



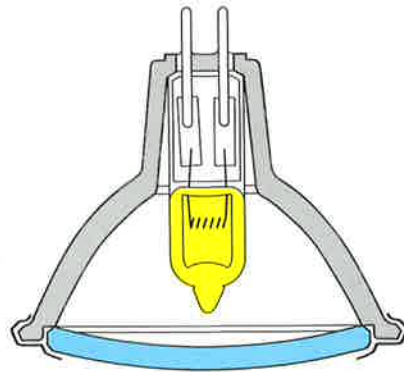
**GE Thorn**

**35 & 50mm Ø**  
*Open & sealed dichroic mirror lamps*



# *the features that give GE Thorn consistent beam definition*

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



## sealed mirror lamps



**Metal rim** The anodised metal rim ensures retention of the front glass without affecting the light output.



**Front glass** in clear borosilicate does not dull the lamp performance.



**Sealed against dirt.** The front glass seals against dirt and maintains light output in dirty and harsh environments.



**Extra protection.** The front glass protects the capsule from mishandling and contact with combustible materials. THORN *sealed* mirror lamps are suitable for exterior applications in luminaires designed to relevant IP class.



**New colours.** Red, yellow, green and blue, applied to the front glass of the sealed lamp, give saturated colours superior to reflector-coated lamps.



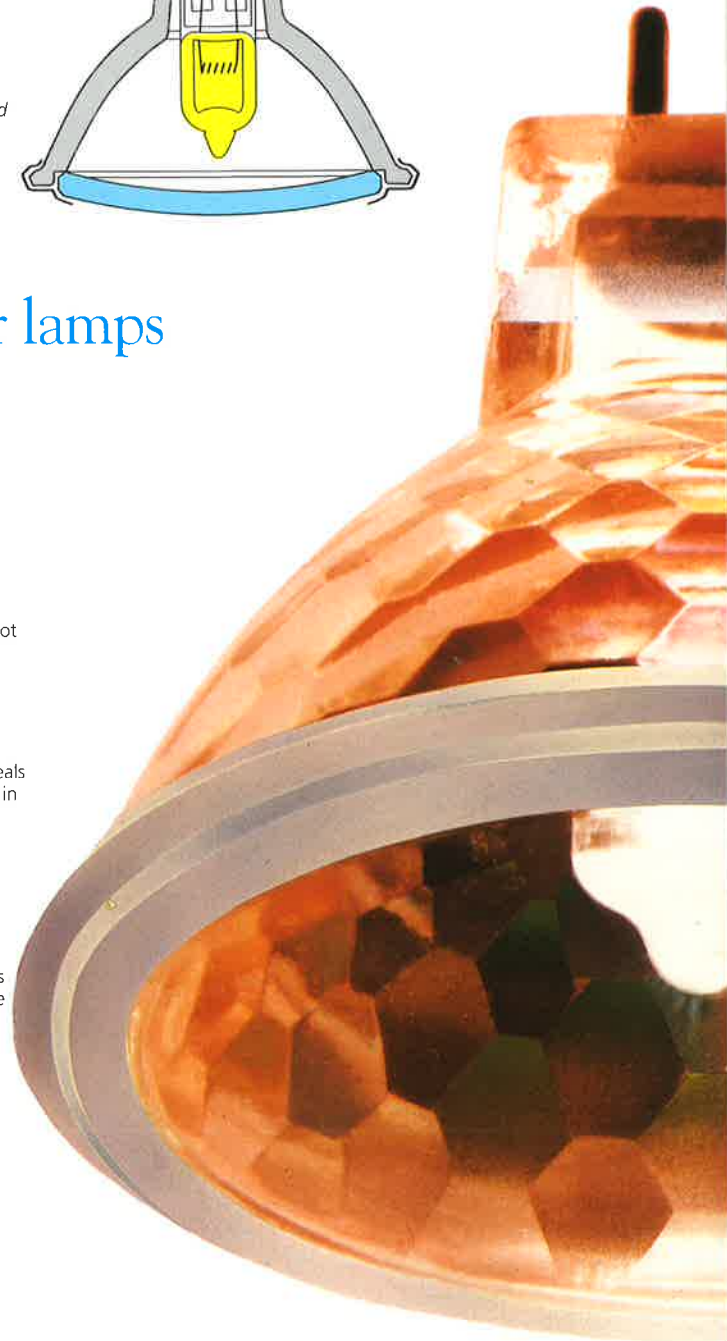
**Neodymium** Reduces yellow light producing whites of greater purity and enriched colours. Colour and Neodymium lamps are now available in 50mm diameter and in early '90, 35mm.



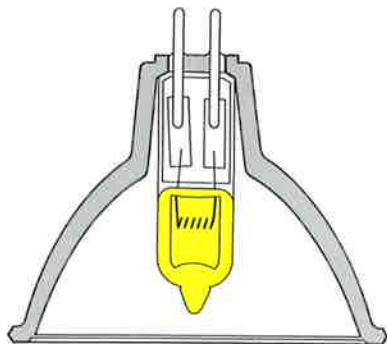
**Quartz construction** ensures the reliability of the lamp. Comparable lamps made from hard glass have proved more vulnerable to early failure.



**New standard.** The front glass adds 3mm to the overall length of a sealed lamp. To recognise this, a new international specification is required to ensure all manufacturers' lamps are dimensionally compatible. To specify a sealed lamp add the prefix '2' to the current open lamp reference e.g. 'M50' is specified as 'M250' for the sealed version.



*lamps high average intensity,  
and reliable long life*



## open mirror lamps



**Sparkle**, with or without the front glass, produced by faceted reflectors gives a livelier accent lighting with a visually attractive lamp.



**Optical integrity**. A precisely focussed lamp is achieved by photoelectric positioning of the capsule into its reflector.



**Cool beam**. 23 layers of dichroic coatings reflect light forward and transmit heat rearward.



**Slotted base** engages with the THORN lampholder springs providing secure retention.



**To Help Users** achieve the most effective display lighting THORN packs show lamp's Beam Performance Cone.



**Cool pinch**. Innovative design of all THORN dichroic mirror lamps has created a range with probably the lowest pinch temperature of any comparable lamp in the world. A cool pinch temperature enables Sealed Lamps to be used in luminaires designed for open lamps.



**Optimum beam control** is achieved by reflectors specifically designed for medium/wide distribution (honeycomb facets) or narrow distribution (trapezoid facets).



Lamp bases  
GU5.3 and GU4 are new  
designations for 50mm and  
35mm lamps with a  
retention slot in the lamp  
base. These can be used in  
GX5.3 and GZ4  
lampholders, but to take  
advantage of the retention  
facility a GU5.3 or GU4  
lampholder should be used.

35mm Ø

12 volt 3500 hours average life\* universal operating position

# SEALLED

lamp	wattage	lamp cap	peak beam cd	beam angle to half peak degrees	diameter mm max	length mm max	colour K	filament type	bulb finish
M264	12	GU4	5760	7	35.3	42.5	2900	trans	clear
M252	20		4950	10		42.5			
M251	20		1584	17		39.5			
M262	20		540	30		39.5			
M265	35		8100	8		42.5			
M266	35		2700	20		39.5			

\*except M264 2000 hrs



12W M264		20W M252		35W M265	
m	7° lux	10° lux	10° lux	8° lux	8° lux
1	12 5760	17 4950	14 8100		
2	24 1440	35 1238	28 2025		
3	37 640	52 550	42 900		
4	49 360	70 310	56 507		
5	61 230	87 198	70 324		

M251		M266	
m	17° lux	20° lux	lux
1	30 1584	35 2700	
2	60 396	71 675	
3	90 176	106 300	
4	120 99	141 169	
5	149 63	176 108	

M262	
m	30° lux
1	54 540
2	107 135
3	161 60
4	214 34
5	268 22

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.



Trapezoidal faceted mirror reflector for narrower beams



Honeycomb mirror reflector for medium/wide beams

# 50mm Ø

# 35, 50mm Ø Neodymium 50mm Ø Ultra Violet

lamp	wattage	lamp cap	peak beam ccd	beam angle to half peak degrees	diameter mm max	length mm max	colour K	filament type	bulb finish
M268	20	GU5,3	4500	11	50,7	47,5	2900	trans	clear
M294			900	24					clear
M269			450	36					frosted
M271	35	GU5,3	8100	8	50,7	47,5	2900	trans	clear
M270			3240	18					clear
M281			873	38					frosted
M249	FXK 50	GU5,3	10800	10	50,7	47,5	3000	trans	clear
M250	FXJ		3330	21				trans	clear
M258	FXH		1395	38				trans	frosted
M280			630					axial	frosted
M260	65	GU5,3	12960	12	50,7	47,5	3000	axial	clear
M282			6075	18				axial	clear
M261			1822	38				axial	clear
M298			729	60				trans	frosted

lamp	wattage	lamp cap	beam angle to half peak degrees	diameter mm max	length mm max
Neodymium 50mm	M104	50	GU5,3 10	50,7	47,5
	M105		21		
Neodymium 35mm	M148	20	GU4 10	35,3	42,5
Ultra Violet	M186	50	GU5,3 10	50,7	47,5
	M187		21		
	M188		38		

## Neodymium

The front glass on these lamps is specially treated to reduce the yellow content of the light output, greatly enhancing the colour rendition of illuminated material. This can be put to dramatic use in the display of food, jewellery, flowers and clothes.

## Ultra Violet Filter

The Bausch and Lomb Optivex™ UV Filter uses thin film layers that are carefully designed to selectively transmit visible light whilst eliminating virtually all UV radiation below 400nm. The filter blocks 99% of ultra violet radiation where light sensitivity is of

particular concern to art galleries, museums and other fine art collections. Filter applied to borosilicate glass is resistant to heat, abrasion and cracking. Colour consistency and performance stability is ensured.

20W M268		35W M271		50W M249		65W M260	
m	11° lux	8° lux	10° lux	12° lux			
1	.19 4500	.14 8100	.17 10800	.21 12960			
2	.39 1125	.28 2025	.35 2700	.42 3240			
3	.58 500	.42 900	.52 1270	.63 1440			
4	.77 282	.56 504	.70 675	.84 810			
5	.96 180	.70 324	.87 432	1.05 518			
M294		M270		M250		M282	
m	24° lux	18° lux	21° lux	18° lux			
1	.43 900	.32 3240	.37 3330	.32 6075			
2	.85 225	.63 810	.74 833	.63 1518			
3	1.28 100	.95 360	1.11 370	.95 675			
4	1.70 57	1.27 203	1.48 208	1.27 380			
5	2.13 36	1.58 130	1.85 133	1.58 243			
M269		M281		M258		M261	
m	36° lux	38° lux	38° lux	38° lux			
1	.65 450	.69 873	.69 1395	.69 1822			
2	1.30 113	1.38 219	1.38 349	1.38 455			
3	1.95 50	2.07 97	2.07 155	2.07 202			
4	2.60 28	2.75 55	2.75 87	2.75 113			
5	3.25 18	3.44 35	3.44 56	3.44 72			
M280		M298					
m	60° lux	60° lux					
1	1.15 630	1.15 729					
2	2.31 158	2.31 182					
3	3.46 70	3.46 81					
4	4.62 40	4.62 45					
5	5.77 25	5.77 29					

20W M148		50W M104		50W M186	
m	10° lux	10° lux	10° lux	10° lux	10° lux
1	.17 2750	.17 6000	.17 10800		
2	.35 688	.35 1500	.35 2700		
3	.52 306	.52 667	.52 1270		
4	.70 172	.70 375	.70 675		
5	.87 110	.87 240	.87 432		
M105		M187			
m	21° lux	21° lux	21° lux	21° lux	
1	.37 2200	.37 3330			
2	.74 550	.74 833			
3	1.11 244	1.11 370			
4	1.48 138	1.48 208			
5	1.85 88	1.85 133			
M188					
m	38° lux				
1	.69 1395				
2	1.38 349				
3	2.07 155				
4	2.75 87				
5	3.44 56				



Neodymium



Halogen

# 35,50mmØ Colours

	colour	lamp	wattage	lamp cap	beam angle to half peak degrees	diameter mm max	length mm max
50mm	Red	M249R	50	GU5.3	10	50.7	47.5
	Green	M249G					
	Yellow	M249Y					
	Blue	M249B					
35mm	Red	M252R	20	GU4	10	35.3	42.5
	Green	M252G					
	Yellow	M252Y					
	Blue	M252B					

#### Colours

Red, yellow, green and blue, applied to the front glass of the sealed lamp, give saturated colours superior to reflector-coated lamps.



12 volt 3500 hours average life\* universal operating position

# NEW REFLECTOR

**Lamp bases**  
GU5.3 and GU4 are new designations for 50mm and 35mm lamps with a retention slot in the lamp base. These can be used in GX5.3 and GZ4 lampholders, but to take advantage of the retention facility a GU5.3 or GU4 lampholder should be used.



# 35mm Ø

# 50mm Ø

lamp	ANSI code	wattage	lamp cap	peak beam cd	beam angle to half peak degrees	diameter mm max	length mm max	colour K	filament type	bulb finish
M64	FTA	12	GU4	6400	7	35.3	38.5	2900	trans	clear
M52	FTB	20	GU4	5500	10	35.3	38.5			
M55	FSS		SBC B15D	5500	10	42.0				
M51	FTC		GU4	1760	17	35.5				
M54	FST		SBC B15D	1760	17	42.0				
M62	FTD		GU4	600	30	35.5				
M63	FSV		SBC B15D	600	30	42.0				
M65	FTE	35	GU4	9000	8	35.3	38.5			
M66	FTF			3000	20	35.5				

lamp	ANSI code	wattage	lamp cap	peak beam cd	beam angle to half peak degrees	diameter mm max	length mm max	colour K	filament type	bulb finish
M68	ESX	20	GU5.3	5000	11	50.7	44.5	2900	trans	clear
M94	B8F			1000	24					frosted
M69	BAB			500	36					frosted
M71	FRB	35	GU5.3	9000	8	50.7	44.5	2900	trans	clear
M70	FRA			3600	18					clear
M81	FMW			970	38					frosted
M49	EXT	50	GU5.3	12000	10	50.7	44.5	3000	trans	clear
M50	EXZ		GU5.3	3700	21				trans	clear
M58	EXN		GU5.3	1550	38				trans	frosted
M80	FNV		GU5.3	700	60				axial	frosted
M60	EYF	75	GU5.3	16000	12	50.7	44.5	3000	axial	clear
M82	FNW			7500	18				axial	clear
M61	EYC			2250	38				axial	frosted
M98	-			900	60				trans	frosted

\*except M64 2000 hrs

12W M64		20W M52 M55*		35W M65	
m	7° lux	10° lux	10° lux	8° lux	lux
1	12 6400	17 5500	14 9000		
2	24 1600	35 1375	28 2250		
3	37 711	52 611	42 1000		
4	49 400	70 344	56 563		
5	61 256	87 220	70 360		
M51 M54*		M66			
m	17° lux	20° lux	lux	lux	
1	30 1760	35 3000			
2	60 440	71 750			
3	90 196	106 333			
4	120 110	141 188			
5	149 70	176 120			
M62 M63*					
m	30° lux	lux	lux	lux	
1	54 600				
2	107 150				
3	161 67				
4	214 38				
5	268 24				



Trapezoidal faceted mirror reflector for narrower beams



Honeycomb mirror reflector for medium/wide beams

20W M68		35W M71		50W M49		75W M60	
m	11° lux	8° lux	10° lux	10° lux	12° lux	lux	lux
1	19 5000	14 9000	17 12000	21 16000			
2	39 1250	28 2250	35 3000	42 4000			
3	58 556	42 1000	52 1333	63 1778			
4	77 313	56 560	70 750	84 1000			
5	96 200	70 360	87 480	105 640			
M94		M70		M50		M82	
m	24° lux	18° lux	21° lux	18° lux	lux	lux	lux
1	43 1000	32 3600	37 3700	32 7500			
2	85 250	63 900	74 925	63 1875			
3	128 111	95 400	111 411	95 833			
4	170 63	127 225	148 231	127 469			
5	213 40	158 144	185 148	158 300			
M69		M81		M58		M61	
m	36° lux	38° lux	38° lux	38° lux	lux	lux	lux
1	65 500	69 970	69 1550	69 2250			
2	130 125	138 243	138 388	138 562			
3	195 56	207 108	207 172	207 250			
4	260 31	275 61	275 97	275 140			
5	325 20	344 39	344 62	344 90			
M80		M98					
m	60° lux	60° lux	lux	lux	lux	lux	lux
1	1.15 700	1.15 900					
2	2.31 175	2.31 225					
3	3.46 78	3.46 100					
4	4.62 44	4.62 56					
5	5.77 28	5.77 36					

\*SBC base

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.

## Sales and Distribution Outlets in Europe

### Austria

Hoherr-Schranz-Gasse 4  
1211 Wien, Postfach 17  
Tel (43) 1 388601/14  
Fax (43) 1 381423

Otto-Hahn-Str 21

W-6308 Butzbach  
Tel (49) 6033 8980  
Fax (49) 6033 67678

### Belgium

Av. Firmin Lecharlier Laan 143/147  
Bruxelles 1090.  
Tel (32) 2 427 7093  
Fax (32) 2 425 6765

### Ireland

280 Holly Road  
Western Industrial Estate  
Naas Road  
Dublin 12  
Tel (353) 1 521000  
Fax (353) 1 504142

### Denmark

Fabriksparken 4  
2600 Glostrup  
Tel (45) 43 632800  
Fax (45) 43 632779

### Italy

Sivi Illuminazione SPA  
Casella Postale 604  
361000 Vicenza  
Tel (39) 444 595 100

### Finland

Manttaalitie 7A  
SF-01530 Vantaa  
Tel (358) 0 870 2099  
Fax (358) 0 870 2193

Via del Missaglia 113/A1  
20142 Milan  
Tel (39) 2 822 9705  
Fax (39) 2 826 6350

### France

Zac Paris Nord II  
44 Rue des Chardonnerets  
BP 60054  
95972 Roissy Charles de Gaulle  
Tel (33) 1 4863 2490  
Fax (33) 1 4863 8474

Viale Bruno Rizzieri 226  
00173 Rome  
Tel (39) 6 722 1131  
Fax (39) 6 722 1931

### Norway

P O Box 104  
Industriveien 24  
1481 Hagan  
Tel (47) 2 760480  
Fax (47) 2 760220

### Germany

Glühlampenfabrik Jan GmbH  
Carl Zeiss Strasse 18  
Postfach 1509  
4460 Nordhorn  
Tel (49) 05921 17723

### Portugal

Av. Helen Keller  
Torre dos Moinhos  
1400 Lisbon  
Tel (351) 1 363 1166  
Fax (351) 1 647 083

### Spain

Calle de Caspe 12  
Barcelona 10  
Tel (34) 3 3025324  
Fax (34) 3 3170134

Juan Bravo 3c

Madrid 6  
Tel (34) 1 576 7329  
Fax (34) 1 435 2825

### Sweden

Ostmastergrand 4 - Arsta  
POB 9042  
S12109 Johanneshov  
Stockholm  
Tel (46) 8 6020100  
Fax (46) 8 819410

### Switzerland

Manessestrasse 152  
8027 Zurich  
Tel (41) 1 202 1100  
Fax (41) 1 202 1136

### Turkey

Darutpasa Caddes  
Topkapi  
Istanbul  
Tel (90) 1 567 54 47  
Tel (90) 1 576 45 05  
Tel (90) 1 544 44 00/8  
Fax (90) 1 576 09 79

### United Kingdom

Miles Road  
Mitcham  
Surrey CR4 3YX  
Tel 081 640 1221  
Fax 081 685 9625

## OEM, Auto, Photo/Studio, Special Light Sources

### GE Thorn Lamps

Miles Road  
Mitcham  
Surrey CR4 3YX  
Tel 081 640 1221  
Telex 25534  
Fax 081 685 9625

## Retail Light Sources

### GE Thorn Lamps

Albany House  
Burlington Road  
New Malden  
Surrey KT3 4NJ  
Tel 081 949 3131  
Fax 081 949 7962

## Wholesale Light Sources

### London Inside M25 and South East

3 King George Close  
Eastern Avenue West  
Romford, Essex RM7 7PP  
Tel 0708 730888  
Telex 897759 THLITE G  
Fax Sales 0708 732944  
Fax Technical  
quotations 0708 727370  
Fax Technical  
enquiries 0708 732 642

### Scotland Midlands and South West

Albany House  
Burlington Road  
New Malden  
Surrey KT3 4NJ  
Tel 081 949 3131  
Fax 081 949 7962

### North West

Thorn House, The Towers  
Wilmslow Road  
Didsbury M20 8SE  
Tel 061 445 9988  
Fax 061 445 8191

### Northern Ireland

Prince Regent Road  
Castlereagh  
Belfast BT3 6QR  
Tel 0232 401122  
Fax 0232 401338

### North East

California Drive  
Castleford  
West Yorkshire  
WF10 5QH  
Tel 0977 551212  
Fax 0977 514294

## Associated Companies & Distributors

### Australia

GE Lighting  
Hume Road, Smithfield 2164  
Tel (61) 2 725 2655  
Fax (61) 2 604 0476

Thorn Ali Lighting  
13 Cooper Street PO Box 188  
Smithfield, NSW 2164  
Tel (61) 2 604 4300  
Fax (61) 2 604 4588

### Hong Kong

Thorn Lighting (HK) Ltd.  
Jardine Engineering House  
260 King's Road, PO Box 517 GPO  
Tel (85) 2 578 4303  
Fax (85) 2 887 0247

### New Zealand

Thorn Lighting Ltd  
399 Rosebank Road, Avondale,  
PO Box 71134, Rosebank, Auckland 7  
Tel (64) 9 887 155  
Fax (64) 9 887 591

### Singapore

Thorn Lighting Singapore  
29 Tannery Road, Singapore 1334  
Tel (65) 748 4949  
Fax (65) 745 7707



**GE Thorn**  
A genius for light