



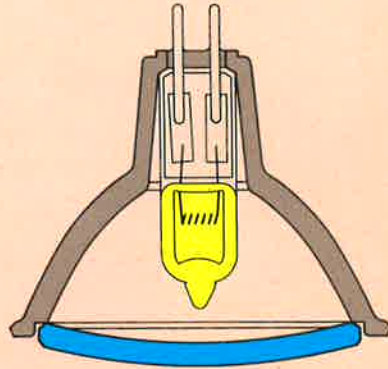
These new low-voltage lamps
add the advantages of sealed lamps
to the exacting light control
of THORN dichroic mirror lamps

The clear front glass does not fudge
or compromise the optical
performance of the reflector/capsule
system nor adversely affect the
brilliance of the tungsten halogen light

**Sealed Mirror Lamps deliver precisely
aimed light whilst retaining all
the enhancing sparkle of the
multi faceted reflectors that make
THORN LAMPS THE FAVOURITES
FOR DISPLAY LIGHTING**

SEALED MIRROR LAMPS
from THORN

The most extensive range two choices in two reflectors; fourteen beam



To the outstanding features of existing THORN dichroic mirror lamps, the *sealed* dichroic lamps add unique design advantages.

THORN *sealed* mirror lamps

Front glass

Made of clear borosilicate it does not distort the optical performance of the reflector and capsule.



Sealed against dirt

The front glass seals the reflector, maintaining the integrity of the dichroic coating in dusty and harsh environments.



Extra protection

The quartz capsule is protected against accidental handling and contact with combustible material.



Capsule

Quartz construction ensures a reliable and durable capsule. Comparable lamps made from hard glass have proved more vulnerable to early failure.



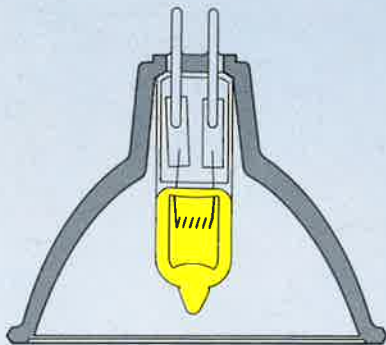
Reflector

THORN dichroic reflectors are precisely designed and manufactured for optimum efficiency and beam control, with honeycomb facets for medium and wide beams, and trapezoid facets for narrow beams.



The combination of these features enable THORN lamps to achieve

of dichroic reflector lamps: two sizes; six wattages; and distributions



THORN *open* mirror lamps

Cool pinch

Innovative design of all THORN dichroics has created a range with probably the lowest pinch temperature of any comparable lamp in the world.

THORN *sealed* mirror lamps run with a lower pinch temperature than even many open types. This means that the THORN *sealed* lamp will not overheat luminaires designed for *open* lamps.



Cool beam

The dichroic reflector directs a cool light beam forwards and heat rearwards.



Slotted base

The slot, in conjunction with the springs of the THORN lampholder provides secure retention of the lamp and further contributes to the good thermal performance of the lamp/luminaire system.



Optical integrity

The performance of THORN dichroic lamps is maximised by the precise matching of capsule to reflector, achieved by photo-electrically positioning the capsule into the focus of the reflector.



Sparkle

The multifaceted reflectors produce a visually attractive lamp and provide a livelier quality of accent lighting. The myriad facets send a multitude of individual light beams that subtly increase modelling.



high average intensity, consistent beam definition and reliable long life

These cones indicate the angle at which the intensity of the beam is at 50% of peak. Peak illuminance (lux) and beam diameter are given for planes at right angles and at various distances (m) from the source.

performance cones

50mm sealed

Trapezoidal faceted mirror reflector for narrower beams



	20W		35W		50W		65W	
	M268		M271		M249		M260	
m	11°	lux	8°	lux	10°	lux	12°	lux
1	25	4500	15	8100	25	10800	25	14400
2	50	1125	25	2025	40	2700	50	3600
3	60	500	50	900	50	1200	75	1600
4	75	282	60	504	75	675	1.00	900
5	1.00	180	75	324	90	432	1.20	576



Honeycomb mirror reflector for medium/wide beams



	20W		35W		50W		65W	
	M294		M270		M250		M282	
m	24°	lux	18°	lux	21°	lux	18°	lux
1	50	900	30	3240	40	3330	50	6750
2	90	225	75	810	75	833	90	1688
3	1.30	100	1.00	360	1.10	370	1.30	750
4	1.75	57	1.25	203	1.50	208	1.75	422
5	2.25	36	1.60	130	1.80	133	2.25	270

	M269		M281		M258		M261	
m	36°	lux	38°	lux	38°	lux	38°	lux
1	71	450	75	873	75	1395	75	2025
2	1.42	113	1.50	219	1.50	349	1.50	506
3	2.10	50	2.20	97	2.20	155	2.20	225
4	2.70	28	2.80	55	2.80	87	2.80	126
5	3.30	18	3.50	35	3.50	56	3.50	81



new standard

Sealed lamps are 3mm longer than open types, this demands a new international specification – to ensure all manufacturers' products are dimensionally compatible.

THORN is leading the industry to set a world standard for sealed dichroic lamps. The new lamp base is GU5.3 and is inter-changeable with the GX5.3. To specify a sealed lamp just add the prefix '2' to the current open lamp reference, eg 'M50' is specified as 'M250' for the sealed version.

THORN sealed mirror lamps are suitable for exterior applications in luminaires designed to relevant IP class.

	M280		M298	
m	60°	lux	60°	lux
1	1.50	630	1.50	810
2	2.50	158	2.50	203
3	3.75	70	3.75	90
4	5.00	40	5.00	50
5	6.00	25	6.00	32

performance cones

50mm open

performance cones

35mm open

	20W		35W		50W		75W	
	M68		M71		M49 M57*		M60	
m	11°	lux	8°	lux	10°	lux	12°	lux
1	.25	5000	.15	9000	.25	12000	.25	16000
2	.50	1250	.25	2250	.40	3000	.50	4000
3	.60	556	.50	1000	.50	1333	.75	1778
4	.75	313	.60	560	.75	750	1.00	1000
5	1.10	200	.75	360	.90	480	1.20	640



	12W		20W		35W	
	M64		M52 M55*		M65	
m	7°	lux	10°	lux	8°	lux
1	.15	6400	.25	5500	.15	9000
2	.25	1600	.40	1375	.25	2250
3	.50	711	.50	611	.50	1000
4	.60	400	.75	344	.60	563
5	.75	256	.90	220	.75	360

	20W		35W		50W		75W	
	M94		M70		M50 M56*		M82	
m	24°	lux	18°	lux	21°	lux	18°	lux
1	.50	1000	.30	3600	.40	3700	.50	7500
2	.90	250	.75	900	.75	925	.90	1875
3	1.30	111	1.00	400	1.10	411	1.30	833
4	1.75	63	1.25	225	1.50	231	1.75	469
5	2.25	40	1.60	144	1.80	148	2.25	300



	20W		35W	
	M51 M54*		M66	
m	17°	lux	20°	lux
1	.40	1760	.40	3000
2	.75	440	.75	750
3	1.00	196	1.50	333
4	1.25	110	1.40	188
5	1.50	70	1.75	120

	M69		M81		M58		M61	
m	36°	lux	38°	lux	38°	lux	38°	lux
1	.71	500	.75	970	.75	1550	.75	2250
2	1.42	125	1.50	243	1.50	388	1.50	562
3	2.10	56	2.20	108	2.20	172	2.20	250
4	2.70	31	2.80	61	2.80	97	2.80	140
5	3.30	20	3.50	39	3.50	62	3.50	90

	M62 M63*	
m	30°	lux
1	.60	600
2	1.10	150
3	1.65	67
4	2.25	38
5	2.75	24

	M80		M98	
m	60°	lux	60°	lux
1	1.50	700	1.50	900
2	2.50	175	2.50	225
3	3.75	78	3.75	100
4	5.00	44	5.00	56
5	6.00	28	6.00	36

Specifications. Whilst great care is taken to give up to date information THORN reserve the right to amend any specification without prior notification and all descriptions, illustrations in this publication shall not form part of any contract.

*SBC base

*SBC base

THORN mirror lamps

50mm sealed

lamp	ansi code	voltage	wattage	lamp cap	life average hrs	peak beam cd	beam angle to half peak degrees	diameter mm max	length mm max	colour K	operating position	filament type	bulb finish	standard pack quantity	bulk quantity*
M268		12	20	GU5.3	3000	4500	11	50.7	47.5	2900	univ	trans	clear	1	50
M294						900	24						clear		
M269						450	36						frosted		
M271		12	35	GU5.3	3000	8100	8	50.7	47.5	2900	univ	trans	clear	1	50
M270						3240	18						clear		
M281						873	38						frosted		
M249		12	50	GU5.3	3000	10800	10	50.7	47.5	3000	univ	trans	clear	1	50
M250						3330	21					trans	clear		
M258						1395	38					trans	frosted		
M280						630	60					axial	frosted		
M260		12	65	GU5.3	3000	14400	12	50.7	47.5	3000	univ	trans	clear	1	50
M282						6750	18					trans	clear		
M261						2025	38					axial	clear		
M298						810	60					axial	frosted		

50mm open

M68	ESX	12	20	GX5.3	3000	5000	11	50.7	44.5	2900	univ	trans	clear	1	50
M94	BBF					1000	24						clear		
M69	BAB					500	36						frosted		
M71	FRB	12	35	GX5.3	3000	9000	8	50.7	44.5	2900	univ	trans	clear	1	50
M70	FRA					3600	18						clear		
M81	FMW					970	38						frosted		
M49	EXT	12	50	GX5.3	3000	12000	10	50.7	44.5	3000	univ	trans	clear	1	50
M57	—			SBC B15D		12000	10					trans	clear		
M50	EXZ			GX5.3		3700	21					trans	clear		
M56	—			SBC B15D		3700	21					trans	clear		
M58	EXN			GX5.3		1550	38					trans	frosted		
M80	FNV			GX5.3		700	60					axial	frosted		
M60	EYF	12	75	GX5.3	3000	16000	12	50.7	44.5	3000	univ	trans	clear	1	50
M82	FNW					7500	24					trans	clear		
M61	EYC					2250	38					axial	clear		
M98	—					900	60					axial	frosted		

35mm open

M64	FTA	12	12	GZ4	2000	6400	7	35.3	35.0	2900	univ	trans	clear	1	50
M52	FTB	12	20	GZ4	3000	5500	10	35.3	35.0	2900	univ	trans	clear	1	50
M55	FSS			SBC B15D		5500	10		42.0						
M51	FTC			GZ4		1760	17		35.0						
M54	FST			SBC B15D		1760	17		42.0						
M62	FTD			GZ4		600	30		35.0						
M63	FSV			SBC B15D		600	30		42.0						
M65	FTE	12	35	GZ4	3000	9000	8	35.3	35.0	2900	univ	trans	clear	1	50
M66	FTF					3000	20		35.0						

*From April 1989 – standard pack quantity will be 10; bulk quantity will be 100



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