

SECTION 2 *Photo/Projection*

FEATURES

- Precisely manufactured, tailored filaments to maximize source brightness and optimal performance in precision optical devices
- High light-generating efficiency of Quartzline® Halogen, for whiter light, lamp maintenance, and stable color temperature
- For use with prefocused bases or rim-referenced mounting Multi-Mirror® Reflectors

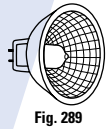
APPLICATIONS

- Audio Visual
- Optical Instruments
- Overhead/Slide Projectors
- Fiberoptics
- Microfilm Readers
- Medical/Dental Instruments
- Printers/Enlargers
- Scientific Instruments
- Photoflood

Quartzline® Multi-Mirror® Reflectors

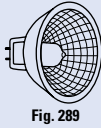
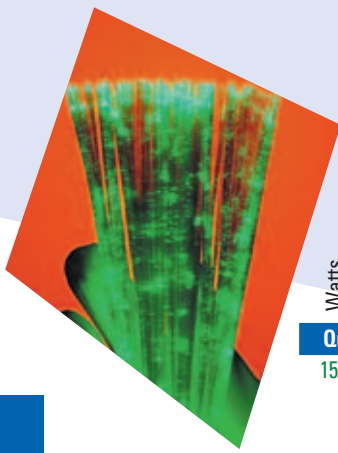
FEATURES

- Dichroic reflectors for cool light beam and efficient light reflection
- Precise rim reference to optimize target beam
- Faceted reflector for uniform screen image and precision beam control
- Working distance is from reflector rim surface to the film plane/target (see page 35)



Watts	Volts	Order Code	Description	Case Qty.	Bulb	Base	Filament Type	MOL (in)	Color Temp.	CBCP	Working Distance (in)	Life (hrs)	Burn Position	Application	Footnotes	Figure Number
Quartzline® Multi-Mirror® Reflectors – MR11																
28	13.8	31964	FLT	10	MR11	GZ4.2-Pin	CC-6	1.38	3050			500	HD	Microfilm	64	80
Quartzline® Multi-Mirror® Reflectors – MR13																
225	68	15832	EZF/EZJ UNIT	20	MR13	GX5.3.2-Pin	CC-8	1.75				350	HD	Color printer	3, 64	81
250	82	12097	EXY	20	MR13	GX5.3.2-Pin	CC-8	1.75	3200		6	200	HD	Slide projection	64	81
300	82	12092	EXR	20	MR13	GX5.3.2-Pin	CC-8	1.75	3350		6	35	HD	Slide projection	64	81
		12095	EXW	20	MR13	GX5.3.2-Pin	CC-8	1.75	3450		6	15	HD	Slide projection	64	81
		47614	FHS	20	MR13	GX5.3.2-Pin	CC-8	1.75	3300		6	70	HD	Slide projection	64	81
Quartzline® Multi-Mirror® Reflectors – MR16																
20	12	10933	BAB/PH	20	MR16	GX5.3.2-Pin	C-6	1.75	2900			4000	HD	Display	64	289
25	13.8	47914	FHX	20	MR16	GX5.3.2-Pin	CC-6	1.75	3200		4.13	250	HD	Microfilm	64	289
30	10.8	36902	EKZ	20	MR16	GX5.3.2-Pin	C-6	1.75	3100		1.5	200	HD	16mm projection	64	289
35	12	41430	EPN UNIT	20	MR16	GX5.3.2-Pin	C-6	1.75	3300		1.13	50	HD	8mm projection	64	289
42	10.8	41729	EPT UNIT	20	MR16	GX5.3.2-Pin	C-6	1.75	2900		1.5	10000	HD	Fiber optics	64	289
50	8	41251	EFM	20	MR16	GZ6.35 2-Pin	C-6	1.75	3300		1.25	50	HD	8mm projection	64	289
	12	25475	ENL	20	MR16	GX5.3.2-Pin	C-6	1.75	3050		1.5	4000	HD	Fiber optics, display lighting	64	289
	13.8	44854	DJT UNIT	20	MR16	GX5.3.2-Pin	CC-6	1.75	3150		6	1000	HD	Microfilm	64	289
		14887	FML UNIT	20	MR16	GX5.3.2-Pin	CC-6	1.75	3150		8.44	1000	HD	Microfilm	64	289
55	17	43986	DDF UNIT	20	MR16	GX5.3.2-Pin	CC-6	1.75	3100		2.19	300	HD	Enlarger, projection	64	289
75	12	41252	EFN	20	MR16	GZ6.35 2-Pin	CC-6	1.75	3350		1.25	50	HD	8mm projection	64	289
80	19	43206	DDM UNIT	20	MR16	GX5.3.2-Pin	CC-6	1.75	3350		6	50	HD	Slide projection	64	289
		40248	ENW/ENC UNIT	20	MR16	GX5.3.2-Pin	CC-6	1.75	3200		1.75	200	HD	8mm projection	64	289
	21	43988	DDS UNIT	20	MR16	GX5.3.2-Pin	CC-6	1.75	3125		6.5	1000	HD	Microfilm	64	289
	30	35800	EKP/ENA	20	MR16	GX5.3.2-Pin	CC-6	1.75	3350		1.75	25	HD	8mm projection	64	289
85	13.8	43950	DED UNIT	20	MR16	GX5.3.2-Pin	C-6	1.75	3150		6.5	1000	HD	Microfilm	64	289
	82	11698	ESJ	20	MR16	GY5.3.2-Pin	CC-8	1.75	3350		1.75	40	HD	Enlarger, projection	64	289
90	14.5	41882	EPV UNIT	20	MR16	GX5.3.2-Pin	CC-6	1.75	3150		6.13	500	HD	Microfilm	64	289
		42614	EPX UNIT	20	MR16	GX5.3.2-Pin	CC-6	1.75	3150		6.5	500	HD	Microfilm	64	289
100	12	41253	EFP	20	MR16	GZ6.35 2-Pin	CC-6	1.75	3350		1.25	50	HD	8mm projection	64	289
		12003	EXV UNIT	20	MR16	GX5.3.2-Pin	CC-6	1.75	3350	3100		50	U	Camera Light	64	289

Photo/Projection SECTION 2



Watts	Volts	Order Code	Description	Case Qty.	Bulb	Base	Filament Type	MOL (in)	Color Temp.	CBCP	Working Distance (in)	Life (hrs)	Burn Position	Application	Footnotes	Figure Number
Quartzline® Multi-Mirror® Reflectors – MR16 (Continued)																
150	15	41254 EFR		20	MR16	GZ6.35 2-Pin	CC-6	1.75	3350		1.25	50	HD	8mm projection	64	289
		25137 Q150MR16-15LEADS		20	MR16	Special Leads	C-8	–	3300	–	–	200	BDTH	Optical Printing	64	
		20 43537 DDL UNIT		20	MR16	GX5.3 2-Pin	C-6	1.75	3150		7.75	500	HD	Microfilm	64	289
		21 29151 EJM		20	MR16	GX5.3 2-Pin	CC-6	1.75	3350		1.5	40	HD	8mm projection	64	289
		35200 EKE		20	MR16	GX5.3 2-Pin	CC-6	1.75	3250		1.75	250	HD	8mm projection, fiber optics	64	289
		21 38306 ELD/EJN		20	MR16	GX5.3 2-Pin	CC-6	1.75	3350		6.5	40	HD	Microfilm	64	289
		120 43756 ESD UNIT		20	MR16	GY5.3 2-Pin	CC-8	1.75	3350		1.75	12	HD	Enlarger, projection	64	289
		15477 EZK UNIT		20	MR16	GY5.3 2-Pin	CC-8	1.75	3200	3600		200	U	Camera Light	64	289
		200 29150 EJL		20	MR16	GX5.3 2-Pin	CC-6	1.75	3400		1.25	50	HD	16mm, Color printer	64	289
		36899 EKX		20	MR16	GX5.3 2-Pin	CC-6	1.75	3400		5.5	25	HD	Microfilm	64	289
		11132 EWF UNIT		20	MR16	GX5.3 2-Pin	CC-8	1.75	3300		11.75	50	H22	Overhead projection	64	289
		82 13152 EYA		20	MR16	GY5.3 2-Pin	CC-8	1.75	3300			50	HD	Enlarger	64	289
		250 37462 ELC		20	MR16	GX5.3 2-Pin	CC-6	1.75	3400		1.25	50	HD	Fiber optics, color printer	64	289
		22023 ELC/C		20	MR16	GX5.3 2-Pin	CC-6	1.75	3400		1.25	50	HD	Fiber optics, color printer	64	289
		15377 ELC/500		20	MR16	GX5.3 2-Pin	CC-6	1.75	3350		1.25	500	HD	Fiber optics, color printer	64	289
		82 11110 EVW UNIT		20	MR16	GY5.3 2-Pin	CC-8	1.75	3300		11.75	50	H22	Overhead projection	64	289
		120 38686 ENH UNIT		20	MR16	GY5.3 2-Pin	CC-8	1.75	3250	11700	6	175	HD	Slide projection	64	289
		11322 ETJ		20	MR16	GY5.3 2-Pin	CC-8	1.75	3300		1.5	175	HD	Fiber Optics	64	289
		11750 EXX		20	MR16	GY5.3 2-Pin	CC-8	1.75	3300	6750		25	U	Camera Light	64	289
		300 38476 ELH		20	MR16	GY5.3 2-Pin	CC-8	1.75	3350		6	35	HD	Slide projection	64	289
		38685 ENG		20	MR16	GY5.3 2-Pin	CC-8	1.75	3450		6	15	HD	Slide projection	64	289
		340 41874 ERV UNIT		20	MR16	GX5.3 2-Pin	CC-8	1.75	3300		11.75	75	HD	Overhead projection	64	289
		360 41705 ENX UNIT		20	MR16	GY5.3 2-Pin	CC-8	1.75	3300		11.75	75	HD	Overhead projection	64	289
		86 19475 ENX-5 UNIT		20	MR16	GY5.3 2-Pin	CC-8	1.75	3300			75	HD	Overhead projection	64	289
		100 41702 EPW UNIT		20	MR16	GY5.3 2-Pin	CC-8	1.75	3250		11.75	75	HD	Overhead projection	64	289
		410 21613 FXL		20	MR16	GY5.3 2-Pin	CC-8	1.75	3300		11.75	38	HD	Overhead projection	64	289

Hi-Tech Lamps

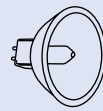
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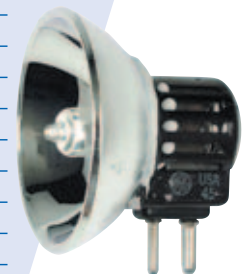
Quartzline® Reflector Lamps

FEATURES

- Non-faceted (smooth) dichroic reflectors



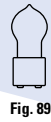
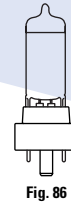
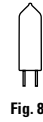
Watts	Volts	Order Code	Description	Case Qty.	Bulb	Base	Filament Type	MOL (in)	Color Temp.	Working Distance (in)	Life (hrs)	Burn Position	Application	Footnotes	Figure Number
Quartzline® Reflector Lamps															
50	18	41885 ELS/ELR UNIT		24	MR14	GX7.9 2-Pin	CC-8	1.41	3100	4.75	650	HD	Microfilm	64	83
		30 40598 ENZ UNIT		20	MR16	GX5.3 2-Pin	CC-6	1.75	3450	1.25	25	HD	8mm projection	64	82
		80 32886 EJY		20	MR16	GX5.3 2-Pin	CC-6	1.75	3400	1.5	25	HD	Fiber Optics	64	82
		30 37412 ELB		20	MR16	GX5.3 2-Pin	CC-6	1.75	3400	1.25	18	HD	8mm projection	64	82
		150 39742 DNF		24	MR16	GX7.9 2-Pin	CC-8	1.77	3400	2.75	25	HD	8mm projection	64	83
		32882 EJA		20	MR16	GX5.3 2-Pin	CC-6	1.75	3350	1.1	40	HD	Fiber Optics	64	82
		32831 EJV		20	MR16	GX5.3 2-Pin	CC-6	1.75	3350	1.75	40	HD	8mm proj., printer	64	82
		120 40161 DNE UNIT		24	MR16	G7.9 2-Pin	CC-8	1.77	3350	2.75	12	HD	8mm projection	64	83
		250 40017 EMM/EKS		24	MR14	GX7.9 2-Pin	CC-8	1.66	3400	2.63	50	HD	16mm projection	64	83
		120 40658 BHB UNIT		24	MR14	G7.9 2-Pin	CC-8	1.67	3350	2.63	25	HD	16mm projection	64	83



Quartzline® Single-Ended

FEATURES

- Source size is the dimension of the rectangular area, centered on the lamp axis, within which all luminous parts of the filament lie when viewed perpendicular to the coil axis

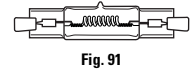
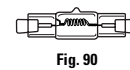


Watts	Volts	Order Code	Description	Case Qty.	Bulb	Base	Filament Type	LCL (in)	MOL (in)	Lumens	Color Temp	Source Size W x L (in)	Life (hrs)	Burn Position	Application	Footnotes	Figure Number	
Quartzline® Single-Ended																		
30	10.8	37346	DZA 24PK	24	T3.5	G5.3 2-Pin	C-6	1.06	2	530	3100	.15 x .05	400	HD		64	85	
50	12	18234	BRL	100	T3.5	G6.35 2-Pin	C-6	1.17	1.72	1400	3400		50	U		64	84	
100	12	14876	FCR 100PK	100	T3	GY6.35 2-Pin	C-6 Oval	1.18	1.75	2800	3300	.20 x .15	50	HD		64	84	
		35321	FDT	24	T3	GZ9.5 2-Pin Pf	C-6 Oval	1.06	2.12	2900	3300	.23 x .15	50	HD		64	88	
150	24	13598	FCS 100PK	100	T4	G6.35 2-Pin	C-6 Oval	1.18	2	4500	3300	.25 x .15	50	HD		64	84	
		36878	FDV	24	T4	G6.35 2-Pin	C-6 Oval	1.19	2	4300	3050	.25 x .15	100	U		64	84	
		37695	DZE/FDS	24	T4	GZ9.5 2-Pin Pf	C-6 Oval	1.31	2.68	4000	3250	.25 x .15	100	HD		64	88	
175	24	42612	EML UNIT	24	T4	G5.3 2-Pin	C-6	1.06	2.12	5000	3200	.21 x .19	125	HD		64	85	
250	24	14874	EHJ 100PK	100	T4	G6.35 2-Pin	C-6 Oval	1.31	2.25	8000	3400	.30 x .15	50	HD		64	84	
		120	13617	EYH/FKT UNIT	24	G6	G5.3 2-Pin	CC-6	1.44	2.5	6000	3000	.55 x .17	200	HD		64	85
275	24	18241	FNT/100	100	T4	G6.35 2-Pin	C-6 Oval	1.31	2.25	10000	3400	.14 x .28	50	HD		64	84	
300	24	19886	FLW	48	T4	GY6.35 Ceramic	C-6 Oval	1.21	2.15	10200	3500	.34 x .23	50	HD		64	-	
360	82	12696	EYB UNIT	24	T3.5	G5.3 2-Pin	CC-8	1.25	2.25	10000	3300	.30 x .20	75	HD		64	85	
		86	19322	EYB-5 UNIT	24	T3.5	G5.3 2-Pin	CC-8	1.25	2.25	3200	3200	.30 x .20	75	HD		64	85
400	36	41164	EVD	24	T6	GY6.35 2-Pin	C-6	1.4	2.34	14500	3200		50	HD		64	84	
500	120	36178	BCK	24	T6	G17q 4-Pin	C-13D	1.56	3.25	3200			50	HD	Slide Projection	5, 64	86	
		36117	CBA	24	T6	G17q 4-Pin	C-13D	1.75	3.62	3200			50	HD	Slide Projection	6, 64	87	
		33663	FBG/FBD	24	G6	G5.3 2-Pin	CC-6	1.75	3	13200	3200	.50 x .20	50	U		64	85	
		37527	EHA	24	T6	GZ9.5 2-Pin Pf	C-13D	1.44	3	3300	3300	.35 x .35	50	HD		5, 64	88	
		19897	EPR	24	T6	TF	C-13D	2.68	1.56	3250	3250	.31 x .30	50	HD		64	-	
		600	120	32071	DYP	24	G7	2-Button	CC-6	1	2.25	17000	3200	.50 x .25	75	HD		64
600	120	30364	DYH	24	G7	G5.3 2-Pin	CC-6	1.44	2.5	17000	3200	.50 x .25	75	U		64	85	
		38675	BVE	24	T6	GZ9.5 2-Pin Pf	C-13D	1.75	3.5	3200	3200	.35 x .35	75	HD		5, 64	88	
		19479	DYS-5 UNIT	24	G7	GZ9.5 2-Pin Pf	CC-6	1.44	2.5	15500	3200	.45 x .45	150	HD		64	88	
		32955	DYS/DYV/BHC	24	G7	GZ9.5 2-Pin Pf	CC-6	1.44	2.5	17000	3200	.50 x .25	75	HD		64	88	
650	120	30304	DVY	24	G6	G5.3 2-Pin	CC-6	1.44	2.48	20000	3300	.50 x .20	25	HD		9, 64	85	
		220	33248	DYR	24	G7	GZ9.5 2-Pin Pf	2CC-8	1.44	2.5	16500	3200	.45 x .45	50	U		64	88
		240	33250	DYR	24	G7	GZ9.5 2-Pin Pf	2CC-8	1.44	2.5	16500	3200	.45 x .45	50	U		64	88

Quartzline® Double-Ended Projection

FEATURES

- Source size is the dimensions of the rectangular area, centered on the lamp axis, within which all luminous parts of the filament lie when viewed perpendicular to the coil axis



Watts	Volts	Order Code	Description	Case Qty.	Bulb	Base	Filament Type	MOL (in)	Lumens	Color Temp.	Source Size W x L (in)	Life (hrs)	Burn Position	Application	Footnotes	Figure Number
Quartzline® Double-Ended Projection																
375	30	29578	DWZ	24	T4	R7s	CC-8	3.13	7500	3000	.35 x .18	1000	U	Bowling Projector	64	90
420	120	29581	FAL	24	T4	R7s	CC-8	2.63	11000	3200	.35 x .17	90	U	Printer	64	90
		30276	FFM	24	T4	R7s	CC-8	3.13	11000	3200	.50 x .25	90	U	Copyboard	64	90
600	120	29598	FCB	24	T4	R7s	CC-8	3.75	17000	3250	.45 x .18	120	U	Overhead Projection	64	90
		29592	FFJ	24	T4	R7s	CC-8	2.63	17000	3250	.60 x .17	85	U	Printer	64	90
800	230	36952	DXX	24	T4	R7s	CC-8	3.13	21400	3200	.90 x .17	75	U	Copyboard, Studio	64	90
		240	36953	DXX	24	T4	R7s	CC-8	3.13	21400	3200	.90 x .17	75	U	Copyboard, Studio	64
1000	120	29604	BRH	24	T5	R7s	CC-8	3.75	30000	3350	.70 x .21	60	U	Overhead Projection	64	91
		38311	ETT UNIT	24	T5	R7s	CC-8	3.75		3350			70	U	Spec. (PH1000H)	64

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