
Ⓔ 90	1001558	90PAR38/WFL50/120V	4.75	5.31	1300	50°	Wide Flood	1500	2500	15
Ⓔ 90	1001559	90PAR38/WFL50/130V	4.75	5.31	1300	50°	Wide Flood	1500	2500	15
		Ratings @ 120V=79W			1015				5000	
Ⓔ 120	1003068	120PAR38/FL30/120V	4.75	5.31	1900	30°	Flood	8000	2500	15

Ⓔ = This Bulb Meets US Federal Minimum Efficiency Standard

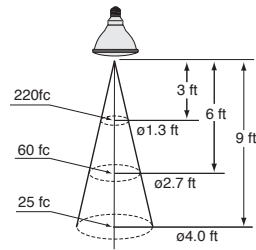
All dimensions shown in inches
unless otherwise noted.



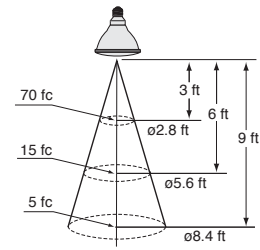
E26



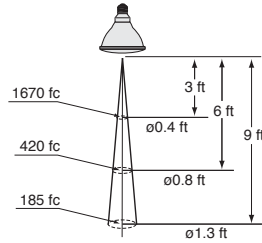
45W PAR38 SPOT 10°



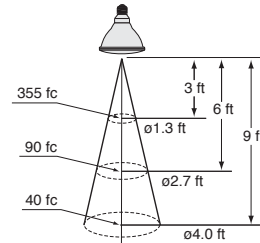
45W PAR38 FLOOD 30°



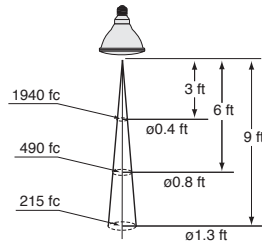
45W PAR38 WIDE FLOOD 50°



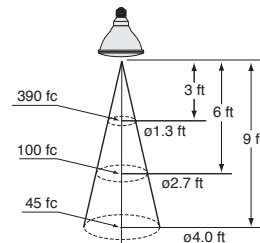
60W PAR38 SPOT 10°



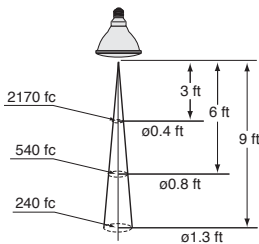
60W PAR38 FLOOD 30°



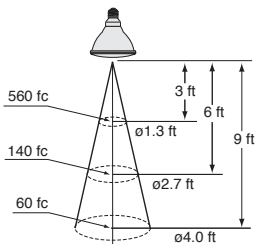
75W PAR38 SPOT 10°



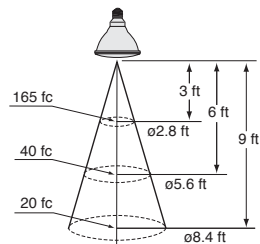
75W PAR38 FLOOD 30°



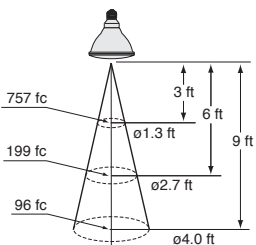
90W PAR38 SPOT 10°



90W PAR38 FLOOD 30°



90W PAR38 WIDE FLOOD 50°



120W PAR38 FLOOD 30°

PAR 36

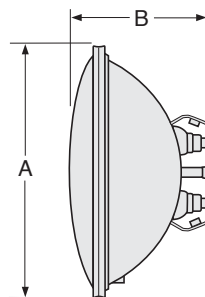
- Only for Use in Approved Halogen Fixtures
- Screw Terminal Base
- Flame Sealed Lens
- Low Voltage - 12 Volts
- Universal Burn Position



Watts	Ushio	Ushio	Dimensions		Beam		Luminous Intensity cd	Avg Life h	Case Qty
	Ordering Code	Lamp Description	Dia (A)	MOL (B)	Angle	Spread			
* PAR 36 Screw Terminal Base									
20	1003539	20PAR36/NSP8/12V	4.37	2.87	8°	Narrow Spot	3500	4000	12
20	1003532	20PAR36/NFL20/12V	4.37	2.87	20°	Narrow Flood	1300	4000	12
20	1003531	20PAR36/FL30/12V	4.37	2.87	30°	Flood	750	4000	12
35	1003535	35PAR36/NSP8/12V	4.37	2.87	8°	Narrow Spot	7500	4000	12
35	1003534	35PAR36/NFL20/12V	4.37	2.87	20°	Narrow Flood	2500	4000	12
35	1003533	35PAR36/FL30/12V	4.37	2.87	30°	Flood	1400	4000	12
50	1003538	50PAR36/NSP8/12V	4.37	2.87	8°	Narrow Spot	13500	4000	12
50	1003537	50PAR36/NFL20/12V	4.37	2.87	20°	Narrow Flood	5000	4000	12
50	1003536	50PAR36/FL30/12V	4.37	2.87	30°	Flood	2000	4000	12

* These lamps are low voltage lamps and require a transformer to operate.

All dimensions shown in inches unless otherwise noted.



Screw Terminal

PAR 56 & PAR 64

- Only for Use in Approved Halogen Fixtures
- PAR 56 - 7" Diameter
- PAR 64 - 8" Diameter



Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions		Approx	Approx	Approx	Beam Spread	Color Temp K	Ave Life h	Case Qty
			Dia (A)	MOL (B)	Field Angle Degrees ¹	Field Beam Degrees ²	Field Lumens lm ³				
PAR 56 Mogul End Prong Base – GX16d											
300	1001456	300PAR56/NSP	7.03	5.0	20x14	10x8	1800	Narrow Spot	2750	2000	12
300	1001453	300PAR56/MFL	7.03	5.0	34x19	23x11	2100	Medium Flood	2750	2000	8
300	1001457	300PAR56/WFL	7.03	5.0	57x27	37x18	2200	Wide Flood	2750	2000	12
500	1001282	Q500PAR56/NSP*	7.03	5.0	32x15	13x8	4000	Narrow Spot	2950	4000	12
500	1001281	Q500PAR56/MFL	7.03	5.0	42x20	26x10	4800	Medium Flood	2950	4000	12
500	1001284	Q500PAR56/WFL	7.03	5.0	66x34	44x20	6400	Wide Flood	2950	4000	12
PAR 64 Extended Mogul End Prong Base – GX16d											
500	1001495	500PAR64/NSP	8.07	6.0	—	—	6500	Narrow Spot	2850	2000	12
500	1001493	500PAR64/MFL	8.07	6.0	—	—	6500	Medium Flood	3000	2000	12
500	1001497	500PAR64/WFL	8.07	6.0	—	—	6500	Wide Flood	2850	2000	12

* Special Order Item

All dimensions shown in inches unless otherwise noted.

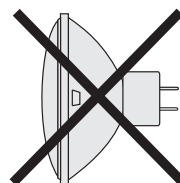
¹ Beam Spread at 10% peak candle power

² Beam Spread at 50% peak candle power

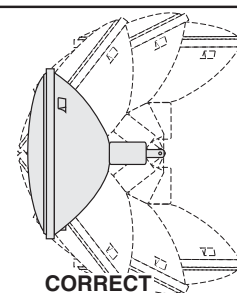
³ Measured within field angle

The ceramic base should be oriented in a horizontal position as shown in illustration. This keeps the filament and Halogen capsule in proper operating condition.

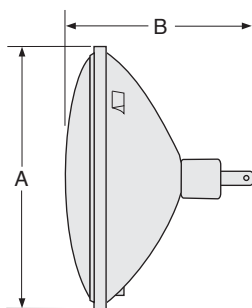
BURN POSITION



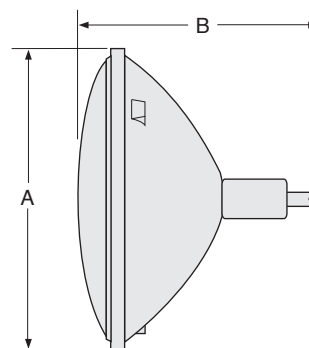
WRONG!



CORRECT



Mogul End Prong
GX16d



Extended Mogul End Prong
GX16d

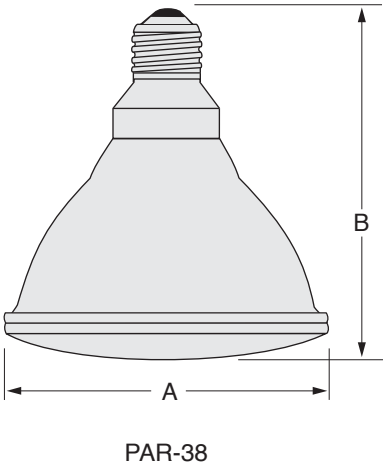
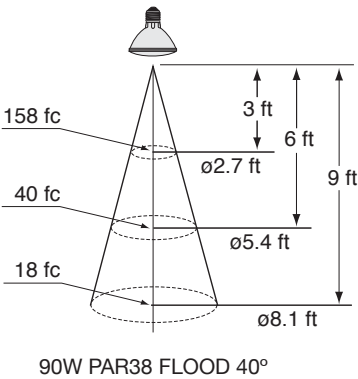
SOFTLINE™ PAR SERIES

- Only for Use in Approved Halogen Fixtures
 - Reduces Glare
 - Creates Soft Beam of White Halogen Light
 - Inside Frosted Front Lens
- Improved Optics & Color Consistency
 - Dimmable
 - Integrated UV Protection



Watts	Ushio	Ushio	Dimensions		Beam	Center	Lumens	Ratings @ 120V			Avg	Case
	Ordering	Lamp	Dia	MOL	Angle	Beam		Watts	Lumens	Avg Life	Life	Qty
	Code	Description	(A)	(B)	cp	lm		W	lm	h	h	
SOFTLINE™ PAR Medium Screw Base – E26												
90	1003506	90PAR38/FL/130V/SFT	4.75	5.31	40°	1700	1300	79	1015	5000	2500	15

All dimensions shown in inches unless otherwise noted.



C³™ SERIES – COLD CATHODE

- Energy Efficient
- Dimmable
- Long Life 25,000 Hours Average Rated Life
- Minimized Maintenance

- Medium Screw Base - E26
- Universal Burn Position

Please See Safety & Handling Instructions on Page 90.



Watts	Ushio	Ushio	Dimensions			CRI	Lumens	Color	Avg	Case	Fig
	Ordering	Lamp	Dia	MOL	MOL			Temp	Life	Qty	No
	Code	Description	(in)	(mm)	(in)		lm	K	h		
C ³ Cold Cathode, Medium Screw Base – E26											
3	3000475	CF-3CC/2700/E26	1.7	91.4	3.6	82	120	2700	25000	12	1
5	3000476	CF-5CC/2700/E26	2.0	101.6	4.0	82	200	2700	25000	12	2
8	3000528	CF-8CC/2700/E26	2.3	114.3	4.5	82	300	2700	25000	12	3
8	3000529	CF-8CC/FR/2700/E26	2.3	114.3	4.5	82	290	2700	25000	12	3
13	3000510	CCFL13CLT/827/E26	2.7	114.3	4.5	82	780	2700	25000	50	4
18	3000513	CCFL18CLT/827/E26	2.8	124.5	4.9	82	1080	2700	25000	50	5
18	3000539	CF18CC/2700/GX53	4.7	61.0	2.4	82	820	2700	25000	40	6
18	3000538	CF18CCFPAR/2700/E26	4.7	127.0	5.0	82	820	2700	25000	24	7

DIMMING: USHIO's dimmable C³™ Cold Cathode Fluorescent lamps should only be used on modern analog dimmers. They will not work on digital dimming systems, which although uncommon, may still be found in certain new installations.

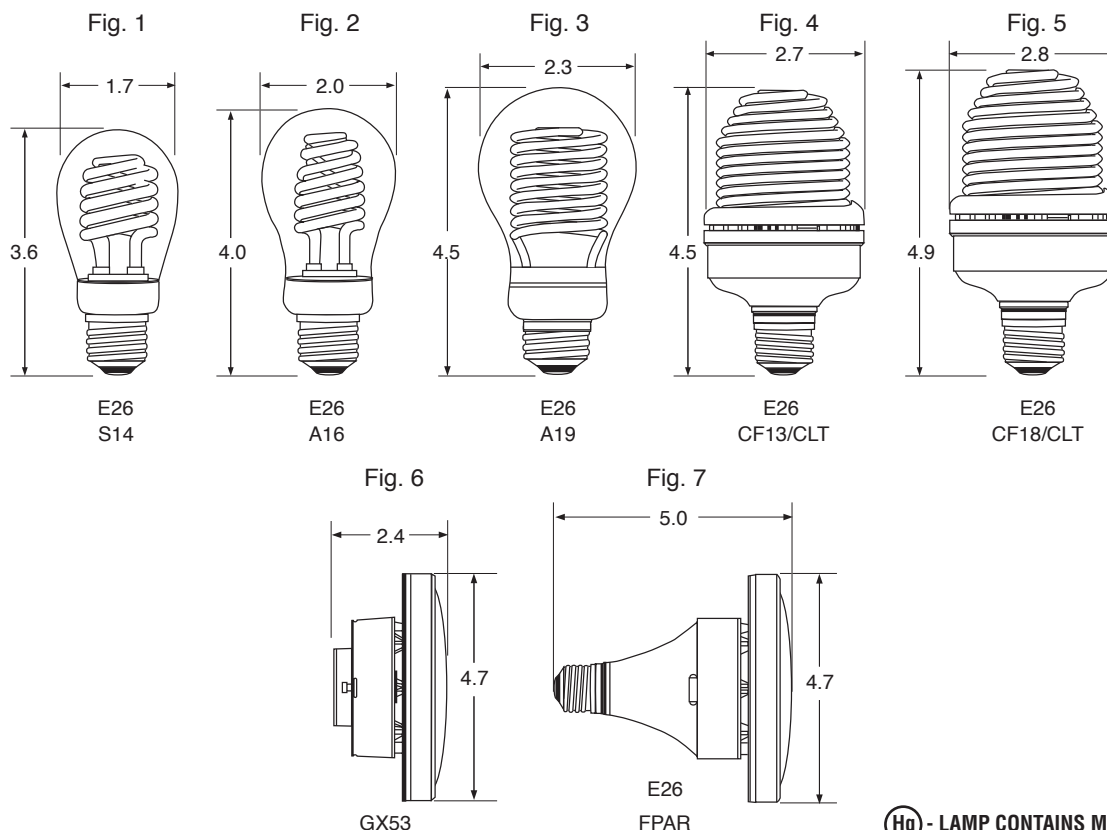
C³™ Cold Cathode lamps have a dimming range of 100%-30%. Depending on the brand and type of dimmer used, you may experience flickering or shutdown with C³™ Cold Cathode lamps when dimmed below 30% of the lamp's power.

All dimensions shown in inches unless otherwise noted.

The model GX53 lamp holder is rated up to 100W, 250V with an overall length of 3.10 inches. The case quantity is 10. Use order code **1003642**.



GX53



(Hg) - LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See: www.lamprecycle.org

COILIGHT™ & COILIGHT™ REFLECTOR SERIES

- Energy Efficient
- Low Operating Temperature
- Long Life 10,000 Hours Average Rated Life
- Integral Electronic Ballast

- Medium Screw Base - E26 & 2-Pin Base - GU24
- Universal Burn Position

Please See Safety & Handling Instructions on Page 90.



Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions			Lumens lm	Color Temp K	CRI	Avg Rated Life* h	Commercial Life** h	Case Qty
			Dia (in)	MOL (mm)	MOL (in)						
COILIGHT™ – E26 Base											
13	3000443	CF13CLT/2700/E26	1.8	104.1	4.1	825	2700	80	10000	12500	10
13	3000552	CF13CLT/4100/E26	1.8	104.1	4.1	800	4100	80	10000	12500	10
18	3000553	CF18CLT/2700/E26	2.1	114.3	4.5	1100	2700	80	10000	12500	10
18	3000554	CF18CLT/4100/E26	2.1	114.3	4.5	1100	4100	80	10000	12500	10
23	3000157	CF23CLT/2700/E26	2.1	124.5	4.9	1600	2700	80	10000	12500	10
23	3000555	CF23CLT/4100/E26	2.1	124.5	4.9	1600	4100	80	10000	12500	10
26	3000444	CF26CLT/2700/E26	2.1	129.5	5.1	1750	2700	80	10000	12500	10
26	3000556	CF26CLT/4100/E26	2.1	129.5	5.1	1750	4100	80	10000	12500	10
COILIGHT™ – GU24 Base											
13	3000544	CF13CLT/2700/GU24	1.8	86.4	3.4	800	2700	80	10000	12500	10
13	3000545	CF13CLT/4100/GU24	1.8	86.4	3.4	800	4100	80	10000	12500	10
18	3000546	CF18CLT/2700/GU24	2.1	109.2	4.3	1200	2700	80	10000	12500	10
18	3000547	CF18CLT/4100/GU24	2.1	109.2	4.3	1200	4100	80	10000	12500	10
23	3000548	CF23CLT/2700/GU24	2.1	127.0	5.0	1435	2700	80	10000	12500	10
23	3000549	CF23CLT/4100/GU24	2.1	127.0	5.0	1600	4100	80	10000	12500	10
26	3000550	CF26CLT/2700/GU24	2.1	132.1	5.2	1610	2700	80	10000	12500	10
26	3000551	CF26CLT/4100/GU24	2.1	132.1	5.2	1725	4100	80	10000	12500	10
PAR 38 – E26 Base											
23	3000559	CF23PAR38/2700/E26	4.8	127.0	5.0	1100	2700	80	10000	12500	12
23	3000560	CF23PAR38/4100/E26	4.8	127.0	5.0	1100	4100	80	10000	12500	12
R 30 – E26 Base											
15	3000557	CF15R30/2700/E26	3.7	137.2	5.4	700	2700	80	10000	12500	12
15	3000558	CF15R30/4100/E26	3.7	137.2	5.4	700	4100	80	10000	12500	12

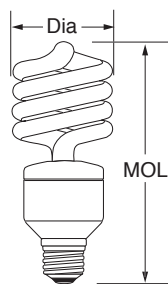
Reliable operating temperatures 0° F to 120° F

Coilights™ are not designed for dimming circuits or photocells
Coilights™ are not to be used in fully enclosed fixtures without adequate ventilation

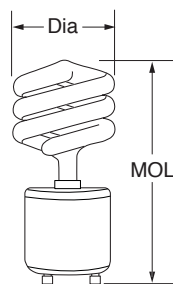
All dimensions shown in inches unless otherwise noted.

* Based on ANSI / IESNA standards of 3 hours per start

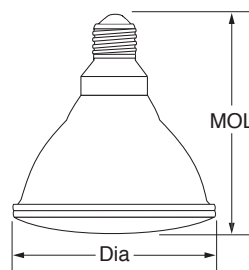
** Based on estimated commercial operating standards of 12 hours per start



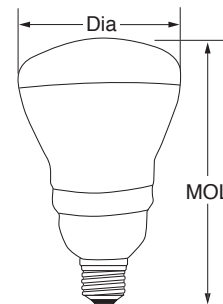
Coilight / E26



Coilight / GU24



PAR 38 / E26



R 30 / E26

Hg - LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See: www.lamprecycle.org

AMALGAM TE

- Energy Efficient
- Long Life 10,000 Hours Average Rated Life
- Low Mercury
- Universal Burn Position

Please See Safety & Handling Instructions on Page 90.

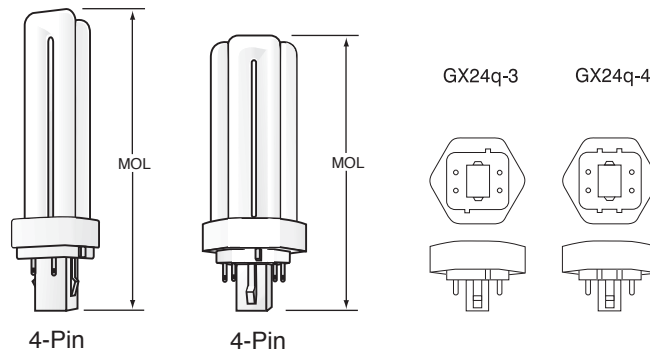


Watts	Ushio	Ushio	Volts V	Lamp	Dimensions		Luminous Flux		Color Temp K	Avg Rated Life* h	Commercial Life** h	Case Qty
	Ordering Code	Lamp Description		Current A	MOL MOL	Nom. Min.	Im Im					
AMALGAM TE Triple Tube 4-Pin Base – GX24q-3 for Electronic Ballasts												
26	3000532	CF26TE/835A	105	0.325	131	5.2	1800	1620	3500	10000	12500	50
26	3000533	CF26TE/841A	105	0.325	131	5.2	1800	1620	4100	10000	12500	50
32	3000534	CF32TE/835A	100	0.320	147	5.8	2400	2160	3500	10000	12500	50
32	3000535	CF32TE/841A	100	0.320	147	5.8	2400	2160	4100	10000	12500	50
AMALGAM TE Triple Tube 4-Pin Base – GX24q-4 for Electronic Ballasts												
42	3000536	CF42TE/835A	135	0.320	168	6.7	3200	2800	3500	10000	12500	50
42	3000537	CF42TE/841A	135	0.320	168	6.7	3200	2800	4100	10000	12500	50

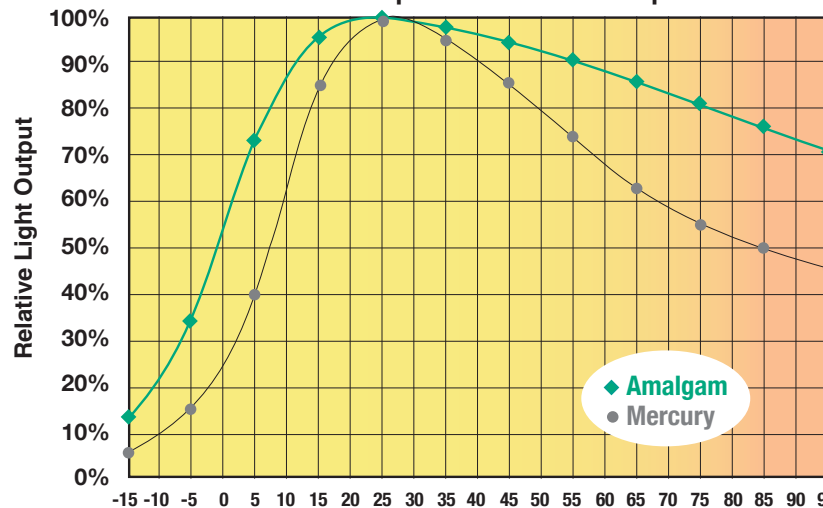
All dimensions shown in inches unless otherwise noted.

* Based on ANSI / IESNA standards of 3 hours per start

** Based on estimated commercial operating standards of 12 hours per start



Stabilized Output vs. Ambient Temperature



(Hg) - LAMP CONTAINS MERCURY
 Manage in Accord with Disposal Laws
 See: www.lamprecycle.org

ULTRA-S™ & ULTRA-SE™ SERIES

- Energy Efficient
- Long Life 10,000 Hours Average Rated Life
- Universal Burn Position

Please See Safety & Handling Instructions on Page 90.



Watts	Ushio Ordering Code	Ushio Lamp Description	Volts V	Lamp Current A	Dimensions				Color Temp K	Avg Rated Life* h	Commercial Life** h	Case Qty
					MOL (mm)	MOL (in)	Nom. lm	Min. lm				
ULTRA-S™ Single Tube 2-Pin Base – G23												
5	3000062	CF5S/827	35	0.180	108	4.3	250	230	2700	10000	12500	50
5	3000147	CF5S/841	35	0.180	108	4.3	250	230	4100	10000	12500	50
7	3000063	CF7S/827	45	0.180	138	5.4	400	360	2700	10000	12500	50
7	3000064	CF7S/841	45	0.180	138	5.4	400	360	4100	10000	12500	50
9	3000066	CF9S/827	59	0.180	168	6.6	600	540	2700	10000	12500	50
9	3000060	CF9S/835	59	0.180	168	6.6	600	540	3500	10000	12500	50
9	3000067	CF9S/841	59	0.180	168	6.6	600	540	4100	10000	12500	50
ULTRA-S™ Single Tube 2-Pin Base – GX23												
13	3000054	CF13S/827	59	0.285	180	7.1	800	720	2700	10000	12500	50
13	3000057	CF13S/835	59	0.285	180	7.1	800	720	3500	10000	12500	50
13	3000055	CF13S/841	59	0.285	180	7.1	800	720	4100	10000	12500	50
13	3000427	CF13S/850	59	0.285	180	7.1	800	710	5000	10000	12500	50
13	3000167	CF13S/865	59	0.285	180	7.1	760	690	6500	10000	12500	50
ULTRA-SE™ Single Tube 4-Pin Base – 2G7 for Electronic Ballasts – Dimmable												
5	3000168	CF5SE/827*	35	0.180	85	3.4	250	230	2700	10000	12500	50
7	3000169	CF7SE/827*	47	0.175	115	4.5	400	360	2700	10000	12500	50
7	3000175	CF7SE/841	47	0.175	115	4.5	400	360	4100	10000	12500	50
9	3000170	CF9SE/827	60	0.170	145	5.7	600	540	2700	10000	12500	50
9	3000178	CF9SE/841	60	0.170	145	5.7	600	540	4100	10000	12500	50
ULTRA-SE™ Single Tube 4-Pin Base – 2GX7 for Electronic Ballasts – Dimmable												
13	3000171	CF13SE/827	59	0.285	160	6.3	800	720	2700	10000	12500	50
13	3000251	CF13SE/830	59	0.285	160	6.3	800	720	3000	10000	12500	50
13	3000182	CF13SE/835	59	0.285	160	6.3	800	720	3500	10000	12500	50
13	3000181	CF13SE/841	59	0.285	160	6.3	800	720	4100	10000	12500	50

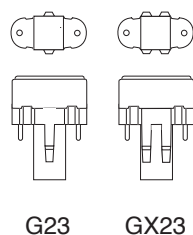
* Special Order Item

All dimensions shown in inches unless otherwise noted.

* Based on ANSI / IESNA standards of 3 hours per start

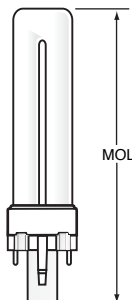
** Based on estimated commercial operating standards of 12 hours per start

When using dimmers, dimming systems, or occupancy sensors, the lamp life will also be affected. The dimming system manufacturer can advise the affect of their system on lamp life.

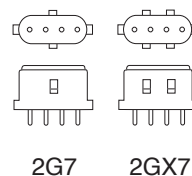


G23

GX23

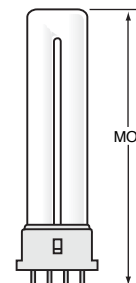


2-Pin



2G7

2GX7



4-Pin

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ULTRA-D™ SERIES

- Energy Efficient
- Long Life 10,000 Hours Average Rated Life
- Universal Burn Position

Please See Safety & Handling Instructions on Page 90.



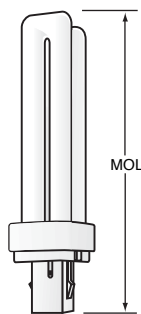
Watts	Ushio Ordering Code	Ushio Lamp Description	Volts V	Lamp Current A	MOL (mm)	MOL (in)	Nom. lm	Min. lm	Color Temp K	Avg Rated Life* h	Commercial Life** h	Case Qty
ULTRA-D™ Double Tube 2-Pin Base – G23-2												
9	3000065	CF9D/827	59	0.180	108	4.3	525	475	2700	10000	12500	50
9	3000139	CF9D/835	59	0.180	108	4.3	525	475	3500	10000	12500	50
9	3000184	CF9D/841	59	0.180	108	4.3	525	475	4100	10000	12500	50
ULTRA-D™ Double Tube 2-Pin Base – GX23-2												
13	3000052	CF13D/827	59	0.285	118	4.7	780	700	2700	10000	12500	50
13	3000053	CF13D/835	59	0.285	118	4.7	780	700	3500	10000	12500	50
13	3000140	CF13D/841	59	0.285	118	4.7	780	700	4100	10000	12500	50
13	3000426	CF13D/850	59	0.285	118	4.7	780	700	5000	10000	12500	50
ULTRA-D™ Double Tube 2-Pin Base – G24d-2												
18	3000135	CF18D/827	100	0.220	153	6.0	1200	1080	2700	10000	12500	50
18	3000145	CF18D/835	100	0.220	153	6.0	1200	1080	3500	10000	12500	50
18	3000141	CF18D/841	100	0.220	153	6.0	1200	1080	4100	10000	12500	50
ULTRA-D™ Double Tube 2-Pin Base – G24d-3												
26	3000058	CF26D/827	105	0.325	172	6.8	1800	1620	2700	10000	12500	50
26	3000146	CF26D/835	105	0.325	172	6.8	1800	1620	3500	10000	12500	50
26	3000142	CF26D/841	105	0.325	172	6.8	1800	1620	4100	10000	12500	50
26	3000196	CF26D/865	105	0.325	172	6.8	1710	1540	6500	10000	12500	50

All dimensions shown in inches unless otherwise noted.

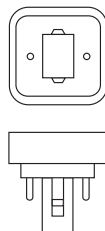
* Based on ANSI / IESNA standards of 3 hours per start

** Based on estimated commercial operating standards of 12 hours per start

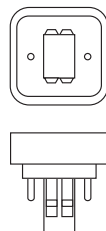
When using dimmers, dimming systems, or occupancy sensors, the lamp life will also be affected. The dimming system manufacturer can advise the affect of their system on lamp life.



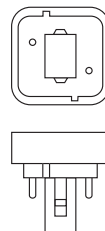
2-Pin



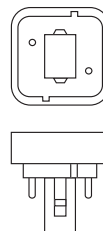
G23-2



GX23-2



G24d-2



G24d-3

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ULTRA-DE™ SERIES

- Energy Efficient
- Long Life 10,000 Hours Average Rated Life
- Universal Burn Position

Please See Safety & Handling Instructions on Page 90.



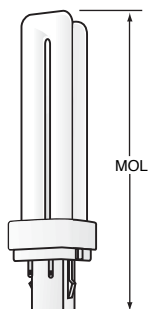
Watts	Ushio Ordering Code	Ushio Lamp Description	Volts V	Lamp Current A	MOL (mm)	MOL (in)	Nom. lm	Min. lm	Color Temp K	Avg Rated Life* h	Commercial Life** h	Case Qty
ULTRA-DE™ Double Tube 4-Pin Base – G24q-1 – for Electronic Ballasts – Dimmable												
13	3000159	CF13DE/827	91	0.175	131	5.2	900	810	2700	10000	12500	50
13	3000246	CF13DE/835	91	0.175	131	5.2	900	810	3500	10000	12500	50
13	3000160	CF13DE/841	91	0.175	131	5.2	900	810	4100	10000	12500	50
13	3000235	CF13DE/865	91	0.175	131	5.2	860	770	6500	10000	12500	50
ULTRA-DE™ Double Tube 4-Pin Base – G24q-2 – for Electronic Ballasts – Dimmable												
18	3000056	CF18DE/827	100	0.220	146	5.8	1200	1080	2700	10000	12500	50
18	3000143	CF18DE/835	100	0.220	146	5.8	1200	1080	3500	10000	12500	50
18	3000136	CF18DE/841	100	0.220	146	5.8	1200	1080	4100	10000	12500	50
ULTRA-DE™ Double Tube 4-Pin Base – G24q-3 – for Electronic Ballasts – Dimmable												
26	3000059	CF26DE/827	105	0.325	165	6.5	1800	1620	2700	10000	12500	50
26	3000144	CF26DE/835	105	0.325	165	6.5	1800	1620	3500	10000	12500	50
26	3000137	CF26DE/841	105	0.325	165	6.5	1800	1620	4100	10000	12500	50
26	3000238	CF26DE/865	105	0.325	165	6.5	1710	1540	6500	10000	12500	50

All dimensions shown in inches unless otherwise noted.

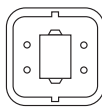
* Based on ANSI / IESNA standards of 3 hours per start

** Based on estimated commercial operating standards of 12 hours per start

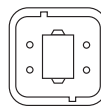
When using dimmers, dimming systems, or occupancy sensors, the lamp life will also be affected. The dimming system manufacturer can advise the affect of their system on lamp life.



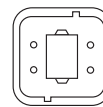
4-Pin



G24q-1



G24q-2



G24q-3

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ULTRA-T™ & ULTRA-TE™ SERIES

- Energy Efficient
- Long Life 10,000 Hours Average Rated Life
- Universal Burn Position

Please See Safety & Handling Instructions on Page 90.



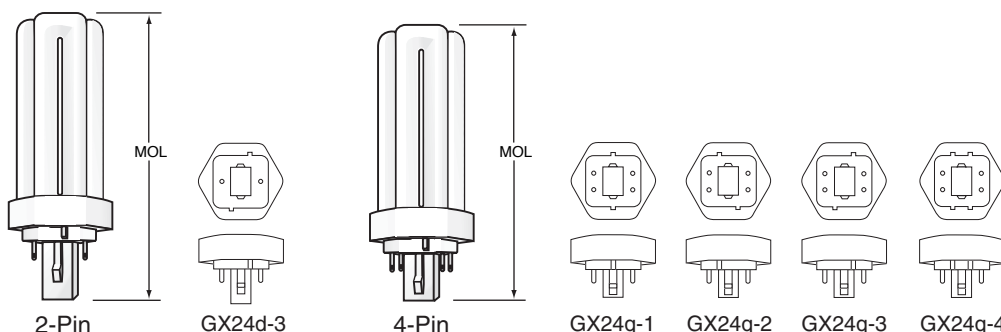
Watts	Ushio	Ushio	Volts	Lamp	Dimensions		Luminous Flux		Color Temp	Avg	Commercial	Case Qty
	Ordering Code	Lamp Description		Current A	MOL (mm)	MOL (in)	Nom. lm	Min. lm		K	Rated Life* h	
ULTRA-T™ Triple Tube 2-Pin Base – GX24d-3												
26	3000203	CF26T/827	105	0.325	138	5.4	1800	1620	2700	10000	12500	50
26	3000205	CF26T/835	105	0.325	138	5.4	1800	1620	3500	10000	12500	50
26	3000204	CF26T/841	105	0.325	138	5.4	1800	1620	4100	10000	12500	50
ULTRA-TE™ Triple Tube 4-Pin Base – GX24q-1 – for Electronic Ballasts – Dimmable												
13	3000207	CF13TE/827	91	0.175	108	4.4	900	810	2700	10000	12500	50
13	3000209	CF13TE/835	91	0.175	108	4.4	900	810	3500	10000	12500	50
13	3000208	CF13TE/841	91	0.175	108	4.4	900	810	4100	10000	12500	50
ULTRA-TE™ Triple Tube 4-Pin Base – GX24q-2 – for Electronic Ballasts – Dimmable												
18	3000211	CF18TE/827	100	0.220	116	4.6	1200	1080	2700	10000	12500	50
18	3000255	CF18TE/830	100	0.220	116	4.6	1200	1080	3000	10000	12500	50
18	3000213	CF18TE/835	100	0.220	116	4.6	1200	1080	3500	10000	12500	50
18	3000212	CF18TE/841	100	0.220	116	4.6	1200	1080	4100	10000	12500	50
ULTRA-TE™ Triple Tube 4-Pin Base – GX24q-3 – for Electronic Ballasts – Dimmable												
26	3000215	CF26TE/827	105	0.325	131	5.2	1800	1620	2700	10000	12500	50
26	3000254	CF26TE/830	105	0.325	131	5.2	1800	1620	3000	10000	12500	50
26	3000217	CF26TE/835	105	0.325	131	5.2	1800	1620	3500	10000	12500	50
26	3000216	CF26TE/841	105	0.325	131	5.2	1800	1620	4100	10000	12500	50
26	3000218	CF26TE/865	105	0.325	131	5.2	1710	1540	6500	10000	12500	50
32	3000219	CF32TE/827	100	0.320	147	5.8	2400	2160	2700	10000	12500	50
32	3000252	CF32TE/830	100	0.320	147	5.8	2400	2160	3000	10000	12500	50
32	3000221	CF32TE/835	100	0.320	147	5.8	2400	2160	3500	10000	12500	50
32	3000220	CF32TE/841	100	0.320	147	5.8	2400	2160	4100	10000	12500	50
32	3000222	CF32TE/865	100	0.320	147	5.8	2280	2052	6500	10000	12500	50
ULTRA-TE™ Triple Tube 4-Pin Base – GX24q-4 – for Electronic Ballasts – Dimmable												
42	3000223	CF42TE/827	135	0.320	168	6.7	3200	2880	2700	10000	12500	50
42	3000253	CF42TE/830	135	0.320	168	6.7	3200	2800	3000	10000	12500	50
42	3000225	CF42TE/835	135	0.320	168	6.7	3200	2880	3500	10000	12500	50
42	3000224	CF42TE/841	135	0.320	168	6.7	3200	2880	4100	10000	12500	50
42	3000226	CF42TE/865	135	0.320	168	6.7	3040	2740	6500	10000	12500	50

All dimensions shown in inches unless otherwise noted.

* Based on ANSI / IESNA standards of 3 hours per start

** Based on estimated commercial operating standards of 12 hours per start

When using dimmers, dimming systems, or occupancy sensors, the lamp life will also be affected. The dimming system manufacturer can advise the affect of their system on lamp life.



ULTRA-L™ SERIES LONG COMPACT FLUORESCENT

- Energy Efficient
- Unique Size
- Long Life
- Universal Burn Position
- 82 CRI - Color Rendering Index

Please See Safety & Handling Instructions on Page 90.



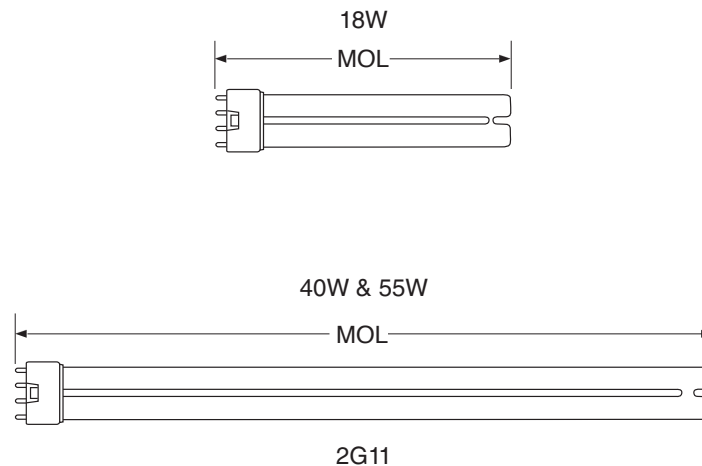
Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions		Luminous Flux		Color Temp K	Avg Rated Life* h	Commercial Life** h	Case Qty
			MOL (mm)	MOL (in)	Nom lm	Min lm				
ULTRA-L™ 4-Pin Base – 2G11 (Sold in Case Quantity only)										
18	3000398	CF-L18SE/830	229	9.0	1250	1075	3000	12000	15500	10
40	3000411	CF-L40SE/830	572	22.5	3150	2709	3000	12000	15500	10
40	3000412	CF-L40SE/835	572	22.5	3150	2709	3500	12000	15500	10
40	3000413	CF-L40SE/841	572	22.5	3150	2709	4100	12000	15500	10
55	3000414	CF-L55SE/830	531	20.9	4800	4128	3000	12000	15500	10
55	3000415	CF-L55SE/835	531	20.9	4800	4128	3500	12000	15500	10
55	3000416	CF-L55SE/841	531	20.9	4800	4128	4100	12000	15500	10

All dimensions shown in inches unless otherwise noted.

* Based on ANSI / IESNA standards of 3 hours per start

** Based on estimated commercial operating standards of 12 hours per start

These lamps are designed to operate on instant start or rapid start ballasts. When using dimmers, dimming systems, or occupancy sensors, the lamp life will also be affected. The dimming system manufacturer can advise the affect of their system on lamp life.



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ULTRA 5™ SERIES

- Energy Efficient
- Linear Fluorescent Lamps
- Compact Lamp Diameter
- Bi-Pin Base - G5
- Universal Burn Position

Please See Safety & Handling Instructions on Page 90.



Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions			Color Temp K	Lumens lm	Avg Rated Life* h	Commercial Life** h	Case Qty
			Dia (A)	MOL (mm)	MOL (in)					
ULTRA 5™ T5 Preheat ^{1,3} (Sold in Case Quantity only)										
4	3000109	F4T5WW*	0.61	150	6	3000	110	6000	7500	100
4	3000107	F4T5CW	0.61	150	6	4200	140	6000	7500	100
4	3000108	F4T5D	0.61	150	6	6500	95	6000	7500	100
6	3000114	F6T5WW	0.61	226	9	3000	240	7500	9300	100
6	3000112	F6T5CW	0.61	226	9	4200	280	7500	9300	100
6	3000113	F6T5D	0.61	226	9	6500	210	7500	9300	100
8	3000119	F8T5WW	0.61	302	12	3000	400	7500	9300	100
8	3000117	F8T5CW	0.61	302	12	4200	400	7500	9300	100
8	3000118	F8T5D	0.61	302	12	6500	350	7500	9300	100
13	3000070	F13T5WW	0.61	531	21	3000	820	7500	9300	25
13	3000068	F13T5CW	0.61	531	21	4200	820	7500	9300	25
13	3000069	F13T5D	0.61	531	21	6500	700	7500	9300	25
ULTRA 5™ T5 High Efficiency (standard) ^{2,3} — 85 CRI (Sold in Case Quantity only)										
14	3000377	F14T5/830	0.61	563	22	3000	1350	24000	30000	25
14	3000459	F14T5/835	0.61	563	22	3500	1350	24000	30000	25
14	3000378	F14T5/841	0.61	563	22	4100	1350	24000	30000	25
21	3000380	F21T5/830	0.61	863	34	3000	2100	24000	30000	25
21	3000460	F21T5/835	0.61	863	34	3500	2100	24000	30000	25
21	3000381	F21T5/841	0.61	863	34	4100	2100	24000	30000	25
28	3000383	F28T5/830	0.61	1163	46	3000	2900	24000	30000	25
28	3000462	F28T5/835	0.61	1163	46	3500	2900	24000	30000	25
28	3000384	F28T5/841	0.61	1163	46	4100	2900	24000	30000	25
28	3000385	F28T5/850	0.61	1163	46	5000	2700	24000	30000	25
35	3000386	F35T5/830	0.61	1463	58	3000	3650	24000	30000	25
35	3000463	F35T5/835	0.61	1463	58	3500	3650	24000	30000	25
35	3000387	F35T5/841	0.61	1463	58	4100	3650	24000	30000	25

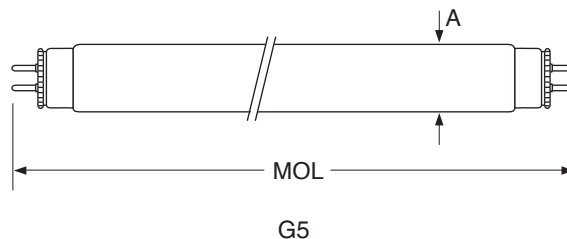
* Special Order Item

- These lamps are designed to operate on preheat ballasts.
- These lamps are designed to operate on rapid start ballasts and the life ratings listed reflect this fact.
- When using dimmers, dimming systems, or occupancy sensors, the lamp life will also be affected. The dimming system manufacturer can advise the affect of their system on lamp life.

All dimensions shown in inches unless otherwise noted.

* Based on ANSI / IESNA standards of 3 hours per start

** Based on estimated commercial operating standards of 12 hours per start



 - LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See: www.lamprecycle.org

T5 HIGH OUTPUT FLUORESCENT LAMPS

ULTRA 5™ HIGH OUTPUT SERIES

- Energy Efficient
- Linear Fluorescent Lamps
- Compact Lamp Diameter
- Bi-Pin Base - G5
- Universal Burn Position

Please See Safety & Handling Instructions on Page 90.



Watts	Ushio	Ushio	Dimensions			Color		Avg	Commercial	Case
	Ordering Code	Lamp Description	Dia (A)	MOL (mm)	MOL (in)	Temp K	Lumens lm	Rated Life* h	Life** h	Qty
ULTRA 5™ T5 High Output 1.2 — 85 CRI (Sold in Case Quantity only)										
24	3000389	F24T5HO/830	0.61	563	22	3000	2000	24000	30000	25
24	3000461	F24T5HO/835	0.61	563	22	3500	2000	24000	30000	25
24	3000390	F24T5HO/841	0.61	563	22	4100	2000	24000	30000	25
39	3000392	F39T5HO/830	0.61	863	34	3000	3500	24000	30000	25
39	3000464	F39T5HO/835	0.61	863	34	3500	3500	24000	30000	25
39	3000393	F39T5HO/841	0.61	863	34	4100	3500	24000	30000	25
54	3000395	F54T5HO/830	0.61	1163	46	3000	5000	24000	30000	25
54	3000458	F54T5HO/835	0.61	1163	46	3500	5000	24000	30000	25
54	3000396	F54T5HO/841	0.61	1163	46	4100	5000	24000	30000	25
54	3000397	F54T5HO/850	0.61	1163	46	5000	4550	24000	30000	25

¹ These lamps are designed to operate on rapid start ballasts and the life ratings listed reflect this fact.

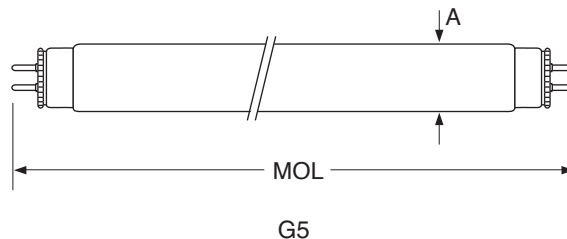
² When using dimmers, dimming systems, or occupancy sensors, the lamp life will also be affected. The dimming system manufacturer can advise the affect of their system on lamp life.

All dimensions shown in inches unless otherwise noted.

* Based on ANSI / IESNA standards of 3 hours per start

** Based on estimated commercial operating standards of 12 hours per start

Sold in Case Quantity only



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Manage in Accord with Disposal Laws

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ULTRA 8™ SERIES

- Energy Efficient
- Linear Fluorescent Lamps
- TCLP Compliant
- Cathode Guard to Prevent End Darkening
- Long Life
- Bi-Pin Base - G13
- Universal Burn Position

Please See Safety & Handling Instructions on Page 90.



Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions			Color Temp K	Lumens lm	Avg Rated Life* h	Commercial Life** h	Case Qty
			Dia (A)	MOL (mm)	MOL (in)					
ULTRA 8™ T8 Preheat ^{1, 3} (Sold in Case Quantity only)										
15	3000081	F15T8WW	1.0	451	18	3000	800	5000	6500	25
15	3000079	F15T8CW	1.0	451	18	4200	875	5000	6500	25
15	3000080	F15T8D	1.0	451	18	6500	760	5000	6500	25
ULTRA 8™ T8 700 Series ^{2, 3} — 78 CRI (Sold in Case Quantity only)										
17	3000082	F17T8/730	1.0	610	24	3000	1325	24000	30000	25
17	3000083	F17T8/735	1.0	610	24	3500	1325	24000	30000	25
17	3000084	F17T8/741	1.0	610	24	4100	1325	24000	30000	25
17	3000085	F17T8/750	1.0	610	24	5000	1325	24000	30000	25
25	3000090	F25T8/730	1.0	915	36	3000	2125	24000	30000	25
25	3000091	F25T8/735	1.0	915	36	3500	2125	24000	30000	25
25	3000092	F25T8/741	1.0	915	36	4100	2125	24000	30000	25
25	3000093	F25T8/750	1.0	915	36	5000	2125	24000	30000	25
32	3000095	F32T8/730	1.0	1219	48	3000	2850	24000	30000	25
Ⓔ 32	3000096	F32T8/735	1.0	1219	48	3500	2850	24000	30000	25
32	3000097	F32T8/741	1.0	1219	48	4100	2850	24000	30000	25
Ⓔ 32	3000098	F32T8/750	1.0	1219	48	5000	2850	24000	30000	25
ULTRA 8™ T8 800 Series ^{3, 4} — 86 CRI (Sold in Case Quantity only)										
28	3000483	F28T8/830*	1.0	1219	48	3000	2800	24000	30000	25
28	3000484	F28T8/835	1.0	1219	48	3500	2800	24000	30000	25
28	3000485	F28T8/841	1.0	1219	48	4100	2800	24000	30000	25
ULTRA 8™ T8 Tri-phosphor 800 Series ^{2, 3} — 86 CRI ▲900 Series ^{2, 3} — 95 CRI (Sold in Case Quantity only)										
17	3000231	F17T8/830	1.0	610	24	3000	1400	24000	30000	25
17	3000260	F17T8/835	1.0	610	24	3500	1400	24000	30000	25
17	3000261	F17T8/841	1.0	610	24	4100	1400	24000	30000	25
17	3000262	F17T8/850	1.0	610	24	5000	1400	24000	30000	25
25	3000263	F25T8/830	1.0	915	36	3000	2250	24000	30000	25
25	3000264	F25T8/835	1.0	915	36	3500	2250	24000	30000	25
25	3000265	F25T8/841	1.0	915	36	4100	2250	24000	30000	25
25	3000266	F25T8/850	1.0	915	36	5000	2250	24000	30000	25
32	3000099	F32T8/830	1.0	1219	48	3000	3050	24000	30000	25
Ⓔ 32	3000100	F32T8/835	1.0	1219	48	3500	3050	24000	30000	25
32	3000101	F32T8/841	1.0	1219	48	4100	3050	24000	30000	25
Ⓔ 32	3000102	F32T8/850	1.0	1219	48	5000	3050	24000	30000	25
32	3000417	▲ F32T8/960	1.0	1219	48	6000	1960	24000	30000	25
Ⓔ 32	3000480	F32T8/841/HL	1.0	1219	48	4100	3150	24000	30000	25
32	3000524	F32T8/850/HL	1.0	1219	48	5000	3150	24000	30000	25

* Special Order Item

ⓔ = This bulb meets US Federal Minimum Efficiency Standard

- These lamps are designed to operate on preheat ballasts.
- These lamps are designed to operate on rapid start ballasts and the life ratings listed reflect this fact.
- When using dimmers, dimming systems, or occupancy sensors, the lamp life will also be affected. The dimming system manufacturer can advise the affect of their system on lamp life.
- These lamps may operate on suitable energy saving 28W ballasts or instant start 32W electronic ballasts with a minimum starting voltage of 550V rms.

All dimensions shown in inches unless otherwise noted.

* Based on ANSI / IESNA standards of 3 hours per start

** Based on estimated commercial operating standards of 12 hours per start



G13



LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See: www.lamprecycle.org

T8 U-BEND & T10 FLUORESCENT LAMPS

ULTRA 8™ T8 U-BEND & ULTRA 5000™ T10 SERIES

- Energy Efficient
- U-Bend & Linear Fluorescent Lamps
- Long Life
- Bi-Pin Base - G13
- Universal Burn Position

Please See Safety & Handling Instructions on Page 90.



Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions			Color			Avg Rated Life* h	Commercial Life** h	Case Qty
			Dia (A)	MOL (mm)	MOL (in)	Temp K	CRI	Lumens lm			
ULTRA 8™ T8 U-Bend ^{1, 2} (Sold in Case Quantity only)											
Ⓔ 32	3000271	FB32T8/730/6	1.0	584	23	3000	75	2650	24000	30000	20
Ⓔ 32	3000272	FB32T8/735/6	1.0	584	23	3500	75	2650	24000	30000	20
Ⓔ 32	3000273	FB32T8/741/6	1.0	584	23	4100	75	2650	24000	30000	20
Ⓔ 32	3000274	FB32T8/750/6	1.0	584	23	5000	75	2650	24000	30000	20
ULTRA 8™ T8 U-Bend Tri-phosphor 800 Series ^{1, 2} (Sold in Case Quantity only)											
Ⓔ 28	3000503	FB28T8/830	1.0	584	23	3000	86	2800	24000	30000	20
Ⓔ 28	3000504	FB28T8/835	1.0	584	23	3500	86	2800	24000	30000	20
Ⓔ 28	3000505	FB28T8/841	1.0	584	23	4100	86	2800	24000	30000	20
Ⓔ 32	3000275	FB32T8/830/6*	1.0	584	23	3000	85	2900	24000	30000	20
Ⓔ 32	3000276	FB32T8/835/6	1.0	584	23	3500	85	2900	24000	30000	20
Ⓔ 32	3000277	FB32T8/841/6	1.0	584	23	4100	85	2900	24000	30000	20
Ⓔ 32	3000278	FB32T8/850/6	1.0	584	23	5000	84	2750	24000	30000	20
ULTRA 5000™ T10 Fluorescent ² (Sold in Case Quantity only)											
40	3000282	F40T10/950	1.3	1219	48	5000	90	3500	20000	30000	25

* Special Order Item

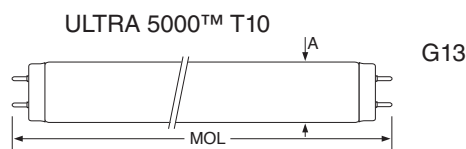
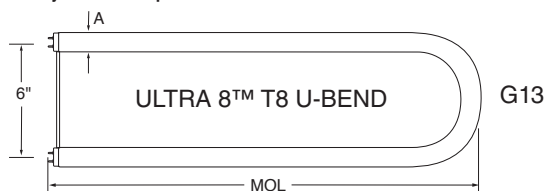
ⓔ = This bulb meets US Federal Minimum Efficiency Standard

- These lamps are designed to operate on rapid start ballasts and the life ratings listed reflect this fact.
- When using dimmers, dimming systems, or occupancy sensors, the lamp life will also be affected. The dimming system manufacturer can advise the affect of their system on lamp life.

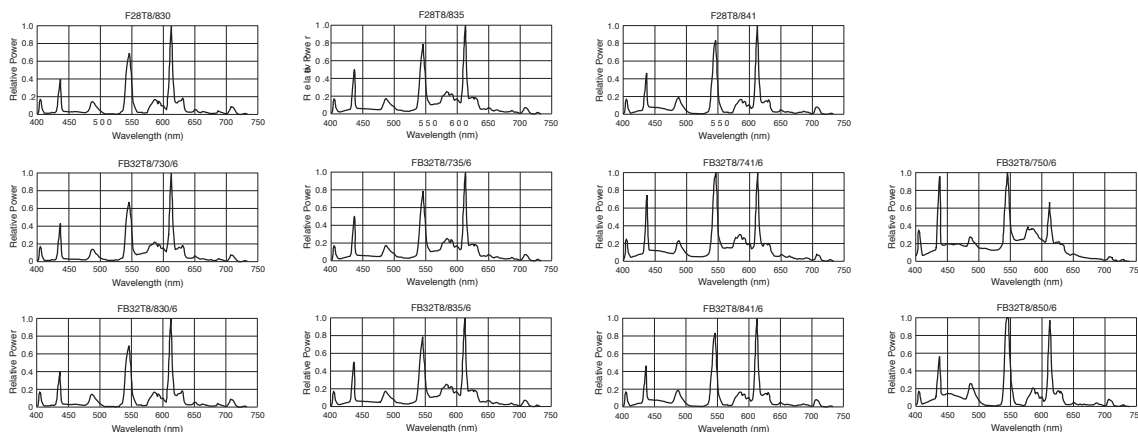
All dimensions shown in inches unless otherwise noted.

* Based on ANSI / IESNA standards of 3 hours per start

** Based on estimated commercial operating standards of 12 hours per start



ULTRA 8™ T8 U-BEND



Hg - LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See: www.lamprecycle.org

LU

- High Efficacy
- Long Life 24,000 Hours Average Rated Life
- Universal Burn Position

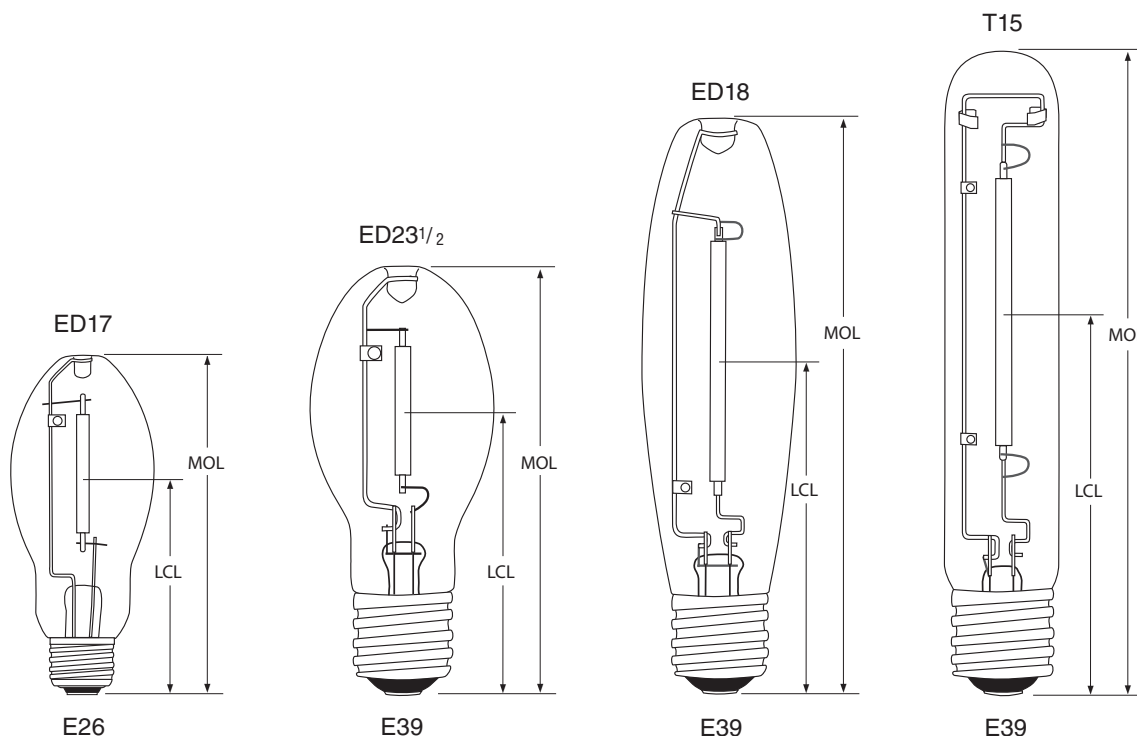
R
Please See Safety &
Handling Instructions
on Page 91.



Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions				Color Temp K	Initial Lumens lm	Mean Lumens lm	Avg Life h	ANSI Ballast/ Fixture	Case Qty
			MOL (mm)	MOL (in)	LCL (mm)	LCL (in)						
Single Ended Medium Screw Base – E26												
35	5000050	LU-35/MED, ED17*	138	5.44	84	3.31	2000	2250	2025	24000	S76HA-35	12
50	5000056	LU-50/MED, ED17	138	5.44	84	3.31	2000	4000	3525	24000	S68LP-50	12
70	5000060	LU-70/MED, ED17	138	5.44	84	3.31	2000	6400	5450	24000	S62LG-70	12
100	5000040	LU-100/MED, ED17	138	5.44	84	3.31	2000	9500	8550	24000	S54SG-100	12
150	5000045	LU-150/MED, ED17	138	5.44	84	3.31	2000	16000	14400	24000	S55RN-150	12
Single Ended Mogul Screw Base – E39												
50	5000053	LU-50, ED23½*	186	7.31	127	5.00	2000	4000	3525	24000	S68MS-50	12
70	5000057	LU-70, ED23½	186	7.31	127	5.00	2000	6300	5300	24000	S62ME-70	12
100	5000037	LU-100, ED23½	186	7.31	127	5.00	2000	9500	8550	24000	S54SB-100	12
150	5000042	LU-150/55, ED23½	186	7.31	127	5.00	2000	16000	14400	24000	S55SC-150	12
200	5000046	LU-200, ED18	248	9.75	146	5.75	2000	22000	19800	24000	S66MN-200	12
250	5000047	LU-250, T15*	260	10.75	158	6.25	2000	28500	25500	24000	S50VA-250	12
250	5001138	LU-250, ED18	248	9.75	146	5.75	2000	28500	25500	24000	S50VA-250	12
400	5000051	LU-400, ED18	248	9.75	146	5.75	2000	48000	43500	24000	S51WA-400	12
400	5001127	LU-400, T15	292	11.5	175	6.88	2000	48000	43500	24000	S51WA-400	12

* Special Order Item

All dimensions shown in inches unless otherwise noted.
E/=Enclosed Fixture Required



(Hg) - LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See: www.lamprecycle.org

UMH

- High Efficacy
- Long Life
- Medium Screw Base - E26
Mogul Screw Base - E39

- 65-75 CRI - Color Rendering Index
- Universal Burn Position

R
Please See Safety &
Handling Instructions
on Page 91.



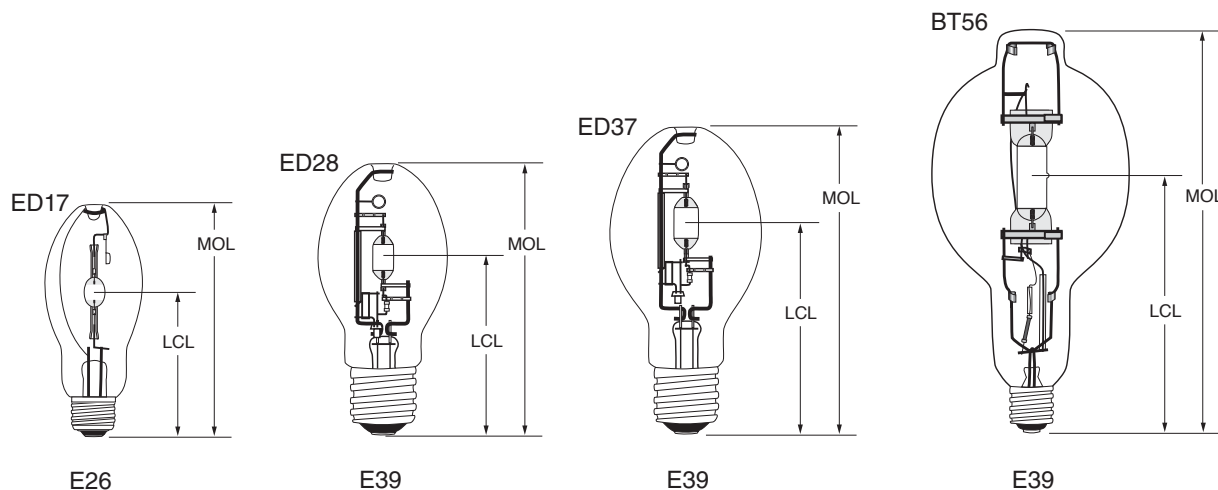
Watts	Ushio Ordering Code	Ushio Lamp Description	Dimensions				Color Temp K	Initial Lumens lm	Mean Lumens lm	Avg Life* h	ANSI Ballast/ Fixture	Case Qty
			MOL (mm)	MOL (in)	LCL (mm)	LCL (in)						
Medium Screw Base – E26												
50	5000230	UMH-50/U, ED17	138	5.44	86	3.4	4000	3400	2200	10000	M110/E	12
175	5000222	UMH-175/U/MD, ED17	138	5.44	86	3.4	4000	14000	10500	10000	M57/E	12
Mogul Screw Base – E39												
175	5000221	UMH-175/U, ED28	211	8.31	127	5.0	4000	13500	8700	10000	M57/E	12
250	5000224	● UMH-250/C/U, ED28	211	8.31	127	5.0	3700	20000	13000	10000	M58/E	12
250	5000225	UMH-250/U, ED28	211	8.31	127	5.0	4000	21000	13700	10000	M58/E	12
400	5000938	UMH-400/U, ED28	211	8.31	127	5.0	4000	34000	22000	20000	M59/E	6
400	5000227	UMH-400/U, ED37	292	11.50	178	7.0	4000	34000	22000	20000	M59/E	6
1000	5001139	○ UMH-1000/U, BT37	292	11.50	178	7.0	4000	105000	68300	12000	M47/E	6
1000	5000214	UMH-1000/U, BT56	391	15.38	241	9.5	4000	110000	71500	12000	M47/E	6
1500	5000217	○ UMH-1500/HBU, BT56	391	15.38	241	9.5	3400	161000	136000	3000	M47/E	6

* Average Life based upon Vertical operation and 10 hour duty cycle. Horizontal operation reduces life expectancy by approximately 25%

All dimensions shown in inches unless otherwise noted.
/E = Enclosed Fixture Required

Bulb Type

- Clear
- Coated



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Manage in Accord with Disposal Laws
See: www.lamprecycle.org

UMH

- High Efficacy
- Long Life
- Mogul Screw Base - EP39
- Horizontal Burn Position

- Warm White 65 CRI - Color Rendering Index

R
Please See Safety & Handling Instructions on Page 91.



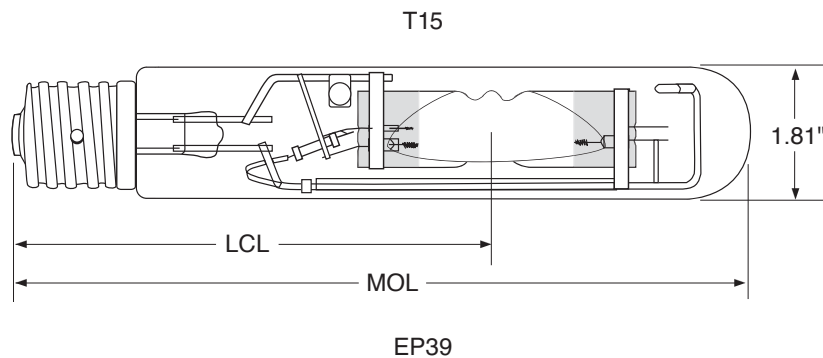
Watts	Ushio	Ushio	Lamp Current A	Dimensions				Color Temp K	Mean Lumens lm	Avg Life h	ANSI Ballast/ Fixture	Case Qty
	Ordering Code	Lamp Description		MOL MOL (mm)	MOL LCL (in)	LCL (mm)	LCL (in)					
Mogul Screw Base – EP39												
250	5001408	UMH-250/HOR/MOG/32/T15	2.15	215	8.44	146	5.75	3200	21000	10000	M58/E	12
400	5001409	UMH-400/HOR/MOG/32/T15	3.25	248	9.75	146	5.75	3200	38000	15000	M59/E	12

Ignition Voltage: 207V

Lamp Voltage: 250W = 118-148V; 400W = 115-145V

All dimensions shown in inches unless otherwise noted.

/E = Enclosed Fixture Required



(Hg) - LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See: www.lamprecycle.org

PULSESTRIKE™ SERIES

- Formed Arc Tube Body
- High Efficacy
- Faster Warm-up Time
- Faster Re-strike Time
- Better Lumen Maintenance
- Better Color Performance & Uniformity
- Long Life
- Universal Burn Position

R
Please See Safety &
Handling Instructions
on Page 91.



Watts	Ushio Ordering Code	Ushio Lamp Description	Bulb Type	Color Temp K	Initial Lumens Vert / Horiz Burn Position	Mean Lumens Vert / Horiz Burn Position	Avg Life h	ANSI Ballast/ Fixture	Case Qty
Medium Screw Base – E26									
70	5001342	MP70/U/MED/32/PS	EDX17	3200	5500 / 5200	4100 / 3300	15000*	M98/O	12
70	5001344	MH70/U/MED/40/PS	ED17	4000	6000 / 4850	4100 / 3150	15000*	M98/E	12
70	5001346	MP70/U/MED/40/PS	EDX17	4000	5500 / 5150	4000 / 3550	15000*	M98/O	12
100	5001414	MP100/U/MED/32/PS	EDX17	3200	8800 / 8400	5700 / 5575	15000*	M90/O	12
100	5001348	MH100/U/MED/40/PS	ED17	4000	8500 / 8100	5300 / 5100	15000*	M90/E	12
100	5001350	MP100/U/MED/40/PS	EDX17	4000	8100 / 8050	4900 / 4800	15000*	M90/O	12
150	5001354	MP150/U/MED/32/PS	EDX17	3200	13300 / 12400	9200 / 8300	15000*	M102/O	12
150	5001356	MH150/U/MED/40/PS	ED17	4000	14000 / 12100	9700 / 9600	15000*	M102/E	12
150	5001358	MP150/U/MED/40/PS*	EDX17	4000	12300 / 12200	9500 / 9400	15000*	M102/O	12

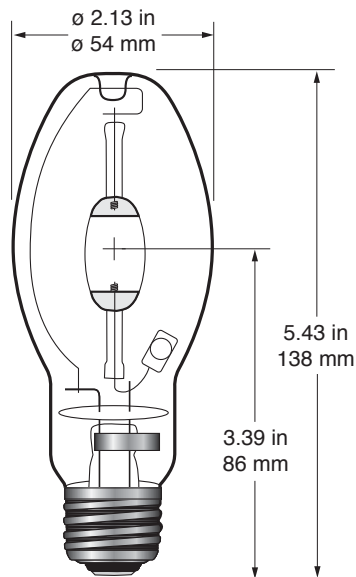
Burn Cycle:

* Special Order Item

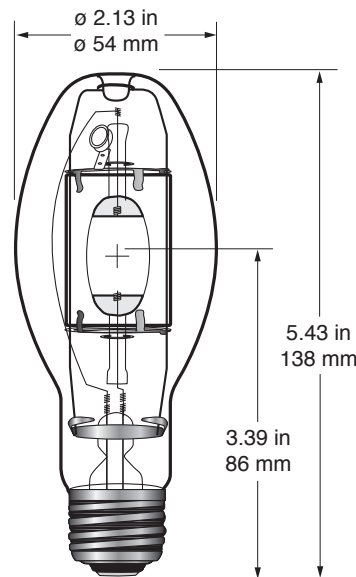
* 11 hours ON, 1 hour OFF

All dimensions shown in inches unless otherwise noted.
/E = Enclosed Fixture Required /O = Open Fixture Permissible

Color Rendering Index:
3200K & 4000K— 70 CRI



E26
ED17
/E = Enclosed
fixtures only



E26
EDX17
/O = Open or
Enclosed fixtures

Hg - LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See: www.lamprecycle.org

PULSESTRIKE™ SERIES

- Formed Arc Tube Body
- High Efficacy
- Faster Warm-up Time
- Faster Re-strike Time
- Better Lumen Maintenance
- Better Color Performance & Uniformity
- Long Life
- Universal Burn Position

R
Please See Safety &
Handling Instructions
on Page 91.



Watts	Ushio Ordering Code	Ushio Lamp Description	Bulb Type	Color Temp K	Initial Lumens Vert / Horiz Burn Position	Mean Lumens Vert / Horiz Burn Position	Avg Life h	ANSI Ballast/ Fixture	Case Qty
Mogul Screw Base – E39, EX39									
250	5001360	MH250/U/MOG/40/PS	ED28	4000	25000 / 23500	19000 / 17500	15000*/20000**	M153/E	12
250	5001362	MP250/U/MOG/40/PS	ED28	4000	26000 / 24500	19500 / 18200	15000*/20000**	M153/O	12
320	5001364	MH320/U/MOG/40/PS	ED28	4000	32500 / 31500	25500 / 25000	20000*/30000**	M154/E	12
320	5001366	MP320/U/MOG/40/PS	ED28	4000	32500 / 30500	23000 / 22000	20000*/30000**	M154/O	12
350	5001368	MH350/U/MOG/40/PS	ED28	4000	37000 / 35500	28000 / 27000	20000*/30000**	M131/E	12
350	5001370	MP350/U/MOG/40/PS	ED28	4000	39000 / 36500	29000 / 26500	20000*/30000**	M131/O	12
400	5001372	MH400/U/MOG/40/PS	ED28	4000	40000 / 39000	32000 / 30000	20000*/30000**	M155/E	12
400	5001374	MP400/U/MOG/40/PS	ED28	4000	42000 / 41000	30500 / 30000	20000*/30000**	M155/O	12

Burn Cycle:

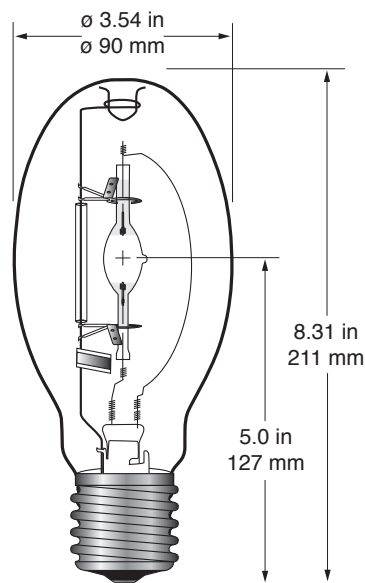
* 11 hours ON, 1 hour OFF

** 120 hours ON, 1 hour OFF

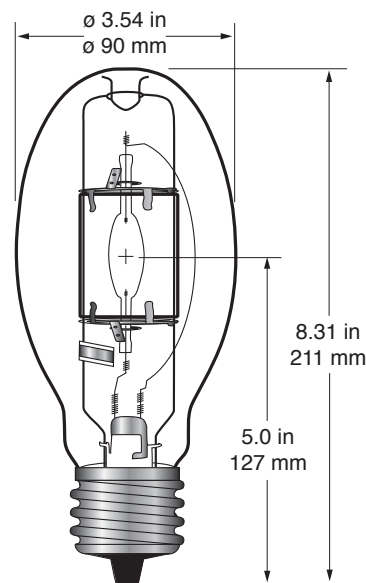
(Lamp should be switched off for at least 15 minutes per week)

All dimensions shown in inches unless otherwise noted.
/E = Enclosed Fixture Required /O = Open Fixture Permissible

Color Rendering Index: 70 CRI



E39
ED28
/E = Enclosed
fixtures only



EX39
ED28
/O = Open or
Enclosed fixtures

(Hg) - LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See: www.lamprecycle.org

ULTRA-ARC™ SERIES

- Consistent Color
- High Pressure Sodium Retrofit
- High Color Temperature - 5200K
- 85 Color Rendering Index
- Universal Burn Position

R
Please See Safety & Handling Instructions on Page 91.



Watts	Ushio Ordering Code	Ushio Lamp Description	Lamp Current A	Dimensions				Color Temp K	Mean Lumens lm	Luminous Flux lm	Avg Life* h	ANSI Ballast/ Fixture	Case Qty
				Dia	MOL	LCL	Arc						
				(A)	(B)	(C)	Gap						
Mogul Screw Base – E39				mm									
250	5001175	UHI-S250DD	3.0	1.81	8.86	5.90	24	5200	14000	20000	15000	S50**/E	12
400	5000798	UHI-S400DD	4.6	1.81	9.76	5.75	27	5200	23000	33000	20000	S51**/E	12

Recommended Ignition Voltage: 2kV

Lamp should be switched off for at least 15 minutes/week

*Based on (11 hours ON and 1 hour OFF)

All dimensions shown in inches unless otherwise noted.

/E = Enclosed Fixture Required

** use with ignitor

Ultra-Arc™ Metal Halide lamps feature the best combination of color balance and color rendering quality available for a direct retrofit into High Pressure Sodium fixtures.

The Ultra-Arc™ lamps are used in High Pressure Sodium fixtures where the high color rendering and white light of metal halide is desired. Ideal for areas where security is a concern higher color rendering lamps allow for surveillance/security cameras and eyewitnesses to visually interpret in true colors.

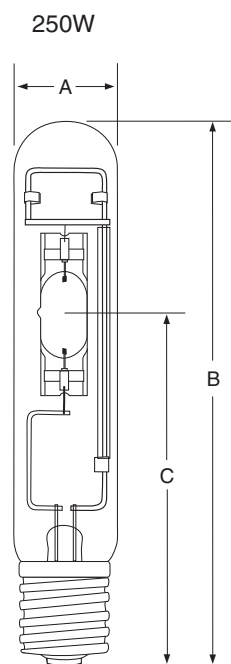
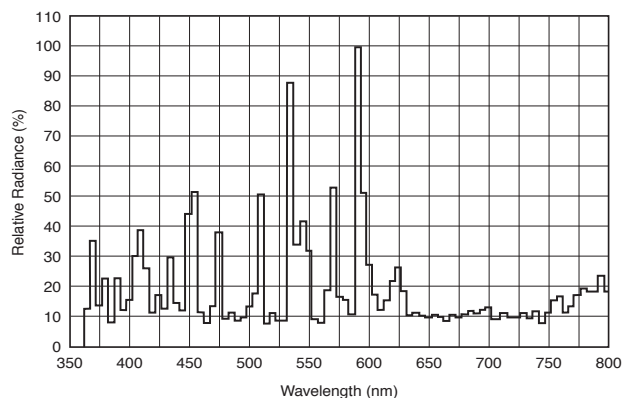
Applications:

- Security
- Parking Structures
- Downlighting
- Commercial & Industrial

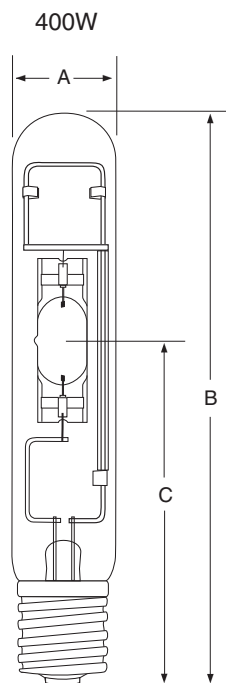
Color Coordinates:

x = .340 y = .350

5200K SPECTRAL DISTRIBUTION



E39



E39

Hg - LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See: www.lamprecycle.org

EUROFLOOD™ UHI SERIES

- Color Stable
- High Efficacy - 80 lm/W
- Long Life 10,000 Hours Average Rated Life
- Compact Design

- 80 CRI - Color Rendering Index
- UV Protection

R
Please See Safety & Handling Instructions on Page 91.



Watts	Ushio Ordering Code	Ushio Lamp Description	Lamp Volts V	Lamp Current A	Dimensions				Color Temp K	Luminous Flux lm	Avg Life h	ANSI Ballast/ Fixture	Case Qty
					Dia (A)	C-to-C (B)	LCL (C)	Arc Gap					
Double Ended Base – RX7s					mm								
75	5000194	UHI-70DW/UV	95	0.9	0.79	4.50	2.24	8.5	3000	6000	10000	M85/E	10
75	5000190	UHI-70DL/UV	95	0.9	0.79	4.50	2.24	8.5	3500	6000	10000	M85/E	10
75	5000192	UHI-70DM/UV	95	0.9	0.79	4.50	2.24	8.5	4200	6000	10000	M85/E	10
150	5000184	UHI-150DW/UV	95	1.8	0.90	5.20	2.60	18.0	3000	12000	10000	M81/E	10
150	5000182	UHI-150DM/UV	95	1.8	0.90	5.20	2.60	18.0	4200	12000	10000	M81/E	10
150	5000178	UHI-150DD/UV*	95	1.8	0.90	5.20	2.60	18.0	5200	11000	10000	M81/E	10
Double Ended Base – Fc2					mm								
250	5000188	UHI-250DM/UV	100	3.0	0.98	5.47	2.74	24.0	4200	20000	10000	M80/E	20

* Special Order Item

All dimensions shown in inches unless otherwise noted.
/E = Enclosed Fixture Required

Burn Position: Horizontal $\pm 45^\circ$

Recommended Ignition Voltage: 4kV

Lamp should be switched off for at least 15 minutes/week

Use only in fixtures installed with safety glass

Lamp Code Suffix Designation:

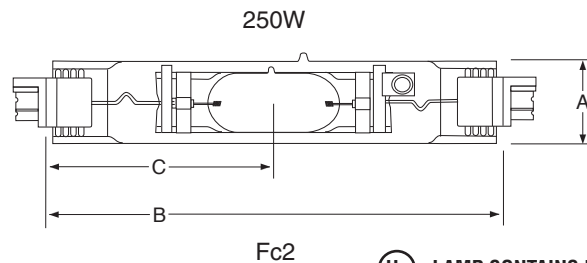
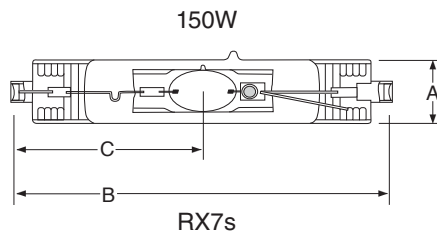
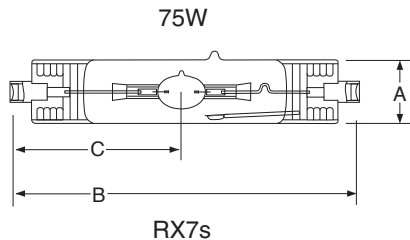
DW = Warm White

DL = Brilliant White

DM = Cool White

DD = Daylight

/UV = UV-absorbing quartz glass



(Hg) - LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See: www.lamprecycle.org

EUROSPOT™ UHI SERIES

- Color Stable
- High Efficacy - 80 lm/W
- Long Life
- Compact Design
- 80 CRI - Color Rendering Index
- UV Protection

R
Please See Safety &
Handling Instructions
on Page 91.



Watts	Ushio	Ushio	Volts V	Lamp	Dimensions				Color Temp K	Luminous Flux lm	Avg Life h	ANSI Ballast/ Fixture	Case Qty
	Ordering Code	Lamp Description		Current A	Dia (A)	MOL (B)	LCL (C)	Arc Gap					
2-Pin Base – G12 Axial Arc													
75	5000439	UHI-S75DW/UV	95	0.9	0.91	3.90	2.20	8.5	3000	6000	10000	M98/E	10
150	5000950	UHI-S150DW/A/UV	95	1.8	0.91	3.90	2.20	6.5	3000	13000	10000	M102/E	10
150	5000875	UHI-S150DM/A/UV	95	1.8	0.91	3.90	2.20	6.5	4200	13000	10000	M102/E	10

Burn Position: Universal 360°

Recommended Ignition Voltage: 4kV

Lamp should be switched off for at least 15 minutes/week

Use only in fixtures installed with safety glass

Lamp Code Suffix Designation

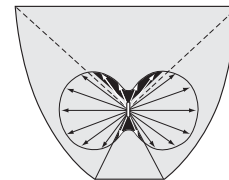
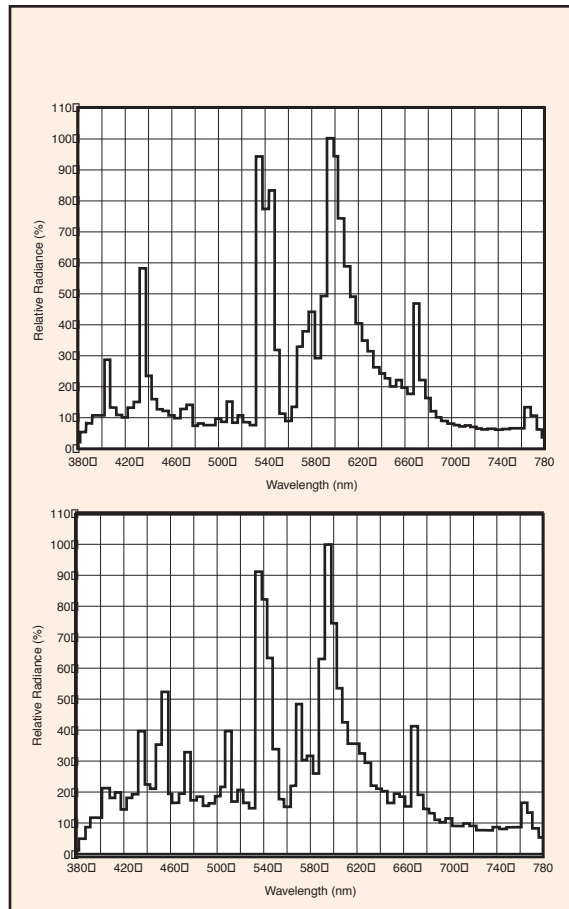
DW = Warm White

DM = Cool White

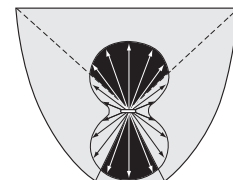
/UV = UV-absorbing quartz glass

All dimensions shown in inches unless otherwise noted.

/E = Enclosed Fixture Required

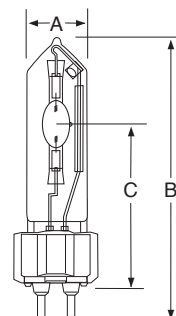


Axial, low stray light
portion: approximately 30% higher
luminous efficiency can be attained
by axial arrangement



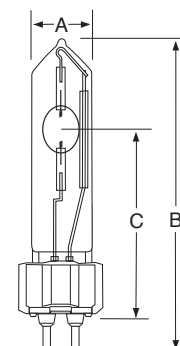
Transverse, high stray light
portion: stray light leads to
dazzle or loss

75W



G12

150W



G12

Hg - LAMP CONTAINS MERCURY
Manage in Accord with Disposal Laws
See: www.lamprecycle.org

CERAMIQUE™ SERIES

- High Color Rendering
- Ceramic Arc Tube
- Consistent Color
- Long Life

R
Please See Safety &
Handling Instructions
on Page 91.



Watts	Ushio	Ushio	Lamp Current A	Dimensions			Color Temp K	Luminous Flux lm	Avg Life h	ANSI Ballast/ Fixture	Case Qty
	Ordering Code	Lamp Description		Dia (A)	MOL (B)	LCL (C)					
Single Ended Base – G12											
35	5002186	CMS-35/T4.5/830/G12	0.50	0.75	3.74	2.2	3000	3400	10000	M130/E	12
35	5002187	CMS-35/T4.5/942/G12	0.50	0.75	3.74	2.2	4200	3200	10000	M130/E	12
70	5001321	CMS-70/T6/830/G12	0.98	0.75	3.94	2.2	3000	6200	15000	M85/E, M98/E, M139/E	10
70	5001322	CMS-70/T6/942/G12	0.98	0.75	3.94	2.2	4200	6000	15000	M85/E, M98/E, M139/E	10
150	5001323	CMS-150/T6/830/G12	1.85	0.75	4.33	2.2	3000	14000	12000	M81/E, M102/E, M142/E	10
150	5001324	CMS-150/T6/942/G12	1.85	0.75	4.33	2.2	4200	13000	12000	M81/E, M102/E, M142/E	10
Double Ended Base – RX7s C-to-C											
70	5001317	CMD-70/TD/942/RX7S	0.90	0.79	4.50	—	4200	7000	15000	M85/E, M98/E, M139/E	10

Burn Position:

G12 Base: Universal 360°

RX7s Base: Horizontal ±45°

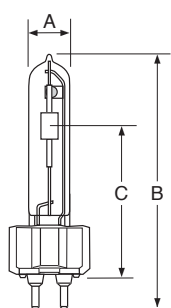
Recommended Ignition Voltage: 4kV

Lamp should be switched off for at least 15 minutes/week

Use only in fixtures installed with safety glass

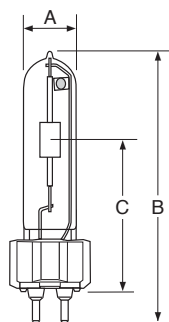
All dimensions shown in inches unless otherwise noted.
/E = Enclosed Fixture Required

35W



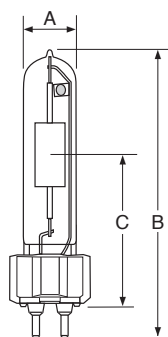
G12

70W



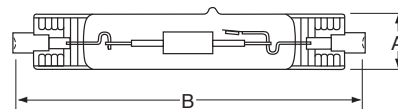
G12

150W



G12

70W



RX7s

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Manage in Accord with Disposal Laws
See: www.lamprecycle.org

COLORLITE™ SERIES

- Consistent Color
- No Color Filter or Gels Required for Fixture
- 6,000 Hours Useful Life

R
Please See Safety &
Handling Instructions
on Page 91.



Watts	Ushio Ordering Code	Ushio Lamp Description	Volts V	Lamp Current A	Dimensions			Luminous		ANSI Ballast/ Fixture	Burn Position	Case Qty
					Dia (A)	MOL (B)	LCL (C)	Flux lm	Wavelength nm	Saturation %		
Single Ended Medium Screw Base – E26												
150	5001453	UHI-S150/BLUE*	—	1.80	2.13	5.43	3.39	3900	470	70	M102/E	Univ 12
150	5001452	UHI-S150/GREEN*	—	1.80	2.13	5.43	3.39	12500	530	46	M102/E	Univ 12
150	5001498	UHI-S150/MAGENTA*	—	1.80	2.13	5.43	3.39	7500	-530	43	M102/E	Univ 12
150	5001499	UHI-S150/ORANGE	—	1.80	2.13	5.43	3.39	11200	600	54	M102/E	Univ 12
175	5001455	UHI-S175/BLUE	—	1.50	2.13	5.43	3.39	3900	470	70	M57/E	Univ 12
175	5001454	UHI-S175/GREEN	—	1.50	2.13	5.43	3.39	12500	530	46	M57/E	Univ 12
Single Ended Mogul Screw Base – E39												
250	5001484	UHI-S250/BLUE	—	3.00	1.81	8.86	5.91	5400	465	66	M80/E*	Univ 12
250	5001485	UHI-S250/GREEN*	—	3.00	1.81	8.86	5.91	21000	530	50	M80/E*	Univ 12
250	5001486	UHI-S250/MAGENTA*	—	3.00	1.81	8.86	5.91	11000	-560	29	M80/E*	Univ 12
250	5001487	UHI-S250/ORANGE	—	3.00	1.81	8.86	5.91	17000	595	54	M80/E*	Univ 12
400	5000947	UHI-S400BL, BLUE	—	3.25	1.81	10.83	6.89	8000	465	66	M59/E	Univ 12
400	5000946	UHI-S400GR, GREEN	—	3.25	1.81	10.83	6.89	35000	535	63	M59/E	Univ 12
400	5000948	UHI-S400MG, MAGENTA	—	3.25	1.81	10.83	6.89	21000	-540	32	M59/E	Univ 12
1000	5001189	UHI-S1000BL, BLUE	—	4.10	2.99	13.39	8.66	22000	455	61	M47/E	H [±] 60° 6
1000	5001188	UHI-S1000GR, GREEN	—	4.10	2.99	13.39	8.66	92000	535	60	M47/E	H [±] 60° 6
Double Ended Base – RX7s C-to-C												
150	5000821	UHI-150BL, BLUE	95	1.80	0.91	5.20	2.60	3000	465	56	M81/E	H [±] 45° 10
150	5000822	UHI-150GR, GREEN	95	1.80	0.91	5.20	2.60	9500	530	50	M81/E	H [±] 45° 10

* Special Order Item

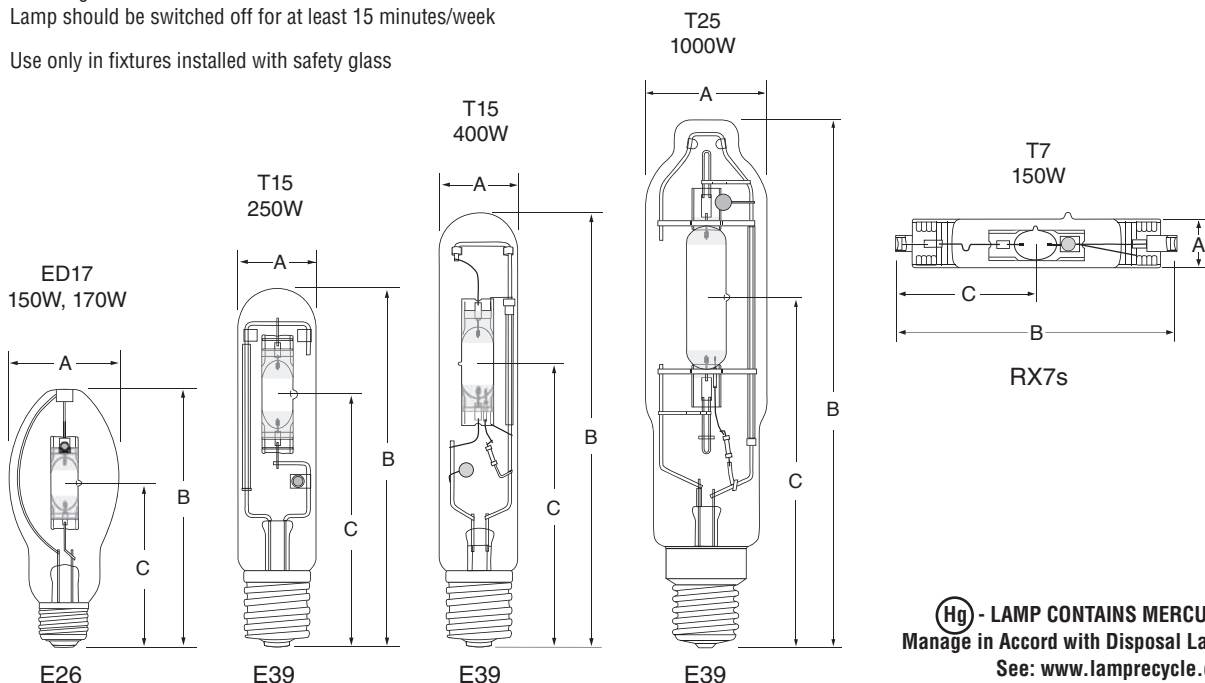
All dimensions shown in inches unless otherwise noted.
/E = Enclosed Fixture Required

Recommended Ignition Voltage: 4kV

* Need ignitor with 4kV

Lamp should be switched off for at least 15 minutes/week

Use only in fixtures installed with safety glass



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Manage in Accord with Disposal Laws
See: www.lamprecycle.org

AQUALITE™ SERIES

- High Color Temperature - 10,000K
- Excellent Color Rendering
- Long Life
- Aquarium & Waterscape Applications

R
Please See Safety &
Handling Instructions
on Page 91.



Watts	Ushio Ordering Code	Ushio Lamp Description	Lamp Volts V	Current A	Dimensions				CRI	Luminous Flux lm	Avg Life h	ANSI Ballast/ Fixture+	Burn Position	Case Qty
Single Ended Mogul Screw Base – E39					mm									
175	5001586	UHI-S175AQ/65	132	1.5	1.81	8.31	5.00	16	70	11675	6000	M137*/M152	Univ	12
175	5000761	UHI-S175AQ/10	132	1.5	1.81	8.31	5.00	16	90	7500	6000	M137*/M152	Univ	12
175	5001591	UHI-S175AQ/14	132	1.5	1.81	8.31	5.00	16	70	7500	6000	M137*/M152	Univ	12
175	5001592	UHI-S175AQ/20+	132	1.5	1.81	8.31	5.00	16	N/A	4300	6000	M137*/M152	Univ	12
250	5001070	UHI-S250AQ/10/CWA	133	3.0	1.81	8.86	5.91	—	90	11000	8000	M58	Univ	12
250	5002092	UHI-S250AQ/14/CWA	133	3.0	1.81	8.86	5.91	—	70	11000	8000	M58	Univ	12
250	5002093	UHI-S250AQ/20/CWA	133	3.0	1.81	8.86	5.91	—	N/A	5000	8000	M58	Univ	12
400	5001492	UHI-S400AQ/10/CWA	N/A	3.6	1.81	10.83	6.89	—	90	18500	8000	M59	Univ	12
400	5002094	UHI-S400AQ/14/CWA	N/A	3.6	1.81	10.83	5.91	—	70	18500	8000	M59	Univ	12
400	5002095	UHI-S400AQ/20/CWA	N/A	3.6	1.81	10.83	6.89	—	N/A	8000	8000	M59	Univ	12
400	5000760	UHI-S400AQ/10	120	4.0	1.81	10.83	6.89	40	90	18500	8000	M135*/M155	Univ	12
400	5001608	UHI-S400AQ/14	120	3.2	1.81	10.83	6.89	40	70	18500	6000	M135*/M155	Univ	12
400	5001607	UHI-S400AQ/20+	120	3.2	1.81	10.83	6.89	40	N/A	8000	6000	M135*/M155	Univ	12
1000	5000910	UHI-S1000AQ/10	122	9.5	3.00	13.39	8.66	72	90	50000	3000	M83**/M141	H±60°	6
1000	5001493	UHI-S1000AQ/10/CWA	N/A	4.1	3.00	11.42	8.28	—	90	46000	3000	M47	H±60°	6
Double Ended Base – RX7s, RX7s-24 & Fc2/18 C-to-C					mm									
75	5000870	UHI-70AQ/10	95	0.9	0.79	4.50	2.24	16	80	3100	6000	M85**	H±45°	10
75	5001627	UHI-70AQ/14	95	0.9	0.79	4.50	2.24	16	90	—	6000	M85**	H±45°	10
75	5001606	UHI-70AQ/20+	95	0.9	0.79	4.50	2.24	16	N/A	1700	6000	M85**	H±45°	10
150	5000440	UHI-150AQ/10	95	1.8	0.91	5.20	2.60	18	90	7000	6000	M81**	H±45°	10
150	5001587	UHI-150AQ/14	95	1.8	0.91	5.20	2.60	18	70	6000	6000	M81**	H±45°	10
150	5001588	UHI-150AQ/20+	95	1.8	0.91	5.20	2.60	18	N/A	3000	6000	M81**	H±45°	10
250	5000763	UHI-250AQ/10	100	3.0	0.98	5.47	2.74	24	90	10500	6000	M80**	H±45°	10
250	5001589	UHI-250AQ/14	100	3.0	0.98	5.47	2.74	24	70	10600	6000	M80**	H±45°	10
250	5001590	UHI-250AQ/20+	100	3.0	0.98	5.47	2.74	24	N/A	5000	6000	M80**	H±45°	10

Recommended Ignition Voltage: 4kV

*Pulse type ballast with ignitor **Need ignitor with 4kV

Lamp should be switched off for at least 15 minutes/week

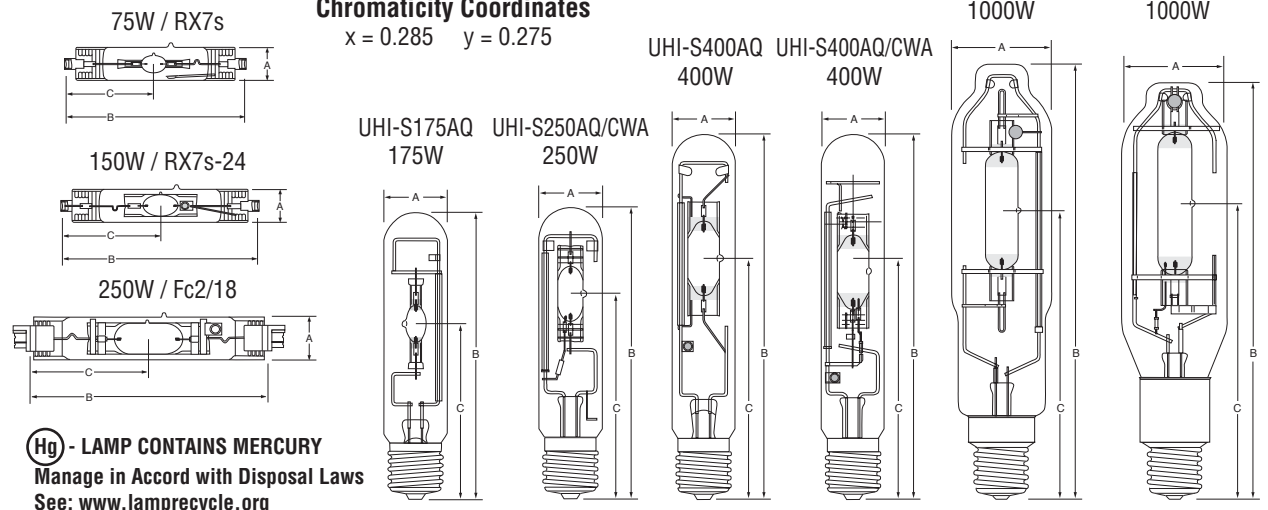
For architectural use – UV protective glass is necessary

All dimensions shown in inches unless otherwise noted.

/E = Enclosed Fixture Required*

Chromaticity Coordinates

x = 0.285 y = 0.275



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Manage in Accord with Disposal Laws
See: www.lamprecycle.org

MHR

- Cold Mirror Reflector
- Compact Design
- Standard AMP Connector

Please See Safety & Handling Instructions on Page 91.

Watts	Ushio	Ushio	Volts V	Ignition	Lamp	Luminous Flux through Aperature			Color Temp K	CRI	Avg Life h	ANSI Ballast/ Fixture	Case Qty
	Ordering Code	Lamp Description		Voltage kV	Current A	ø13mm distance 42mm lm*	ø10mm distance 44mm lm*	ø25mm distance 33mm lm**					
AMP Connector													
100	5000789	MHR-100D/L	95	4	1.2	1600	1800	4600	5200	72	6000	M90/E	1
150	5000834	MHR-150N	95	4	1.8	2000	2200	5300	4200	75	6000	M81/E	1
250	5001377	MHR-250N	100	4	3.0	3500▲	—	—	4200	72	4000	M80/E	1

/E = Enclosed Fixture Required

Optimal distance from reflector to fiber (with ø13mm fiber bundle):

100W & 150W: 42mm
250W: 53mm

Length of Base Lead Wire: Approx. 75mm

Base Type: AMP Universal Mate-N-Lok

MHR-100D/L: 3 channel plug

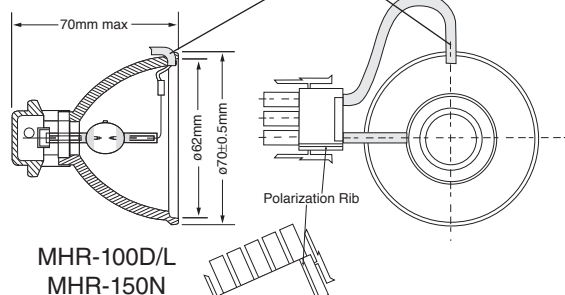
MHR-150N: 5 channel plug

MHR-250N: 5 channel plug

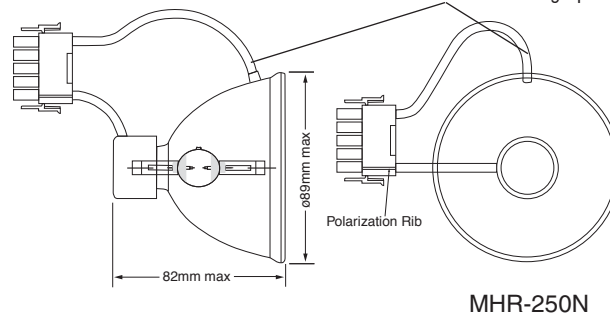


- * Measurement taken with optical sphere
- ** Measurement taken through fiber bundle
- ▲ (ø13mm; distance 53mm)

Burn Position: Lead wire facing up



Burn Position: Lead wire facing up



Ballast & Ignitor Information

At the end of their lifetime, metal halide lamps may show rectifier effects causing a rise in current of up to 3 times of the rated value thereby possibly damaging the ballast. Therefore we recommend to use only ballasts with integrated thermoswitch. For line compensation, a capacitor should be used. It is recommended to use ignitors with a timer switch. The use of electronic ballasts is possible if the operating frequency is below 250Hz. All lamps must be used with 4kV ignitor.

MHR-100D/L

Warm-up Time to 95% luminous flux: 2.5 minutes with standard ballast

Reignition Time: Approximately 1 minute

MHR-150N

Warm-up Time: 3 minutes

Reignition Time: Approximately 2 minutes

MHR-250N

Warm-up Time: 10 minutes

Reignition Time: Approximately 7 minutes

Warning!

The lamp emits UV radiation which can cause serious eye and skin damage. Therefore, the lamp must be used only in closed lamp houses.

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Manage in Accord with Disposal Laws
See: www.lamprecycle.org

MR-16 SYNERGIE™ SERIES

- 80% Energy-Savings vs. Halogen MR-16
- Long Life 50,000 Hours Average Rated Life
- Replacement for Halogen MR-16
- Dimmable

- Low Voltage - 12 Volts
- Cool Beam - Cool Operation
- No UV, IR or Mercury
- Lead Free, RoHS Compliant

Please See Safety & Handling Instructions on Page 92.

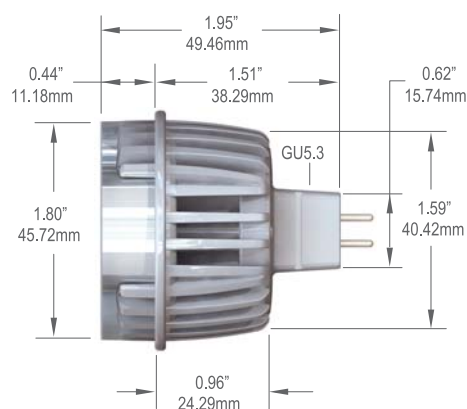
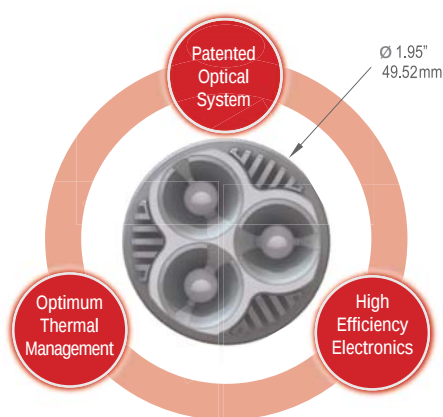
Watts	Ushio Ordering Code	Ushio Lamp Description	Dimension		Color Temp K	Beam		Avg Life h	Min Luminous Flux*	Burn Position	Case Qty
			MOL (in)	CRI		Angle	Spread				
SYNERGIE™, LED Reflector 2-Pin Base – GU5.3											
4	1003601	SYNERGIE LED MR16, SP12, DL	1.95	70	6500	12º	Spot	50000	230	Univ	24
4	1003602	SYNERGIE LED MR16, NFL24, DL	1.95	70	6500	24º	Narrow Flood	50000	240	Univ	24
4	1003603	SYNERGIE LED MR16, FL34, DL	1.95	70	6500	34º	Flood	50000	240	Univ	24
4	1003604	SYNERGIE LED MR16, WFL50, DL	1.95	70	6500	50º	Wide Flood	50000	250	Univ	24
4	1003609	SYNERGIE LED MR16, SP12, NW	1.95	80	4200	12º	Spot	50000	170	Univ	24
4	1003610	SYNERGIE LED MR16, NFL24, NW	1.95	80	4200	24º	Narrow Flood	50000	175	Univ	24
4	1003611	SYNERGIE LED MR16, FL34, NW	1.95	80	4200	34º	Flood	50000	175	Univ	24
4	1003612	SYNERGIE LED MR16, WFL50, NW	1.95	80	4200	50º	Wide Flood	50000	180	Univ	24
4	1003605	SYNERGIE LED MR16, SP12, WW	1.95	80	3100	12º	Spot	50000	150	Univ	24
4	1003606	SYNERGIE LED MR16, NFL24, WW	1.95	80	3100	24º	Narrow Flood	50000	160	Univ	24
4	1003607	SYNERGIE LED MR16, FL34, WW	1.95	80	3100	34º	Flood	50000	160	Univ	24
4	1003608	SYNERGIE LED MR16, WFL50, WW	1.95	80	3100	50º	Wide Flood	50000	170	Univ	24

All dimensions shown in inches unless otherwise noted.

*Minimum lumen output values as measured in an integrating sphere.

From the world leader in MR-16 lamp technology comes the world's most efficient solid state LED MR-16 lamp. **Synergie's™** state-of-the-art technology allows this 4W LED MR-16 to directly replace 20-25W halogen MR-16s. No false claims, just outstanding performance that yields 80% energy-savings. In fact, Synergie™ is the first LED MR-16 lamp to meet the efficiency requirements of California's stringent Title 24 regulations.

Rated at 50,000 hours, Synergie™ has a true life rating of more than 10 times that of standard MR-16 lamps on the market today. Synergie™ is the premium choice for those applications where frequency of lamp changes and cost of ownership are significant factors.



H (ft)		E (fc)		12°	
Ø (ft)		DL	NW	WW	
0.66	3.3	399	344	309	
Maximum Intensity (Cd) 4,229 3,646 3,275					

H (ft)		E (fc)		24°	
Ø (ft)		DL	NW	WW	
1.31	3.3	136	105	97	
Maximum Intensity (Cd) 1,442 1,113 1,028					

H (ft)		E (fc)		34°	
Ø (ft)		DL	NW	WW	
2.00	3.3	62	49	41	
Maximum Intensity (Cd) 657 519 435					

H (ft)		E (fc)		50°	
Ø (ft)		DL	NW	WW	
3.06	3.3	40	28	25	
Maximum Intensity (Cd) 424 297 265					

PEARL-LUX™ & OPAL-LUX™ SERIES

- Architectural Grade
- Silicone Coated
- Flexible
- Easy to Install

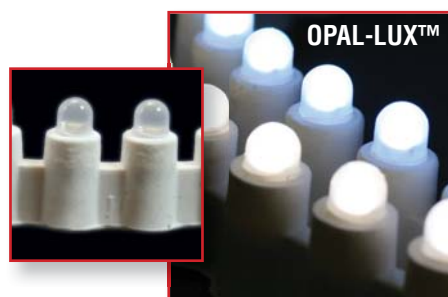
- Cool Operations
- Energy Efficient
- No UV, IR or Mercury
- Long Life Up to 50,000 Hours Average Rated Life

- Lead Free, RoHS Compliant

Please See Safety & Handling Instructions on Page 92.

Watts	Ushio Ordering Code	Ushio Lamp Description	Volts V	Dimensions			Viewing Angle Degree	Lumens lm	Color Temp K	Commercial Life h	Case Qty
				Height (in)	Length (in)	Width (in)					
PEARL-LUX™ LED Strings, IP67 Rated											
6	1003620	6W PEARL-LUX/WARM WHITE	12	0.65	39.37	0.31	45°	83	2700	50000	10
6	1003621	6W PEARL-LUX/WHITE	12	0.65	39.37	0.31	45°	180	6500	50000	10
N/A	1003622	PEARL-LUX STRAIGHT CHANNEL	N/A	0.43	38.19	0.79	N/A	N/A	N/A	N/A	10
N/A	1003623	PEARL-LUX FLEXIBLE CHANNEL	N/A	0.43	38.19	0.49	N/A	N/A	N/A	N/A	10
N/A	1003643	PEARL-LUX STR. ALUM. CHANNEL	N/A	0.43	39.37	0.79	N/A	N/A	N/A	N/A	10
N/A	1003644	PEARL-LUX FLEX ALUM. CHANNEL	N/A	0.43	39.37	0.79	N/A	N/A	N/A	N/A	10
OPAL-LUX™ LED Strings, IP65 Rated											
6.6	1003720	6W OPAL-LUX/WARM WHITE	12	0.65	39.37	0.28	100°	74	3200	35000	100
6.6	1003719	6W OPAL-LUX/WHITE	12	0.65	39.37	0.28	100°	198	7000	35000	100

All dimensions shown in inches unless otherwise noted.



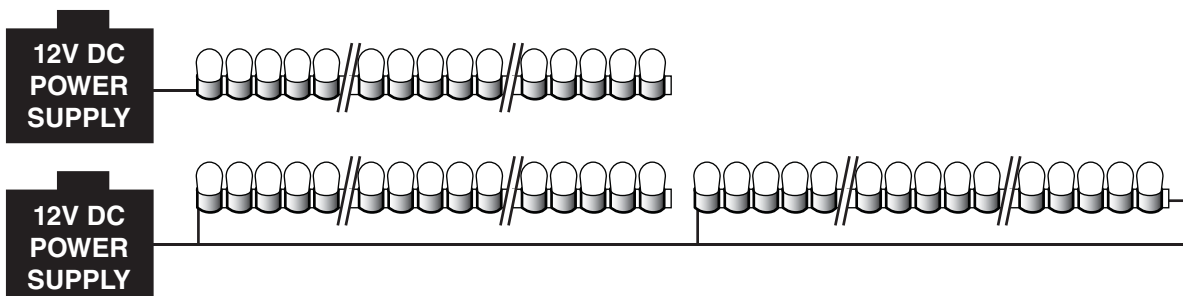
INSTALLATION INFORMATION:

Power Supply Information

1. The LED strings contain no protection against short circuits, overload or overheating. Therefore, it is absolutely necessary to operate the strings on an electrically stable power supply with protection against the above mentioned safety risks.
2. The LED strings require a 12V DC power supply. Each LED string has a maximum load rating of 6 watts for Pearl-Lux™ and 7 watts for Opal-Lux™.
3. Never operate an LED load in excess of the capacity of the power supply.

Electrical Connection

1. The LED strings are equipped with polarized wires. To ensure correct electrical polarity, connect the low voltage load side of the power supply to the LED strings. When finished you may use silicone, shrink tubing, electrical tape or a wire nut to properly manage and protect the contact. Incorrect electrical polarity may destroy the strings.
2. Up to 3 LED strings can be connected in series to a single power supply connection. For large installations you may connect multiple (3 string sets) in parallel.



U-LED™ SERIES

- Innovative LED Filament Design
- Long Life 40,000 Hours Average Rated Life
- No UV, IR or Mercury
- Lead Free

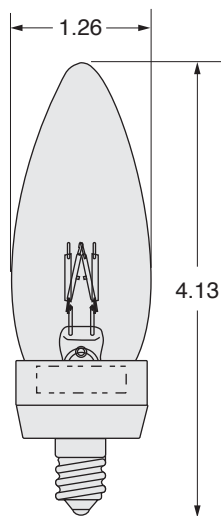
- Resembles a Decorative Incandescent Lamp

Please See Safety & Handling Instructions on Page 92.



Watts	Ushio	Ushio	Volts V	Dimensions		Lumens lm	Color	Avg	Burn	Case
	Ordering	Lamp		Dia	MOL		Temp	Life	Position	Qty
	Code	Description		(in)	(in)		K	h		
U-LED™, Candelabra Base – E12										
0.6	1003701	U-LED Candle	120	1.26	4.13	36	2700	40000	Univ	50

All dimensions shown in inches unless otherwise noted.



E12

DLS & FLS LED SYSTEM Engineered Lighting Solutions

- Energy-Savings
- Dimmable
- Long Life
- Waterproof
- Low Voltage

Please See Safety & Handling Instructions on Page 92.

Watts	Ushio Ordering Code	Ushio Lamp Description	Luminous Intensity (lm) @ 350mA	Forward Voltage	Max DC Forward Current	Color Temp K	Color Spectrum	CRI	Case Qty
DLS LED									
3.3	1003731	Direct LED Light Engine/White	139	3.3V @ 1000mA	1500mA	6500	—	75	1
1.6	1003732	Direct LED Light Engine/Red	45.7	2.3V @ 700mA	700mA	—	620-630nm	—	1
3.5	1003733	Direct LED Light Engine/Blue	30.6	3.5V @ 1000mA	1000mA	—	465-480nm	—	1
3.8	1003734	Direct LED Light Engine/Green	93.9	3.8V @ 1000mA	1000mA	—	520-535nm	—	1
FLS LED									
3.3	1003727	Fiber LED Light Engine/White	139	3.3V @ 1000mA	1500mA	6500	—	75	1
3.3	1003783	Fiber LED Light Engine/Warm White	114	3.3V @ 1000mA	1500mA	3000	—	80	1
1.6	1003728	Fiber LED Light Engine/Red	45.7	2.3V @ 700mA	700mA	—	620-630nm	—	1
3.5	1003729	Fiber LED Light Engine/Blue	30.6	3.5V @ 1000mA	1000mA	—	465-480nm	—	1
3.8	1003730	Fiber LED Light Engine/Green	93.9	3.8V @ 1000mA	1000mA	—	520-535nm	—	1
N/A	1003773	Fiber LED 10mm Fiber Cable/SS400 (Cut to size and sold by linear foot)							
N/A	1003782	Fiber LED 10mm Fiber Cable/SS10 (Cut to size and sold by linear foot)							
N/A	1003740	Fiber LED 10mm Fiber-Optic Cable Cap							1
N/A	1003741	Fiber LED Reflective Material Sheet (23.62"W X 59.05"H)							1
N/A	1003742	Fiber LED Reflective White Optic Sheet (Cut to size and sold by linear feet)							1
Power Supplies for DLS & FLS									
N/A	1003735	20W 700mA Low Volt Power Supply							1
N/A	1003736	20W 1000mA Low Volt Power Supply							1
N/A	1003737	25W 700mA Low Volt Power Supply							1
N/A	1003738	25W 1040mA Low Volt Power Supply							1

Lumen Maintenance 70% @ 50,000 Hours (@350mA)

Fiber Length: The usable length of fiber optic cable depends upon the application, color and driver current.

Fiber Diameter: 10mm

Engine Dimensions: 2.25" Wide; 1.5" Height; 1.6" Deep
Module Weight 45g (1.6 oz.)

Max Junction Temperature 150°C

Certifications: RoHS Compliant; UL List for damp & wet locations

Power Supply: 12-36V Constant current drivers (class 2)

Fastening: Mechanical or adhesive

FLS LED



DLS LED



AC (Alternating Current): Electrical current in which the direction is reversed at regular intervals or cycles; in the U.S. the standard is 120 reversals or 60 cycles per second.

Ampere: (Amps): The SI unit measuring the intensity of electrical current flow.

American National Standards Institute (ANSI): The organization that coordinates voluntary guidelines and standards for the electrical and other industries.

ANSI Binning: The system defined by the American National Standards Institute for the binning specifications for light emitting diodes.

Arc Gap: The distance measured between the electrodes of an arc discharge lamp (HID lamp).

Ballast: A device used to provide the starting voltage and regulate the current to discharge lamps, including Fluorescent, Metal Halide, and High Pressure Sodium.

Ballast Factor: The percentage of rated lumens from the same lamp using a commercial ballast as compared to an ANSI reference ballast. A ballast factor of .94 means the commercial ballast produces 94% of light produced by an ANSI reference ballast operating same lamp. The ballast factor can be referred to in the catalogs from Fluorescent ballast manufacturers.

Base: The physical end of the lamp that inserts into the lamp socket or holder.

Beam Angle (Spread): The central part of the beam of light from a reflector lamp (i.e. BR, MR and PAR types) where the intensity is 50% of the maximum candle power.

Bin (Binning): The systematic dividing of distribution of performance parameters (Flux, Wavelength or CCT, and Vf) in to small finite groupings that may be selected to optimize assembly performance.

Burn Position: The position in which lamps are designed to be operated. Often designated by the position of the lamp base. BU = Base Up, Horiz = Horizontal.

Candela (cd): The measuring unit of luminous intensity of a light source in a given direction. A light source may have different intensities depending upon the given direction which the measurement is taken. The old measurement equated to the amount of light produced by a standard candle.

Candle Power (cp): Luminous intensity expressed in candelas. Typically used in measuring the luminous intensity distribution of a reflector lamp or lighting fixture.

Case Temperature: The temperature measured at the LED package or case.

Center Beam Candle Power (CBCP): The intensity of light produced at the center of a reflector's beam, expressed in candelas.

Chromaticity of a Color: The quality of color that includes its dominant or complementary wavelength, purity, hue, and saturation. Independent of luminance or brightness.

CRI (Color Rendering Index): An index from 0-100 measuring a light source's ability to render color accurately. Sodium lamps can have a CRI as low as 22, while tungsten Halogen lamps can have a CRI as high as 100. Any lamps rated above 80 CRI tend to be of good color rendering.

Correlated Color Temperature: A scientific measurement of the balance of wavelengths making up any "white" light. The unit of measurement is in Kelvin(K) which determines the warm or cool appearance of a light source. The lower the color temperature, the warmer or more yellow is the appearance. The higher the color temperature, the cooler or bluer is the appearance. Typical color temperatures are 2800K for incandescent, 3000K for Halogen, 4200K Cool White Fluorescent, and 5000K daylight Fluorescent and Metal Halide.

Compact Fluorescent Lamp (CFL): The standard term given to small diameter Fluorescent lamps, some of which have built-in ballasts and medium screw bases for replacement of incandescent lamps.

Current: A measure of the rate of flow of electricity, expressed in amperes.

Daylight: Generally defined as having a correlated color temperature of 6000K or higher.

DC (Direct Current): A type of electrical current and distribution by which electricity flows in one direction through the conductor. Battery operated systems are typical DC applications.

Dichroic: "Two Color"; Often referred to in lighting as the dichroic coating applied to glass filters and glass reflectors to change or control the color of light passing through the lighting fixture or lamp.

Die: Also known as Chip: the active light emitting semiconductor compound.

Dimmable: A lamp that has varying lumen output controlled by dimming device.

Dimmer: An electronic device used to vary the lumen output of a lamp.

Discharge Lamp: See High Intensity Discharge Lamp.

Efficacy: The measured effectiveness at which lamps convert power (measured in watts) into light (measured in lumens). Also see Lumens Per Watt.

Ellipsoidal Reflector: A reflector designed to converge light so that the beam is focused to a single point. This often results in the reduction of light trapped within a lighting fixture.

Energy Policy Act (EPACT): Energy legislation passed in 1992 by the U.S. Congress. The law involves a variety of different industries including lighting. The lighting section of the legislation covers lamp labeling and minimum energy efficiency standards (lumens/watt) for many commonly used lamps including incandescent and Fluorescent sources.

Filament: A tungsten wire that when heated electrically generates radiation in the visible, infrared and ultraviolet ranges.

Fluorescent Lamp: A low-pressure mercury discharge lamp in which an electric discharge of ultraviolet energy excites a coating of phosphor on the lamp glass and transforms some of that energy to visible light. Fluorescent lamps are manufactured in many different forms including linear four foot T8 lamps, U-shaped and Coiled Compact Fluorescent lamps with integrated ballasts. Fluorescent lamps typically require a matching ballast to operate the lamp properly.

Footcandle (fc): A unit of illuminance. One footcandle is equal to 1 lumen per square foot (lmft²); see Lux. A lighting designer would use a measure of footcandles at the work surface to determine the proper illumination level for office lighting.

Frequency: The number of times per second that an alternating current system reverses from positive to negative and back to positive, expressed in hertz (Hz).

Halogen Lamp: A higher pressure, high temperature incandescent lamp containing Halogen gas that recycles tungsten back onto the filament surface. The Halogen cycle allows for higher efficacy, higher color temperature, and longer life cycles than incandescent lamps.

Heat Sink: A part of the thermal system that conducts or disperses heat away from sensitive components, such as LEDs and electronics.

Hertz (Hz): A unit of frequency equal to one cycle per second (see frequency). The U.S. standard is 60 Hz.

High Intensity Discharge Lamp (HID): A high pressure lamp in which high intensity light is produced by an electrical arc source. General terminology for Mercury lamps, Metal Halide lamps, High Pressure Sodium lamps, High Pressure Xenon lamps, or any other high intensity arc discharge source.

Hue: The attribute of colors that permits them to be classed as red, yellow, green, blue or an intermediate between any contiguous pair of these colors.

Ignitor: A ballast component that produces enough voltage to cause the initial arc to form across electrodes in HID lamps.

Illuminance: The concentration of luminous flux on a surface. Measured in Lux (lx) or Footcandles (fc).

Incandescent Lamp: A lamp that provides light when a filament, surrounded by inert gas, is heated to incandescence by an electric current.

Inrush Current: The current generated during the initial start up of a lamp system. Inrush current can be several times higher than the operating current of a lamp.

Instant Start: A type of Fluorescent lamp ballast that applies high voltage across the lamp with no preheating of the cathode.

Junction Temperature: Junction temperature, noted as T_j, is the temperature of the LED's active region.

Kelvin: a unit of color temperature measurement. (see Correlated Color Temperature).

Kilowatt (kW): A measure of electrical power equal to 1000 watts.

Kilowatt Hour (kW/hr): 1000 watts of electricity used for one hour. A unit of measure that utility companies utilize for billing purposes.

LCL (Light Center Length): The distance between the center of the filament or arc tube and the reference plane (usually the bottom of the lamp base).

LED (Light Emitting Diode): A solid state lighting device.

LED Array: An assembly of LED packages or dies on a printed circuit board or substrate, possibly with optical elements and additional thermal, mechanical, and electrical interfaces that are intended to connect to the load side of an LED driver.

LED Chip (Chip): The light producing semiconductor device that may or may not be incorporated into an LED.

LED Driver: An electronic circuit that converts input power into a current source — a source in which current remains constant despite fluctuations in voltage. An LED driver protects LEDs from normal voltage fluctuations, over voltages, and voltage spikes.

Life, Average Rated: Average life is a value for life expectancy based on laboratory tests using controlled system characteristics measured in hours where 50% are still operating.

Light Emitting Diode (LED): A Light Emitting Diode (LED) is a solid-state semiconductor device that converts electrical energy directly into light. On its most basic level, the semiconductor is comprised of two regions. The p-region contains positive electrical charges while the n-region contains negative electrical charges. When voltage is applied and current begins to flow, the electrons move across the n region into the p region. The process of an electron moving through the p-n junction releases energy. The dispersion of this energy produces photons with visible wavelengths.

Lumens: The international unit of measurement for light. A measurement of total quantity of light output from an electric lamp in all directions for a given unit of time.

Lumens, Initial: Quantity of light output measured after 100 hours of operation using controlled system characteristics.

Lumens, Mean: Average quantity of light output over the life of the lamp. High Pressure Sodium and Incandescent lamps are measured for mean lumens at 50% of lamp life. Fluorescent and Metal Halide lamps are measured for mean lumens at 40% of rated lamp life.

Lumens Per Watt (LPW, Lm/W): Efficacy; Lumen output divided by lamp watts consumed.

Lumen Depreciation: The decrease in lumen output of a light source over time, until failure.

Luminance: Photometric brightness, luminance is a measure of the flux emitted from, or reflected by, a relatively flat and uniform surface. Luminance may be thought of as luminous intensity per unit area. Candelas per square meter (cd/m²).

Luminous Intensity: See Candela (cd).

Lux (lx): An international metric unit of luminance. One lux is equal to 1 lumen per square meter (see footcandle). 1 lx = 1 lumen per square meter (lm/m²).

Metal Halide Lamp: A member of the high intensity discharge light source family. The light from this source is produced by the radiation from mercury, together with halides of metals such as sodium, scandium, indium and dysprosium. Metal Halide light sources typically require a matching ballast to operate the lamp properly. Metal Halide lamps are available in single-ended and double-ended varieties. Lamp design varies from tubular to elliptical shapes.

MOL (Maximum Overall Length): The end-to-end measurement of a lamp.

MR-16: Mirrored reflector lamp with a 16/8 inch diameter. Most MR-16 lamps are made up of a Halogen capsule surrounded by a dichroic coated reflector. Alignment of the filament within the reflector is critical to creating a precision beam. Smaller diameter lamps include MR-11 and MR-8.

Nanometer (nm): A unit of length equal to 10^{-9} meter. It is the preferred unit of measure for light in the visible and ultraviolet regions of the energy spectrum.

NEMA: National Electrical Manufacturers Association.

Neodymium: A rare earth metal used in reflector and glass coatings to help reduce the yellow light emitted by the lamp.

Ohms Law: Volts x Amps = Watts

Operating Current: Steady state current consumed by a lamp at rated watts.

Operating Position: See burn position.

Organic Light-emitting Diodes (OLED): Organic light-emitting diodes (OLEDs) are based on organic (carbon based) materials. In contrast to LEDs, which are small point sources, OLEDs are made in sheets which provide a diffuse area light source. OLED technology is used in display applications such as cell phones and PDA screens.

P-N Junction: An area on an LED chip where the positively and negatively charged regions meet. When current is applied, the electrons move across the n region into the p region. The process of an electron moving through the p-n junction releases energy. The dispersion of this energy produces photons with visible wavelengths. In short, the area on a chip where light is produced.

PAR (Parabolic Aluminized Reflector): A type of Halogen lamp made up of an aluminum coated parabolic glass reflector that controls its light beam by either the reflector or front glass.

Parabolic Reflector: A smooth surfaced, curved reflector formed in the shape of a parabola which focuses all the light at the focal point to create a parallel beam.

Phosphor: An inorganic chemical compound processed into a powder and deposited on the inner glass surface of certain discharge lamps. Phosphors absorb short wavelength ultraviolet radiation, transforms it and emits it as visible light.

Power Factor (PF): A measure of the effectiveness of which an electrical device converts amperes to watts. Power factors can range from 0 to 1.0. A high power factor means that an electrical system is utilizing power efficiently. Devices with power factors of greater than 0.90 are considered "high power factor."

Preheat: A fluorescent lamp type that requires a starter, which enables the electrodes to be properly heated before allowing the ballast to supply the correct current flow.

Programmed Rapid Start: A fluorescent lamp starting method where the cathodes are heated prior to lamp ignition, then the heat is removed or reduced once the lamp has started.

Rapid Start: A type of Fluorescent ballast that applies a low filament voltage to preheat the cathodes. Simultaneously, a starting voltage (lower than that used in instant start ballasts) is also applied to strike the arc. When the cathodes are hot enough the lamp will strike.

Remote Phosphor: A phosphor conversion technique in which photons from a royal blue LED pass through a phosphor material that is not attached to the LED chip.

SMDs: Surface-mount LEDs.

Spectral Distribution: The distribution and intensity of spectral energy of a lamp. Concerning the lighting industry, the UV, visible and IR regions are most important. Visible and UV light are most often measured in nanometers while IR light is most often measured in micrometers.

TCLP Test (Toxicity Characteristic Leaching Procedure): Federal EPA regulations (RCRA of 1990) have defined this test to determine whether wastes are to be treated as hazardous or non-hazardous. The TCLP test measures the ability of the mercury in a lamp to leach from a landfill into groundwater.

Total Harmonic Distortion (THD): A measure of the distortion of an electrical wave form. THD is expressed in percent and may refer to individual electrical loads (such as a ballast). The ANSI recommendation is for THD to be no greater than 32%.

Transformer: An electrical device used to raise or lower the voltage of alternating current.

Trigger Start: A circuit used to eliminate the starter and start the preheat lamp almost instantly. In this circuit each electrode is connected to a separate winding in the ballast so the electrode is continuously heated.

Tungsten: A heavy metal used in wire filaments and electrodes. Also known as Wolfram.

Ultraviolet (UV): The portion of the electromagnetic spectrum in which the longest wavelength is just below the visible spectrum, extending from approximately 4nm to approximately 400nm.

Voltage: The force or the pressure of electricity. For incandescent and Halogen lamps, voltage generally refers to the line voltage of which the lamp should be connected. For HID, Fluorescent, and Low-Voltage lamps, the voltage generally refers to the operating voltage which the lamp is connected to a power supply (ballast or transformer) after it has warmed up.

Watt: A unit of electrical power used to indicate power consumption.

Wavelength: Distance between two successive points of a periodic wave. The wavelengths of light are typically expressed in nanometers (nm), or billionths of a meter.

Xenon, Low Pressure: A filament lamp in which Xenon gas is contained in a quartz capsule with a low pressure atmosphere. This includes Xenon Wedge-Base, Festoon, and Bi-pin type lamps. Xenon is a heavy, colorless, chemically inactive, monatomic gaseous element.

Xenon, High Pressure: A short-arc discharge lamp which Xenon gas is contained in a hard glass or special quartz capsule with a high pressure atmosphere. This includes lamps used for searchlight, followspots, and medical applications. Xenon is a heavy, colorless, chemically inactive, monatomic gaseous element.

TUNGSTEN HALOGEN AND INCANDESCENT LAMPS

- DANGER! Halogen lamps operate at extremely high temperatures that can cause serious physical injuries and property damage.
- Only use Halogen lamps in Halogen-approved fixtures. Fixtures should fully contain any parts of the Halogen lamp upon the event of a lamp burst.
- Do not use Halogen lamps in close proximity of paper, cloth or other combustible materials that can cause a fire hazard.
- Lamps are very fragile. Do not drop, crush, bend or shake them. Vibration or impact will cause filament breakage and short lamp life.
- Do not touch the Halogen bulb surface or inside reflectors with your bare hands. Oils from skin can lead to breakage or shorten the life of the lamp. Use clean gloves or lint-free cloth for installation and removal.
- Clean any dirt, oil, or lint away from the lamp with alcohol and a lint-free cloth or tissue. Any foreign particles or materials on the bulb surface can cause hot spots on the bulb and result in lamp failure.
- Never touch the lamp when it is on, or soon after it has been turned off, as it is hot and may cause serious burns.
- Do not look directly at the operating lamp for any period of time; this may cause serious eye injury.
- Always turn off the electrical power before inserting, removing, or cleaning the lamp.
- Affix the lamp securely in the socket. Improper installations will cause electrical arcing, overheating and short life to lamp and socket. Replace lamp holders and sockets when necessary.
- Keep the temperature of the Halogen lamp seal below 350° C.
- Keep the temperature of the Halogen bulb wall above 250° C.
- Keep the temperature of the Halogen lamp bulb wall below 800° C.
- Make sure lamps of specified wattage and voltage are only used in appropriately rated fixtures. Unspecified use will lead to short lamp life, breakage and overheating of fixture.
- Lamps should not be operated beyond the total rated voltage. Avoid the use of dimmers that may drive your lamp over its rated voltage.
- Operate the lamp only in the indicated burn position. Failure to do so will lead to overheating and shortened lamp life.
- Use an external fuse when required.
- Do not allow one lamp to directly expose another. This may lead to overheating and shortened lamp life.

FLUORESCENT LAMPS

- Fluorescent lamps operate at high surface temperatures that can cause serious physical injuries. Turn power off and allow adequate time (approximately 10 minutes) for the lamp to cool before attempting replacement.
- In order to avoid the risk of electrical shock, make sure the power to the fixture is turned off when replacing a lamp.
- Lamps are very fragile. Do not drop, crush, bend or shake them. Fluorescent tubes may shatter with considerable force when broken.
- To ensure that the lamps remain in the sockets for the duration of the operation, make sure that the fixture's sockets are not worn prior to installation of the lamps. If the lamps are installed in worn sockets, the lamps could fall out of the fixture during operation.
- Never operate a lamp above or below its rated current voltage.
- Electrical connections should be clean and in good condition. Replace lamp holders and sockets when needed. Affix the lamp securely in the socket. Improper installations will cause electrical arcing, overheating and short life to the lamp and socket.
- Do not look directly at the operating lamp for any period of time; this may cause serious eye injury.
- Fluorescent lamp use is not recommended in extreme weather conditions. Excessive cold/warm temperatures dramatically affect starting, lamp life and lumen maintenance.
- There is a NEMA recognized industry issue where T2, T4 and T5 fluorescent and compact fluorescent lamps when operated on high frequency electronic ballasts may experience abnormal end-of-life phenomenon. This end-of-life failure can result in the bulb wall cracking near the base of the lamp, or the lamp overheating in the base location and possibly melting the base and/or the socket. NEMA recommends that if high frequency electronic ballasts are used that the ballast has an internal end-of-life protection circuit that will safely and reliably shut down the system in the rare event of a end-of-life failure as described above. For additional information please refer to NEMA papers on their website www.nema.org.
- USHIO's Coilight lamps are suitable for indoor and outdoor use in non-severe temperature climates. Outdoor use of these lamps does require a weather-protected fixture.
- USHIO's Coilight lamps comply with part 18 of the FCC rules. These lamps may cause interference with AM radios, cordless phones and remote control devices. Interference may be caused after a brief 90-second lamp warm-up period. If interference continues, relocate the lamp away from the device or plug into a different outlet.

METAL HALIDE & HIGH PRESSURE SODIUM DISCHARGE LAMPS

- **ANSI Type E = Enclosed Fixture Required**
Lamps that are enclosed fixture rated should only be operated in an enclosed fixture that safely contains all lamp parts in the event of a lamp burst or rupture. These lamps operate at a high internal pressure and at high temperatures which can emit harmful ultraviolet light if the outer glass bulb is broken. A lamp may burst causing physical injury and property damage unless protective safety glass is used with the fixture. Use fixture that meets requirements per UL standard #1572.
- **ANSI Type O = Open Fixture Rated**
Lamps that are open fixture rated are suitable for operation in open fixture designs. These types of lamps typically feature UV protective quartz and a secondary shroud surrounding the arc tube to prevent the scatter of glass in the event of a burst.
- Metal Halide discharge lamps can emit ultraviolet radiation that may be harmful to eyes and skin. Metal Halide discharge lamps that are not open fixture rated, should only be used in enclosed fixtures with ultraviolet absorbing filter glass. Do not operate these lamps if the ultraviolet absorbing filter glass is broken or not installed.
- Metal Halide and High Pressure Sodium discharge lamps should only be operated with the compatible ballast, rated fixture (open/closed, wattage), and socket. (See lamp specification page for ballast information.) PulseStrike™ pulse start Metal Halide lamps require a 4000 volt pulse rated socket. High Pressure Sodium lamps require a 4000 volt pulse rated socket.
- Only operate the lamp in its designated operating position. (See lamp specification page for lamp operation position)
- Metal Halide lamps should be turned off for a minimum of 15 minutes per week.
- Lamps should never be operated beyond their rated useful life. The risk of a lamp burst increases with lamp age, temperature, improper operation and improper handling. Replace the lamp at or before the end of its rated life. Group relamping is always recommended.
- Never bump, drop, apply excessive stress, or scratch the lamp. This could cause the lamp to burst! Do not operate any lamps with any traces of scratches, cracks, or physical damage.
- Never operate a lamp above or below its rated current or voltage. This may cause the lamp to leak or burst.
- Always turn off the electrical power before inserting, removing, or cleaning the lamp.
- Clean any dirt, oil, or lint away from the lamp with alcohol and a lint-free cloth or tissue. Dirt or other contaminants will affect light output and may cause the lamp to overheat and decrease lamp life.
- Electrical connections should be clean and in good condition. Replace lamp holders and sockets when needed. Affix the lamp securely in the socket. Improper installations will cause electrical arcing, overheating and short life to lamp and socket.
- Never touch the lamp when it is on, or soon after it has been turned off, as it is hot and will cause serious burns. Lamps should be allowed to cool for a minimum of ten (10) minutes after the lamp is turned off.
- Do not use lamp in close proximity of paper, cloth or other combustible material that can cause a fire hazard.
- Do not look directly at the operating lamp for any period of time; this may cause serious eye injury.

(Hg) - CONTAINS MERCURY. Manage in Accord with Disposal Laws

Metal Halide, Fluorescent and High Pressure Sodium discharge lamps contain Mercury. USHIO realizes the importance of lamp recycling and we encourage all lamps to be properly disposed of in order to help preserve the environment and our Earth's precious natural resources. Please refer to your local environmental laws regarding disposal and recycling of Mercury containing lamps. To learn more about lamp recycling requirements in your area, you can contact your state environmental authorities or visit www.lamprecycle.org.

R - NON SELF-EXTINGUISHING LAMP

WARNING: This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available. Complies with the USA Federal Standard 21 CFR 1040.30 and Canada Standard SOR/80-381.

REFERS TO AQUALITE™ METAL HALIDE LAMPS ONLY**R - NON SELF-EXTINGUISHING LAMP**

WARNING: This lamp can cause serious skin burn and eye inflammation from shortwave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Complies with the USA Federal Standard 21 CFR 1040.30 and Canada Standard SOR/80-381.

LED SOLID STATE LAMPS

Please consider the following as to what is the proper use of the Synergie™ LED MR-16:

FIXTURE & TRANSFORMER COMPATIBILITY

Three types of low-voltage power systems are used with traditional MR-16 lamps: Regulated DC, magnetic, and electronic. Please be aware of the following when selecting the appropriate transformer for use with Synergie™ LED MR-16.

- **REGULATED 12V DC:** The unit works best with regulated 12V DC power.
- **MAGNETIC (Standard iron core transformers):** The unit is compatible with all types of AC magnetic transformers used with 12V lighting.
- **ELECTRONIC:** The unit is not compatible with some electronic transformers due to its low power consumption of less than 5 watts. Most electronic transformers require a minimum load greater than 5 watts in order to function properly. This is especially true of lighting fixtures that have an integral transformer for each fixture. Accordingly, the Synergie™ LED MR-16 is not designed to work with these types of integral electronic AC transformers. Installing the Synergie™ LED MR-16 on an integral electronic transformer voids the warranty.

An electrician should confirm that the voltage on the line is 12 volts. Do not exceed 12.5 volts. The power consumption of the lamp on a circuit should not exceed the rated power consumption of the transformer. Failure to ensure this will void the warranty.

Please consider the following as to what is the proper use of the Pearl-Lux™ LED strings:

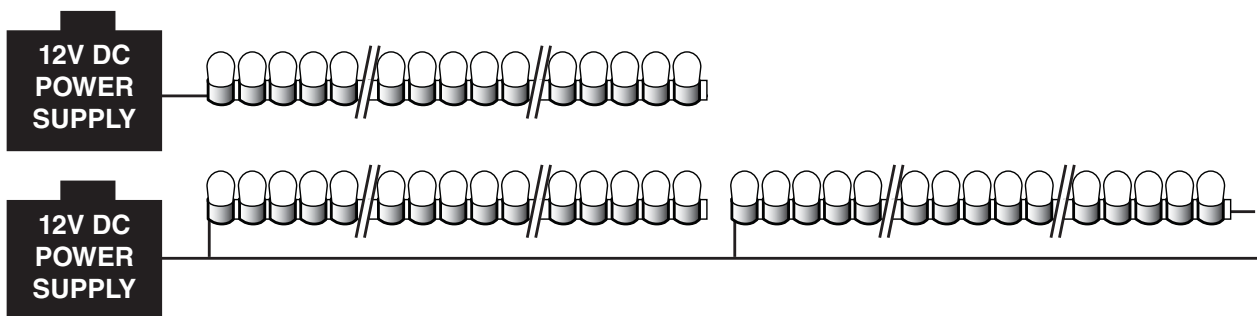
INSTALLATION INFORMATION

Power Supply Information

- The LED strings contain no protection against short circuits, overload or overheating. Therefore, it is absolutely necessary to operate the strings on an electrically stable power supply with protection against the above mentioned safety risks.
- The Pearl-Lux™ LED strings require a 12V DC power supply. Each LED string has a maximum load rating of 6 watts.
- Never operate an LED load in excess of the capacity of the power supply.

Electrical Connection

- Pearl-Lux™ LED strings are equipped with polarized wires (red – positive, black – negative). To ensure correct electrical polarity, connect the low voltage load side of the power supply to the LED strings. When finished you may use silicone, shrink tubing, electrical tape or a wire nut to properly manage and protect the contact. Incorrect electrical polarity may destroy the strings.
- Up to 3 LED strings can be connected in series to a single power supply connection. For large installations you may connect multiple (3 string sets) in parallel.



The specifications in this publication supercede all previously published specifications and may be subject to change for design and specification improvement without prior notice.

COLOR TEMPERATURE – Each light source has a unique color temperature that sets the appearance for the environment in which it is used. The actual color of the light that is given off from the source is represented in Kelvin and referred to as Correlated Color Temperature (CCT). A lamp can have a warm, midrange or cool appearance depending on its color temperature. These different color temperatures can set a mood, create an environment, improve a person's disposition, influence a person's buying habits and has even been known to affect a person's appetite.

"Warm" light sources have a lower color temperature, usually in the 2500K-3000K range. These lamps produce more light in the red/orange/yellow spectrum. As the color temperature of a lamp increases the lamps appearance becomes "cooler." As the lamp's color temperature increases so does the amount of light produced in the blue end of the spectrum.

USHIO America, Inc. offers lamps in a wide variety of color temperatures to suit the needs of most users and to create the best environment possible.

Color Temperature	Common Color Description	Typical Applications
2700K - 3400K	Warm; Warm White	Specialty Retailers, Restaurants, Hotel Lobbies, Residential
3500K	Neutral; Neutral White	Grocery Stores & Produce Markets, Retail Stores, Bank Lobbies
4100K	Cool; Cool White	Offices, Manufacturing, Schools, Hospitals
5000K - 6500K	Daylight; Daylight Plus; Full Spectrum	Printers, Paint Studios, Art Galleries, Car Dealerships

COLOR RENDERING INDEX – An object on display can take on many different appearances depending on the light source that is illuminating it. A lamp has the ability to render an object's colors differently dependent upon the color rendering index properties of the lamp. Color Rendering Index (CRI) is measured on a scale from 0 to 100. The higher the CRI value, the more natural the colors will appear. Objects displayed under lamps with high CRI (usually 80+ CRI) look more appealing to the eye. This is why merchandise in retail stores is predominately lit using high CRI light sources such as the Halogen PAR lamps.

Applications	CRI Range	Color Rendering Properties
Art Galleries	90–100	Excellent
Banks	70–80	Good
Car Dealerships	70–80	Good
Classrooms	70–80	Good
Grocery Stores	70–90	Good – Very Good
Hospitals	70–90	Good – Very Good
Manufacturing Areas	70–80	Good
Offices	70–80	Good
Parking Lot Lighting	<60–70	Poor
Printing Companies	90–100	Excellent
Restaurants	80–90	Good – Very Good
Retail Stores	80–100	Very Good – Excellent
Roadway Lighting	<60–70	Poor
Security Lighting	70–80	Good
Sporting Arenas	70–80	Good
Warehouses	<60–70	Poor

LONG LIFE – Rising maintenance costs over the years has renewed an interest in lamp longevity. In one recent study it was said that 11% to the average customer's lighting dollar goes towards covering the maintenance expenses associated with lamp changes.

USHIO America, Inc. believes in extending lamp life whenever possible while minimizing or eliminating the trade-offs commonly associated with long life lamps (i.e. reduced lumen output). USHIO has many unique products that offer additional operating hours gained by the user (see the list below).

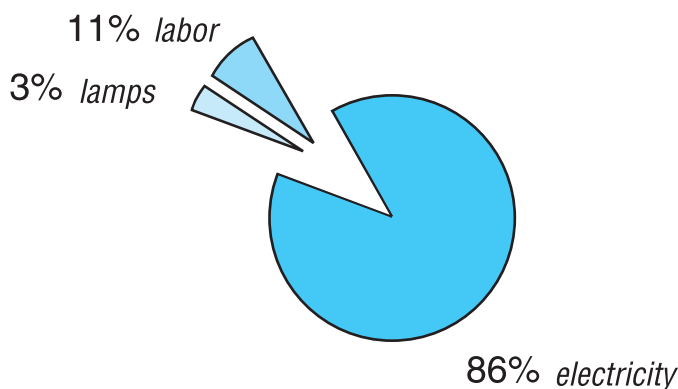
USHIO Long Life Products	USHIO Lamp Life In Hours	Competitors Lamp Life In Hours	Hours Gained
Ultra Service™ Sign Lamps	20,000	5,000	15,000
Ultraline™ MR-16 Lamps	10,000	5,000	5,000
Ultraline™ Titan MR-16 Lamps	18,000	5,000	13,000
Ultra 8™ T8 Fluorescent Lamps	30,000	20,000	10,000
Coilight™ Compact Fluorescent Lamps	12,500	10,000	2,000

ENERGY SAVINGS – These days, energy in the form of electricity is by far the largest portion of a users lighting expense. Over the lifetime of a lighting system, the electricity to operate the system will represent about 86% of the total costs. Obviously, if a user can reduce their energy consumption, they will reduce their costs.

The annual cost of a lighting system can be broken down into three areas (see pie chart):

1. The initial purchase costs of the lamps (3%).
2. The cost of the electricity to operate the lamps (86%).
3. The costs of labor to replace the lamps (11%).

USHIO America, Inc. understands the need for energy efficient lighting products that produce nearly the same light output (lumens) as their conventional counterparts, but consume considerably less energy doing so.



ANNUAL ENERGY COST CALCULATION WORKSHEET –

Step 1. Calculate the total kilowatts saved by replacing the inefficient lamps with more efficient lamps

Original Lamp Wattage	Replacement Lamp Wattage	Watts Saved per Lamp	# of Lamps to Replace	Total Watts Saved	Total Kilowatts Saved
W	W	W	lamps	W	kW

$$\text{Original Lamp Wattage} - \text{Replacement Lamp Wattage} = \text{Watts Saved per Lamp} \times \text{\# of Lamps to Replace} = \text{Total Watts Saved} \div 1000 = \text{Total Kilowatts Saved}$$

Step 2. Calculate the total kWh per year saved by this upgrade

Total Kilowatts Saved	Hours Used per Day	Days Used per Week	Weeks Used per Year	Total kWh Saved per Year
kW	hrs/day	days/wk	wks/yr	kWh/yr

$$\text{Total Kilowatts Saved} \times \text{Hours Used per Day} \times \text{Days Used per Week} \times \text{Weeks Used per Year} = \text{Total kWh Saved per Year}$$

Step 3. Calculate the total energy costs saved per year by this upgrade:

Total Kilowatts Saved per Year	Your Energy Cost per kWh (typically \$0.10)	Total Energy Cost Savings per Year
kWh/yr	\$	\$

$$\text{Total Kilowatts Saved per Year} \times \text{Your Energy Cost per kWh} = \text{Total Energy Cost Savings per Year}$$

Step 4. Compute the payback of the upgrade:

Initial Cost of Lighting Upgrade	Total Energy Cost Savings per Year	# of Years for Payback on Investment
		years

$$\text{Initial Cost of Lighting Upgrade} \div \text{Total Energy Cost Savings per Year} = \text{\# of Years for Payback on Investment}$$

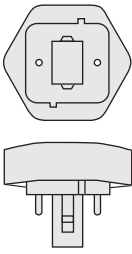
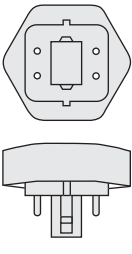
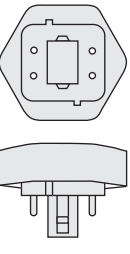
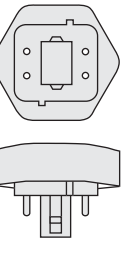
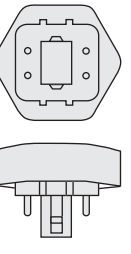
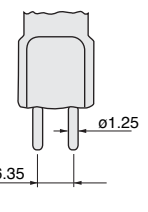
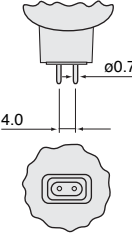
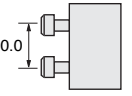
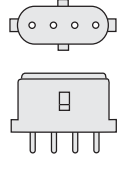
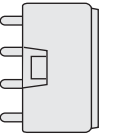
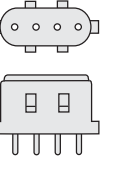
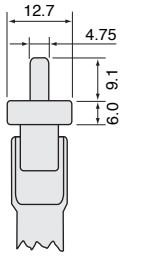
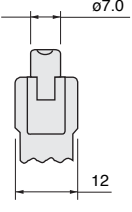
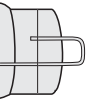
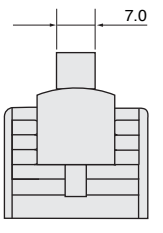
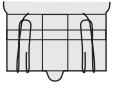
For Fluorescent or PulseStrike™ Metal Halide lamps, be sure to use the total fixture wattage (which includes the new ballast wattage savings) to calculate your new true wattage savings.

LAMP SPECIFICATION ABBREVIATIONS

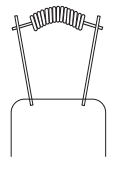
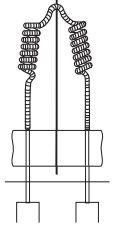
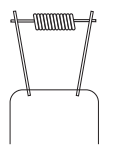
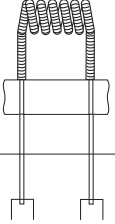
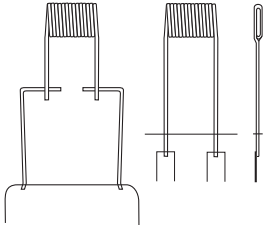
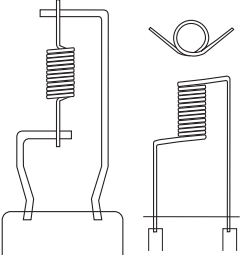
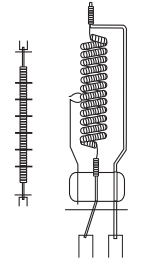
RATINGS		DIMENSIONS		BURN POSITION	
W	Watts	LL	Light Length (filament length)	BD	Base Down
V	Volts	LCL	Light Center Length	BD/Hor	Base Down to Horizontal
kV	kiloVolts	C-to-C	Contact to Contact	BU	Base Up
A	Amps	MOL	Maximum Overall Length	Horiz	Horizontal
h	hours	Dia	Diameter	H±4	Within ±4° of horizontal position
K	kelvin	max	Maximum	H±45	Within ±45° of horizontal position
lm	lumens	in	inches	H±60	Within ±60° of horizontal position
cd	candela	mm	millimeters	Univ	Universal 360° / Any Position
cp	candle power	All dimensions are approximate measurements in inches (in) unless otherwise noted			
nm	nanometers				
CRI	Color Rendering Index				

LAMP BASE TYPES

BA9s	BA15d	E11	E17	E26	E39/E40
EP39	EU11	EX39	Fc2 / Fc2/18	FESTOON	G4
G5	G6.35	G12	G13	G23	G23-2
G24d-2	G24d-3	G24q-1	G24q-2	G24q-3	GU4
GU5.3 / GX5.3	GU10	GX16d	GX23	GX23-2	GX24d-2

GX24d-3	GX24q-1	GX24q-2	GX24q-3	GX24q-4	GY6.35
					
GZ4	GZ10	2G7	2G11	2GX7	Pin Blade
					
		R7s-12	RIGID LOOP	RX7s / RX7s-24	WEDGE
					

LAMP FILAMENT TYPES

C-2R	CC-2V	C-6	CC-6	CBar6 (CF-6)	C8	CC-8
						

Sockets for Single and Double Ended Quartz Halogen Lamps

Order Code	Description	Lead Wire Specs	Volts	Amps	Lamp Type
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Sockets for Single Ended Halogen Lamps Miniature Bipin — 4.0mm Pin Spacing

GZ4 Base — 1.0mm Pin Diameter

1000109	C-14B	0.75X150L	24V	3A	JC
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Miniature 2-Pin (Blade) Base — 5.33mm Pin Spacing

G5.3-4.8 Base — 0.5mm x 4.8mm Pin Diameter

1000111	C-21	2.50X150L	125V	6A	JCR/M-50, 75, 10W
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2-Pin Base — 5.33mm Pin Spacing

GX5.3 or GU5.3 Base — 1.6mm Pin Diameter

1002142	C-33U	0.75X150L	24V	7A	MR-16, GU5.3
1000114	C-5	1.25X160L	125V	15A	JCD, MR-16
1000115	C-5(A)	1.25X300L	125V	15A	JCD, MR-16

G6.35 Base — 6.35mm Pin Spacing

G6.35 Base — 1.25mm Pin Diameter

1000681	J-11(A)	1.25X160L	125V	10A	JC, JCR
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Sockets for Single Ended Halogen Lamps Medium 2-Pin Base — 9.53mm Pin Spacing

G9.5 Base — 3.17mm Pin Diameter

1002225	3.15 Contacts for J-10 Socket		250V	10A	
1000679	J-10		250V	10A	JCD, JCV

Medium 2-Pin Prefocus Base — 9.53mm Pin Spacing

GY9.5 Base — 3.2mm, 2.4mm Pin Diameter

1000690	J-9G	3.17/2.36 w/o Lead	250V	10A	JCD
1003123	J-9G/4	W/4" UL Leadwire	250V	10A	JCD
1003124	J-9G/8	W/8" UL Leadwire	250V	10A	JCD

Minican Screw Base

E11 Base — 10.7mm Diameter Screw

1000683	J-12CS(A)	0.75X150L UL	125V	6A	JCV
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Sockets for Double Ended Halogen Lamps Recessed Single Contact Base

R7S Base — 7.0mm Base Diameter

1000117	C-8	2.00X150L	250V	10A	J, JP, JPD
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C-21



C-33U



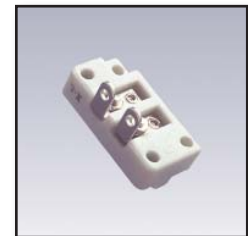
C-5



J-11 (A)



J-10



J-9G



J-12CS



C-8