GE invented and launched the world's first halogen lamp in 1958.

Halogen lamps provide outstanding light quality – the crisp white light delivers superior colour reproduction.
They are more energy efficient than conventional incandescent lamps and offer a longer life – all within a compact size.
Other features include outstanding beam control, UV control, heat reflective coatings that protect display items.

Content

Precise™ ConstantColor™ MR16	34
Precise™ Bright MR16	35
Standard MR16	36
Precise™ Alutech™ MR16	36
MR16 START	36
MR16 IR	36
Precise™ MR11	37
MR11 Start	37
AR 111	38
Low Voltage Halogen Capsules	40
Low Voltage Halogen Capsules Start	40
MR16 Mains Tech	42
MR20 Mains Tech	42
MR16 Mains Start	42
MR16 Mains Start Dichroic	42
R16 Mains Start Coloured	42
Single Ended Mains Voltage Capsules	44
Double Ended Mains Voltage Capsules	45
Halogen PAR Lamps	46
HaloGlobe™	48
HaloGLS™	48
HaloCandle	48
Twisted Candle	48
HaloSpherical	48
HaloReflector	49
Halo BTT™	49
Halo Tubular	49
Halo T38	49
General information	50

Product identification

The following glossary of terms and descriptions can help you when checking halogen lamp specifications and explains how to use the product codes when ordering products. Within each product line, lamps are divided into families – within families, lamps are listed by wattage.

Watts:
Energy used. To find actual energy used (kWh) multiply power (watts shown) x hours of use divided by 1000

Volts:
Each lamp's voltage is listed

Product Description:
The lamp's identification code

Length:
Expressed in mm

Beam Spread Degrees:
The angle of the cone of light produced by a reflector lamp at 50% of its intensity

Pack Quantity:
The number of lamps in one box

Product Code:
It is important to use this code when ordering to ensure that you receive the exact product you require

Precise™ MR16 ConstantColor™ – UV Control

Watts	Volts	Product Description	Cap	Length	Diameter	Beam angle	Candela	CCT (K)	Life(h)	Pack Qty	EE Class	Product Code
ø 50 mm – open dichroic mirror												
75	12	**EYF/CC**	GU5.3	46	50.7	15	11500	3050	4000	10	–	**20843**
75	12	**EYJ/CC**	GU5.3	46	50.7	25	5500	3050	4000	10	–	**20841**
75	12	**EYC/CC**	GU5.3	46	50.7	42	2000	3050	4000	10	–	**20840**

Lamp:
Description of lamp type, and product features

Cap:
The type of cap fitted

Peak Beam Candelas:
Luminous intensity of the lamp beam expressed in candelas

Rated Average Life:
The point in time when 50% of installed lamps are still burning

Energy Efficiency Class:
Energy saving code

EYC/CC

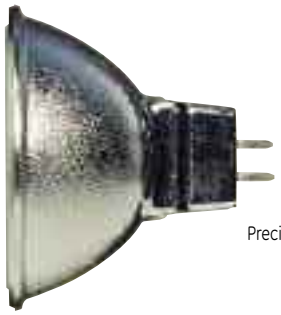
ANSI – Code

Product Feature, eg. Cover glass

CCT K:
Colour temperature – Kelvin. The visual warmth or coolness of the light. The higher the number the whiter or cooler the light appears

Precise™ MR16 & MR11

If you're looking for halogen, aim for a Precise™ solution



Precise™ MR16

Precise™ MR11

- **Cool, white light,**
  precise beam control, excellent colour performance and a lamp life of up to 6,000 hours.
- **Ideal for**
  retail display lighting, decorative lighting and spotlighting of individual features – including heat sensitive items.
- **A wide range of**
  beam angles and select Precise™ MR16 lamps for ultra – violet control.

Choose:

Precise™ ConstantColor™ MR16
for consistent light quality and exceptional long life.

Precise™ Bright MR16
for outstanding light output in a mid range lamp.

Precise™ Alutech™ MR16
for all your heat sensitive halogen fixtures.

Precise™ Bright MR11
for high output, light quality and long life in an extra compact form.

Range of beam angles

GE Precise™ MR16 lamps offer a choice of nominal beam angles from 8˚ to 60˚. The range of beam angles can be used to either highlight single features with a tight focus to provide a wash of ambient lighting and a variety of effects achievable with intermediate beams.

Applications:
- Retail display lighting
- Decorative lighting and
- Spotlighting of individual features.

Halogen lamps
Low voltage

Precise™ ConstantColor™ MR16
A long lasting premium quality halogen lamp, the Precise™ ConstantColor™ lamp features revolutionary GE Thin Film Technology to give consistent light output for the 6000 hour life of the lamp. The advanced coating is designed to withstand temperatures of up to 500˚C, making it the ideal choice for long-term reliability and consistent light quality.

Precise™ ConstantColor™ MR16

Precise™ Bright MR16
Precise™ Bright sets new performance standards offering outstanding long life, light output and beam quality. Its advanced, computer-designed reflector gives a smooth beam and outstanding light output compared to similar lamps. Precise™ Bright is available in both open and closed forms.

Precise™ Bright MR16

PreciseTM Alutech™ MR16
The perfect choice for heat sensitive halogen fixtures. For many years finding a halogen lamp suitable for high technology electronic fixtures was a problem. Precise™ Alutech is the answer. With a GE developed aluminium coating, almost all of the heat is reflected away from the fixture. Throwing heat forward has advantages in downlighters like minimising heat build up in ceiling voids.

Precise™ Alutech™ MR16

Precise™ Bright MR11
The extra compact, high performance halogen lamp GE Precise™ Bright MR11 packs the high output, light quality and long life of halogen into an extra compact form, making it ideal where space is at a premium.

Precise™ Bright MR11

AR111
The GE AR111 Aluminium facetted reflector for a better beam control has been designed to direct light and heat forward to ensure full protection for the gear. AR111 provides bright and white halogen quality of light (up to 2950K) especially suitable for decorative and architectural lighting.

AR111

- Up to 6000 hours life
- 98–99% lumen maintenance
- Double sided dichroic coating
- With UV control
- The most consistent light output available

- Up to 4000 hours life
- Outstanding light output and beam quality
- Upgraded reflector
- UV control in both open and closed forms

- Heat reflected forward
- Ideal for heat sensitive fixtures
- 3000 hours life
- With UV control

- Extra-compact 35 mm size – perfect for lighting cabinet displays
- 3500 hours life
- Closed lamps with UV control

- Metal cap over filament to avoid direct glare effect and hot point
- UV-block to reduce bleaching effect
- Long life up to 3,000 hours
- 75%+ lumen maintenance to lower maintenance costs

Precise™ MR16 ConstantColor™ – UV Control

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Beam angle	Candela	CCT (K)	Life(h)	Pack Qty	Product Code
ø 50 mm – open dichroic mirror											
71	12	**EYF/CC**	GU5.3	46	50.7	15	11500	3050	4000	10	**20843**
71	12	**EYJ/CC**	GU5.3	46	50.7	25	5500	3050	4000	10	**20841**
71	12	**EYC/CC**	GU5.3	46	50.7	42	2000	3050	4000	10	**20840**
ø 50 mm – closed dichroic mirror											
20	12	**ESX/CG**	GU5.3	50.5	50.7	15	3150	2900	5000	10	**20858**
20	12	**BAB/CG**	GU5.3	50.5	50.7	40	475	2900	5000	10	**20857**
35	12	**FRB/CG**	GU5.3	50.5	50.7	12	7500	3050	5000	10	**20864**
35	12	**FRA/CG**	GU5.3	50.5	50.7	20	3200	3000	5000	10	**20860**
35	12	**FMW/CG**	GU5.3	50.5	50.7	40	900	3000	5000	10	**20859**
50	12	**EXT/CG**	GU5.3	50.5	50.7	14	8400	3050	6000	10	**20872**
50	12	**EXZ/CG**	GU5.3	50.5	50.7	25	2900	3050	6000	10	**20871**
50	12	**EXN/CG**	GU5.3	50.5	50.7	40	1500	3050	6000	10	**20867**
50	12	**FNV/CG**	GU5.3	50.5	50.7	55	850	3050	6000	10	**20865**
71	12	**EYF/CG**	GU5.3	50.5	50.7	15	10400	3050	4000	10	**20876**
71	12	**EYJ/CG**	GU5.3	50.5	50.7	25	4550	3050	4000	10	**20874**
71	12	**EYC/CG**	GU5.3	50.5	50.7	40	2000	3050	4000	10	**20873**

	20W		**35W**		**50W**		**71W**	
	ESX/CG **12° Øm**		FRB/CG **12° Øm**		EXT/CG **14° Øm**		EYF/CG **15° Øm**	
m		**lux**		**lux**		**lux**		**lux**
1	0.21	3150	0.21	7500	0.25	8400	0.26	11500
2	0.42	788	0.42	1875	0.49	2100	0.53	2875
3	0.63	350	0.63	833	0.74	933	0.79	1278
4	0.84	197	0.84	469	0.98	525	1.05	719
5	1.05	126	1.05	300	1.23	336	1.32	460

			FRA/CG 20° Øm		EXZ/CG 25° Øm		EYJ/CG 25° Øm	
m				lux		lux		lux
1			0.35	3200	0.44	2900	0.44	4550
2			0.71	800	0.89	725	0.89	1138
3			1.06	356	1.33	322	1.33	506
4			1.41	200	1.77	181	1.77	284
5			1.76	128	2.22	116	2.22	182

	BAB/CG **40° Øm**		FMW/CG **40° Øm**		EXN/CG **40° Øm**		EYC/CG **40° Øm**	
m		**lux**		**lux**		**lux**		**lux**
1	0.73	475	0.73	900	0.73	1500	0.73	2000
2	1.46	119	1.46	225	1.46	375	1.46	500
3	2.18	53	2.18	100	2.18	167	2.18	222
4	2.91	30	2.91	56	2.91	94	2.91	125
5	3.64	19	3.64	36	3.64	60	3.64	80

					FNV/CG **55° Øm**	
m						**lux**
1					1.04	850
2					2.08	213
3					3.12	94
4					4.16	53
5					5.21	34

Precise™ Bright MR16 – UV Control

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Beam angle	Candela	CCT (K)	Life(h)	Pack Qty	Product Code
ø 50 mm – open dichroic mirror											
20	12	**M69/BAB**	GU5.3	46	50.7	36	480	3000	4000	10	**88231**
35	12	**M70/FRA**	GU5.3	46	50.7	18	3210	2900	4000	10	**88228**
35	12	**M81/FMW**	GU5.3	46	50.7	36	1390	2900	4000	10	**88229**
50	12	**M50/EXZ**	GU5.3	46	50.7	18	5080	3000	4000	10	**88233**
50	12	**M58/EXN**	GU5.3	46	50.7	36	2250	3000	4000	10	**88234**
50	12	**M80/FNV**	GU5.3	46	50.7	60	1070	3000	4000	10	**88232**
ø 50 mm – closed dichroic mirror											
20	12	**M268/ESX/CG**	GU5.3	50.5	50.7	8	4000	2800	4000	10	**88226**
20	12	**M269/BAB/CG**	GU5.3	50.5	50.7	36	450	2800	4000	10	**88235**
35	12	**M270/FRA/CG**	GU5.3	50.5	50.7	18	3000	2900	4000	10	**88230**
35	12	**M281/FMW/CG**	GU5.3	50.5	50.7	36	1300	2900	4000	10	**88236**
50	12	**M249/EXT/CG**	GU5.3	50.5	50.7	8	8000	3000	4000	10	**88227**
50	12	**M250/EXZ/CG**	GU5.3	50.5	50.7	18	4750	3000	4000	10	**88237**
50	12	**M258/EXN/CG**	GU5.3	50.5	50.7	36	2100	3000	4000	10	**88239**
50	12	**M280/FNV/CG**	GU5.3	50.5	50.7	60	950	3000	4000	10	**88238**

	20W			35W			50W		
	Open		Closed	Open		Closed	Open		Closed
m		**8° Øm**	**lux**					**8° Øm**	**lux**
1		0.14	4000					0.14	8000
2		0.28	1000					0.28	2000
3		0.42	444					0.42	889
4		0.56	250					0.56	500
5		0.70	160					0.70	320

m				**lux**	**18° Øm**	**lux**	**lux**	**18° Øm**	**lux**
1				3660	0.32	2950	5920	0.32	4750
2				915	0.63	738	1480	0.63	1188
3				407	0.95	328	658	0.95	528
4				229	1.27	184	370	1.27	297
5				146	1.58	118	237	1.58	190

m	**lux**	36° **Øm**	**lux**	**lux**	**36° Øm**	**lux**	**lux**	**36° Øm**	**lux**
1	500	0.65	450	1620	0.65	1300	2600	0.65	2100
2	125	1.30	113	405	1.30	325	650	1.30	525
3	56	1.95	50	180	1.95	144	289	1.95	233
4	31	2.60	28	101	2.60	81	163	2.60	131
5	20	3.25	18	65	3.25	52	104	3.25	84

m	**lux**	**60° Øm**	**lux**
1	1190	1.15	950
2	298	2.31	238
3	132	3.46	106
4	74	4.62	59
5	48	5.77	38

Standard MR16

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Beam angle	Candela	CCT (K)	Life(h)	Pack Qty	Product Code
ø 50 mm – open dichroic mirror											
20	12	**M69/BAB/STD**	GU5.3	48	50	36	440	3000	3000	10	**27460**
35	12	**M81/FMW/STD**	GU5.3	48	50	36	850	3000	3000	10	**27465**
50	12	**M58/EXN/STD**	GU5.3	48	50	36	1420	3000	3000	10	**27467**
ø 50 mm – closed dichroic mirror											
20	12	**M269/BAB/CG/STD**	GU5.3	50	50	36	440	3000	3000	10	**27473**
35	12	**M270/FRA/CG/STD**	GU5.3	50	50	12	6750	3000	3000	10	**27487**
35	12	**M281/FMW/CG/STD**	GU5.3	50	50	36	850	3000	3000	10	**27474**
50	12	**M250/EXZ/CG/STD**	GU5.3	50	50	12	8550	3000	3000	10	**27486**
50	12	**M258/EXN/CG/STD**	GU5.3	50	50	36	1420	3000	3000	10	**27475**
50	12	**M280/FNV/CG/STD**	GU5.3	50	50	55	580	3000	3000	10	**27476**

Precise™ Alutech™ MR16 – UV Control

ø 50 mm – closed aluminised coating											
20	12	**M269/BAB/CG/AL**	GU5.3	50.5	50.7	36	450	3000	3000	10	**88216**
35	12	**M281/FMW/CG/AL**	GU5.3	50.5	50.7	36	1300	3000	3000	10	**88217**
50	12	**M258/EXN/CG/AL**	GU5.3	50.5	50.7	36	1800	3000	3000	10	**88215**
50	12	**M280/FNW/CG/AL**	GU5.3	50.5	50.7	60	700	3000	3000	10	**88214**

MR16 Start

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Beam angle	Candela	CCT (K)	Life(h)	Pack Qty	Product Code
ø 50 mm – open dichroic mirror											
20	12	**M69/BAB/EC**	GU5.3	47.6	50.5	36	500	2900	2000	20	**38000**
35	12	**M81/FMW/EC**	GU5.3	47.6	50.5	36	925	3000	2000	20	**38001**
50	12	**M50/EXZ/EC**	GU5.3	47.6	50.5	24	2700	3000	2000	20	**39874**
50	12	**M58/EXN/EC**	GU5.3	47.6	50.5	36	1500	3000	2000	20	**38002**
ø 50 mm – closed dichroic mirror											
20	12	**M268/ESX/CG/EC**	GU5.3	47.6	50.5	12	3150	2900	2000	20	**38012**
20	12	**M269/BAB/CG/EC**	GU5.3	47.6	50.5	36	450	2900	2000	20	**38006**
35	12	**FRB/CG/EC**	GU5.3	47.6	50.5	12	6750	3000	2000	20	**38013**
35	12	**M281/FMW/CG/EC**	GU5.3	47.6	50.5	36	830	3000	2000	20	**38007**
50	12	**M249/EXT/CG/EC**	GU5.3	47.6	50.5	12	8550	3000	2000	20	**38014**
50	12	**M250/EXZ/CG/EC**	GU5.3	47.6	50.5	24	2700	3000	2000	20	**39611**
50	12	**M258/EXN/CG/EC**	GU5.3	47.6	50.5	36	1350	3000	2000	20	**38011**
50	12	**M280/FNV/CG/EC**	GU5.3	47.6	50.5	55	630	3000	2000	20	**39236**

MR16 IR

Watts	Volts	Product Description	Cap	Length (mm)	Diameter	Beam angle	Candela	CCT (K)	Life(h)	Pack Qty	Product Code
20	12	**M270/FRA/CG IR**	GU5.3	50	50,7	24	2300	3000	5000	20	**45245**
20	12	**M281/FMW/CG IR**	GU5.3	50	50,7	36	1000	3000	5000	20	**45240**
35	12	**M250/EXV/CG IR**	GU5.3	50	50,7	24	4400	3000	5000	20	**45239**
35	12	**M258/EXN/CG IR**	GU5.3	50	50,7	36	2200	3000	5000	20	**45244**

Precise™ MR11 – UV Control

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Beam angle	Candela	CCT (K)	Life (h)	Pack	Product Code
ø 35 mm – open dichroic mirror											
12	12	**M64/FTA**	GU4	40	35.3	8	4400	2900	2000	10	**19637**
20	12	**M52/FTB**	GU4	40	35.3	10	4400	2900	3500	10	**19998**
20	12	**M51/FTC**	GU4	40	35.3	17	2000	2900	3500	10	**19630**
20	12	**M62/FTD**	GU4	40	35.3	26	550	2900	3500	10	**19626**
35	12	**M65/FTE**	GU4	40	35.3	10	7000	2900	3500	10	**19641**
35	12	**M66/FTF**	GU4	40	35.3	21	2300	2900	3500	10	**19635**
35	12	**M199/FTH**	GU4	40	35.3	26	1300	2900	3500	10	**19634**
20	12	**M54/FST**	B15D	41	35.3	16	1760	2900	3500	10	**19687**
20	12	**M63/FSV**	B15D	41	35.3	30	600	2900	3500	10	**19997**
ø 35 mm – closed dichroic mirror											
12	12	**M264/FTA/CG**	GU4	45	35.3	8	3960	3200	2000	10	**19639**
20	12	**M252/FTB/CG**	GU4	45	35.3	10	3960	2900	3500	10	**19638**
20	12	**M251/FTC/CG**	GU4	45	35.3	17	1800	2900	3500	10	**19636**
20	12	**M262/FTD/CG**	GU4	45	35.3	26	490	2900	3500	10	**19625**
35	12	**M265/FTE/CG**	GU4	45	35.3	10	6300	3200	3500	10	**19640**
35	12	**M266/FTF/CG**	GU4	45	35.3	21	2070	2900	3500	10	**19627**



	Cap: GU4 12W			Cap: GU4 20W			Cap: B15D 20W			Cap: GU4 35W		
	Open		Closed	Open		Closed	Open		Closed	Open		Closed
m	**lux**	**8° Øm**	**lux**	**lux**	**10° Øm**	**lux**				**lux**	**10° Øm**	**lux**
1	4400	0.14	3960	4400	0.17	3960				7000	0.17	6300
2	1100	0.28	990	1100	0.35	990				1750	0.35	1575
3	489	0.42	440	489	0.52	440				778	0.52	700
4	275	0.56	248	275	0.70	248				438	0.70	394
5	176	0.70	158	176	0.87	158				280	0.87	252

m	**lux**	**17° Øm**	**lux**	**lux**	**16° Øm**		**lux**	**21° Øm**	**lux**
1	2000	0.30	1800	1760	0.28		2300	0.37	2070
2	500	0.60	450	440	0.56		575	0.74	518
3	222	0.90	200	196	0.84		256	1.11	230
4	125	1.20	113	110	1.12		144	1.48	129
5	80	1.49	72	70	1.41		92	1.85	83

m	**lux**	**26° Øm**	**lux**	**lux**	**30° Øm**		**lux**	**26° Øm**	
1	550	0.46	490	600	0.54		1300	0.46	
2	138	0.92	123	150	1.07		325	0.92	
3	61	1.39	54	67	1.61		144	1.39	
4	34	1.85	31	38	2.14		81	1.85	
5	22	2.31	20	24	2.68		52	2.31	

MR11 START

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Beam angle	Candela	CCT (K)	Life (h)	Pack	Product Code
20	12	**FTD/M262/CG**	GU4	45	35.3	26	490	2800	2000	10	**17200**
35	12	**FTF/M199/CG**	GU4	45	35.3	26	1150	2900	2000	10	**17201**

AR 111 Reflector

GE Halogen
Reflectors

AR 111

Bright, white halogen light quality (up to 2950K) for decorative and architectural lighting

- Aluminium facetted reflector for a better beam control
- Metal cap over filament to avoid direct glare effects and hot point
- UV-block to reduce bleaching effect
- Long life (3 000 hours) and 75%+ lumen maintenance to lower maintenance costs

UV - Block

- Choice of nominal beam angles from 8°to 45°
- From 35 to 100 Watt
- 75% lumen maintenance
- 12 volts – Cap G53
- Dimmable

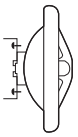
The GE AR111 aluminium facetted reflector has been designed to

- Direct light and heat forward to protect the gear (especially for electronic fixtures)
- To be used together with ConstantColor CMH™ 3000K to achieve the right lighting effect
- Use G53 cap for easy retrofit of the lamps
- Offer a slim shape to allow creative and compact design

Applications:

- display and accent lighting
- general lighting in retail

AR111 – UV Control



Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Beam angle	Candela	CCT (K)	Life(h)	Pack Qty	Product Code
ø 111 mm – aluminium reflector, metal cap over filament											
35	12	**AR111 35W12V SP**	G53	67	111	8	11000	2800	2000	10	**10774**
35	12	**AR111 35W12V FL**	G53	67	111	24	2400	2800	2000	10	**10775**
50	12	**AR111 50W12V SP**	G53	67	111	8	17800	2850	3000	10	**10766**
50	12	**AR111 50W12V FL**	G53	67	111	24	3000	2850	3000	10	**10767**
75	12	**AR111 75W12V SP**	G53	67	111	8	23500	2900	3000	10	**10768**
75	12	**AR111 75W12V FL**	G53	67	111	24	4750	2900	3000	10	**10769**
75	12	**AR111 75W12V WFL**	G53	67	111	45	1600	2900	3000	10	**10771**
100	12	**AR111 100W12V SP**	G53	67	111	8	43000	2950	3000	10	**41915**
100	12	**AR111 100W12V FL**	G53	67	111	24	7700	2950	3000	10	**41922**
100	12	**AR111 100W12V WFL**	G53	67	111	45	2400	2950	3000	10	**41923**

UV Control Capsules

All the power, quality and precision of halogen – with UV control

UV Control Capsules

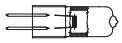
- The ultra violet light emitted by standard halogen lamps can cause fading or bleaching of sensitive display items.

- **GE's UV Control Capsules** significantly reduce the effect of bleaching by minimising UV-B and UV-C radiation.

GE's UV Control Capsules give maximum light output and colour quality.
The range includes axial filament types for use in linear miniature reflectors and uplighters, providing:
Wide, smooth beam with accurate light cut-off – perfect for uniform lighting effects.
Maximum versatility – common light-centres across a range of wattages let you use one light fitting design for a range of applications.

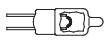
Applications:
- retail
- display and task lighting.

Low Voltage single ended halogen capsules UV-Control



Watts	Volts	Product Description	Cap	Length mm	LCL	Diameter mm	Lumen	Life (h)	Pack Qty	Product Code
Hard glass capsules with transversal filament										
5	12	**M9/H5 G4**	G4	33	19.5	9	60	2000	20	**42959**
10	12	**M11/H10 G4**	G4	33	19.5	9	140	2000	20	**34674**
Quartz glass capsules with transversal filament										
10	6	**M29/Q10 G4**	G4	33	19.5	9	200	100	20	**34720**
10	6	**M42/Q10 G4**	G4	33	19.5	9	140	2000	20	**34728**
20	6	**M30/ESB/Q20 G4**	G4	33	19.5	9	450	100	20	**34718**
20	6	**M34/FHE/Q20 G4**	G4	33	19.5	9	350	2000	20	**34719**
20	12	**M35/Q20 G4**	G4	33	19.5	9	400	250	20	**34714**
20	12	**M47/Q20 G4**	G4	33	19.5	9	380	2000	20	**34715**
20	12	**M312/Q20/GY6.35**	GY6.35	44	30.0	11	350	2000	20	**34713**
35	12	**M95/Q35/GY6.35**	GY6.35	44	30.0	11	550	3000	20	**34708**
50	12	**M32/Q50 GY6.35**	GY6.35	44	30.0	11	930	4000	20	**34702**
75	12	**M313/Q75/GY6.35**	GY6.35	44	30.0	11	1350	2000	20	**34682**
100	12	**M28/Q100 GY6.35**	GY6.35	44	30.0	11	2200	3000	20	**34676**
50	24	**M89/Q50/GY6.35 24V**	GY6.35	44	30.0	11	750	2000	20	**34684**
100	24	**M67/Q100 GY6.35 24V**	GY6.35	44	30.0	11	2000	2000	20	**34663**
Quartz glass capsules with axial filament										
20	12	**M76/Q20/GY6.35**	GY6.35	44	30.0	11	300	4000	20	**34712**
35	12	**M75/Q35/GY6.35**	GY6.35	44	30.0	11	600	4000	20	**34710**
50	12	**M74/Q50/GY6.35**	GY6.35	44	30.0	11	900	4000	20	**34703**
75	12	**M73/Q75/GY6.35**	GY6.35	44	30.0	11	1350	4000	20	**34683**
100	12	**M180/Q100/GY6.35**	GY6.35	44	30.0	11	2150	4000	20	**34664**
Low pressure halogen capsules with axial filament										
10	12	**Q10T2,5/12V G4**	G4	33	22	9	140	2000	20	**35705**
20	12	**Q20T2,5/12V G4**	G4	33	22	9	320	2000	20	**35710**
20	12	**Q20T3/12V GY6.35**	GY6.35	44	30	11	300	2000	20	**35696**
35	12	**Q35T3/12V GY6.35**	GY6.35	44	30	11	600	2000	20	**35699**
50	12	**Q50T3/12V GY6.35**	GY6.35	44	30	11	950	2000	20	**35700**
75	12	**Q75T3/12V GY6.35**	GY6.35	44	30	11	1350	2000	20	**35701**

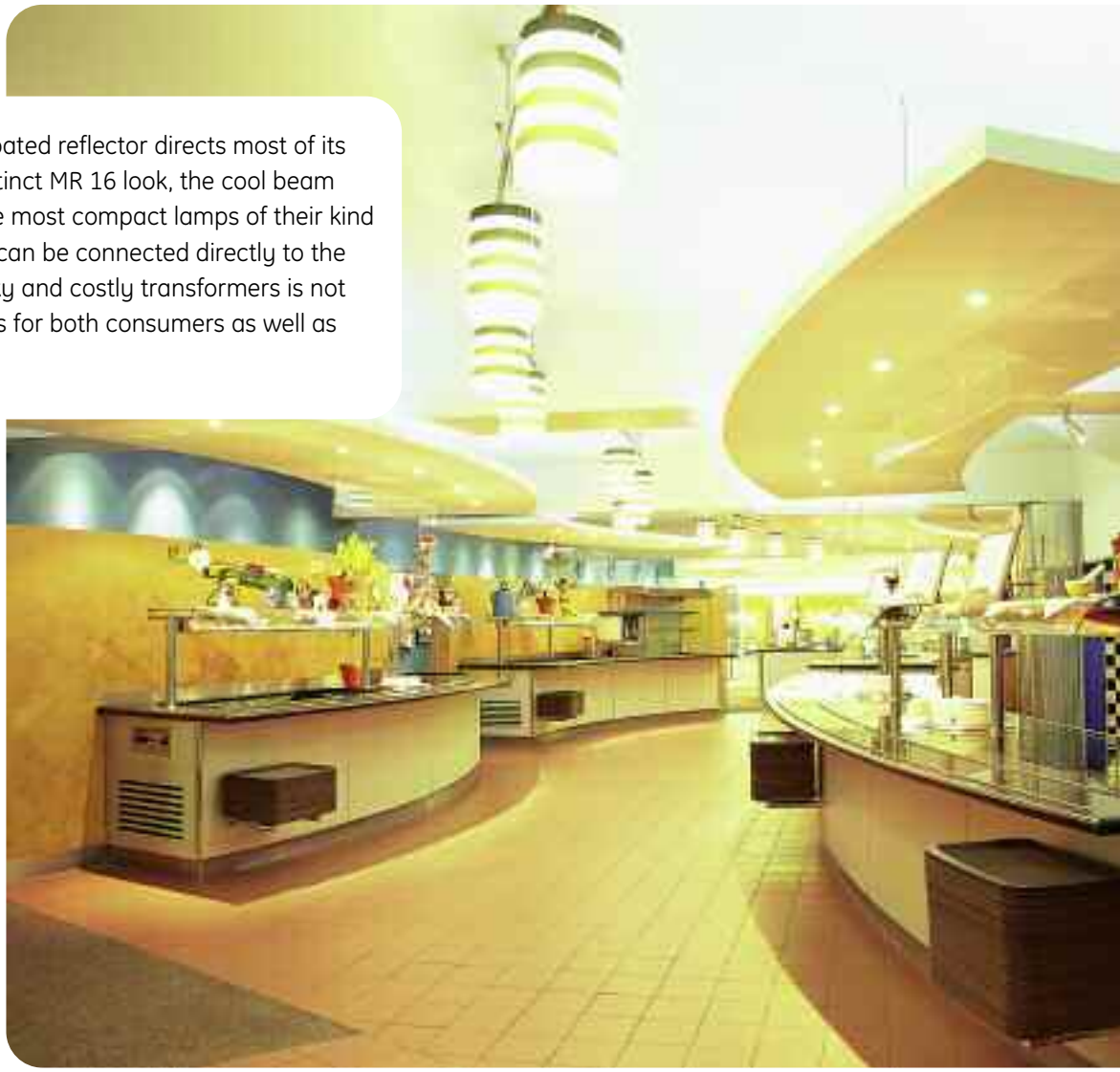
Low Voltage single ended halogen capsules START range



Watts	Volts	Product Description	Cap	Length mm	LCL	Diameter mm	Lumen	Life (h)	Pack Qty	Product Code
Quartz glass capsules with transversal filament										
10	12	**M11/Q10/G4 ST**	G4	33	22	9	100	1000	20	**12708**
20	12	**M47/Q20/G4 ST**	G4	33	22	9	250	1000	20	**12711**
35	12	**M95/Q35/GY6.35 ST**	GY6.35	44	30	11	480	1000	20	**12712**
50	12	**M32/Q50/GY6.35 ST**	GY6.35	44	30	11	800	1000	20	**12713**
100	12	**Q100/GY6.35 ST**	GY6.35	44	30	11	1950	1000	20	**12718**

Mains voltage halogen reflector

MR 16 Mains



A lamp with an aluminium coated reflector directs most of its heat to the front. With its distinct MR 16 look, the cool beam and aluminium lamps are the most compact lamps of their kind available. Because the lamp can be connected directly to the mains supply, the use of bulky and costly transformers is not necessary and offers benefits for both consumers as well as luminaire manufacturers.

- Small size
- High efficiency
- Excellent white light
- Up to 2000 hours life

Applications:
- retail display
- conference room
- reception areas

Halogen lamps
Mains voltage

MR16 Mains Tech

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Beam angle	Colour	Candela	CCT (K)	Life (h)	Pack Qty	Product Code
ø 50 mm – closed aluminium coated reflector												
50	230	**Q50MR16/230/25°**	GU10	57.5	51	25		950	2650	2000	1/50	**40402**
50	240	**Q50MR16/240/25°**	GU10	57.5	51	25		950	2650	2000	1/50	**40404**
50	230	**Q50MR16/230/36°**	GU10	57.5	51	36		600	2650	2000	1/50	**40403**
50	240	**Q50MR16/240/36°**	GU10	57.5	51	36		600	2650	2000	1/50	**40405**

MR20 Mains Tech

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Beam angle	Colour	Candela	CCT (K)	Life (h)	Pack Qty	Product Code
ø 64 mm – closed aluminium coated reflector												
75	240	**Q75MR16/240/25°**	GU10	64	64	25		2500	2900	2000	1/10	**19624**

MR16 Mains Start

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Beam angle	Colour	Candela	CCT (K)	Life (h)	Pack Qty	Product Code
ø 50 mm – closed aluminium coated reflector												
20	230	**Q20MR16/230/FL**	GU10	55	51	36		200	2700	1500	10	**10898**
35	230	**Q35MR16/230/FL**	GU10	55	51	36		400	2700	1500	10	**10896**
50	230	**Q50MR16/230/FL**	GU10	55	51	36		600	2700	1500	10	**92729**
20	240	**Q20MR16/240/FL**	GU10	55	51	36		200	2700	1500	10	**10859**
35	240	**Q35MR16/240/FL**	GU10	55	51	36		400	2700	1500	10	**10857**
50	240	**Q50MR16/240/FL**	GU10	55	51	36		600	2700	1500	10	**92730**

MR16 Mains Dichroic Start

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Beam angle	Colour	Candela	CCT (K)	Life (h)	Pack Qty	Product Code
ø 50 mm – closed dichroic reflector												
50	230	Q50MR16/230V/GZ10	GZ10	57.5	51	36		600	2650	1500	1/10	**18157**

MR16 Mains Start – Coloured

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Beam angle	Colour	CCT (K)	Life (h)	Pack Qty	Product Code
ø 50 mm – Closed											
50	240	**Q50MR16/240/FL START**	GU10	55	51	36	RED		1500	10	**12988**
50	240	**Q50MR16/240/FL START**	GU10	55	51	36	BLUE		1500	10	**12995**
50	240	**Q50MR16/240/FL START**	GU10	55	51	36	GREEN		1500	10	**12998**
50	240	**Q50MR16/240/FL START**	GU10	55	51	36	YELLOW		1500	10	**13003**

G9 capsule

Suitable for a wide variety of applications in display, accent and general where halogen light quality is essential with the ease of mains voltage where no transformer is required.

Short G9

G9 capsule has been designed to

- offer a miniature halogen solution to allow creative and compact design of fittings
- be fully compatible with ConstantColor™ CMH 3000 K lamps
- use G9 Cap for easy retrofit of the lamps used in open fixtures
- meet IEC standards IEC60357, IEC60432-2 and IEC60061-1 for performance, safety and base compliance.
- operate on mains voltage, no transformer required.

Applications:

- display
- accent
- general lighting

Single ended mains voltage capsule – Tech Range

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Lumen	CCT (K)	Life (h)	Pack Qty	Energy Effciency Class	Product Code
Halo Capsule Short G9 clear – UV Control											
25	**230**	**SHORTG9 25W CL 230V**	G9	43	13	260	2800	1500	10	D	**45692**
25	**240**	**SHORTG9 25W CL 240V**	G9	43	13	260	2800	1500	10	D	**26318**
40	**230**	**SHORTG9 40W CL 230V**	G9	43	13	490	2800	2000	10	D	**22504**
40	**240**	**SHORTG9 40W CL 240V**	G9	43	13	490	2800	2000	10	D	**22498**
60	**230**	**SHORTG9 60W CL 230V**	G9	43	13	820	2800	2000	10	D	**22513**
60	**240**	**SHORTG9 60W CL 240V**	G9	43	13	820	2800	2000	10	D	**22508**
75	**230**	**SHORTG9 75W CL 230V**	G9	43	13	1100	2800	2000	10	D	**23517**
75	**240**	**SHORTG9 75W CL 240V**	G9	43	13	1100	2800	2000	10	D	**23518**
frosted											
25		**230 SHORTG9 25W FR 230V**	G9	43	13	260	2800	1500	10	D	**45693**
25		**240 SHORTG9 25W FR 240V**	G9	43	13	260	2800	1500	10	D	**45693**
40		**230 SHORTG9 40W FR 230V**	G9	43	13	490	2800	2000	10	D	**22507**
40		**240 SHORTG9 40W FR 240V**	G9	43	13	490	2800	2000	10	D	**22501**
60		**230 SHORTG9 60W FR 230V**	G9	43	13	820	2800	2000	10	D	**22515**
60		**240 SHORTG9 60W FR 240V**	G9	43	13	820	2800	2000	10	D	**22510**
75		**230 SHORTG9 75W FR 230V**	G9	43	13	1100	2800	2000	10	D	**23521**
75		**240 SHORTG9 75W FR 240V**	G9	43	13	1100	2800	2000	10	D	**23532**

Mains voltage double-ended halogen lamps

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Lumen	CCT (K)	Life (h)	Pack Qty	Energy Effciency Class	Product Code
Start clear											
200	230	**K11/230V ST**	R7s	117.6	8	2A	2850	1500	10	E	**93471**
300	230	**K9/230V ST**	R7s	117.6	8	2A	4600	1500	10	E	**93472**
500	230	**K1/230V ST**	R7s	117.6	8	4A	9000	1500	10	E	**93473**
200	240	**K11/240V ST**	R7s	117.6	8	2A	2850	1500	10	E	**93475**
300	240	**K9/240V ST**	R7s	117.6	8	2A	4600	1500	10	E	**93476**
500	240	**K1/240V ST**	R7s	117.6	8	4A	9000	1500	10	E	**93477**
Standard clear											
100	120	**K14/Q100 120V/CL**	R7s	78.3	8	–	1500	3000	10	D	**91746**
150	120	**K12/Q150 120V/CL**	R7s	78.3	8	–	2300	3000	10	E	**91747**
100	230	**K14/Q100 T2.5/CL**	R7s	78.3	8	–	1600	2000	10	D	**91427**
150	230	**K12/Q150 T2.5/CL**	R7s	78.3	8	–	2600	2000	10	D	**91428**
200	230	**K27/Q150 T2.5/CL**	R7s	78.3	8	–	3400	2000	10	D	**91430**
250	230	**K15/Q250 T2.5/CL**	R7s	78.3	8	–	4000	2000	10	E	**91431**
100	240	**K14/Q100 T2.5/CL**	R7s	78.3	8	–	1600	2000	10	D	**91506**
150	240	**K12/Q150 T2.5/CL**	R7s	78.3	8	–	2600	2000	10	D	**91507**
200	240	**K27/Q150 T2.5/CL**	R7s	78.3	8	–	3400	2000	10	D	**91508**
250	240	**K15/Q250 T2.5/CL**	R7s	78.3	8	–	4000	2000	10	E	**91509**
150	120	**K28/Q150 120V/CL**	R7s	117.6	8	2A	2300	2000	10	E	**91748**
200	120	**K11/Q200 120V/CL**	R7s	117.6	8	4A	3300	2000	10	D	**91749**
300	120	**K9/Q300 120V/CL**	R7s	117.6	8	4A	6200	2000	10	D	**91750**
500	120	**K1/Q500 120V/CL**	R7s	117.6	8	6.3A	11000	2000	10	C	**29161**
1000	120	**K4/Q1000 120V/CL**	R7s	189.1	10		22000	2000	10	D	**29177**
100	230	**K41/Q100 CL**	R7s	117.6	8	2A	1050	1500	10	F	**91432**
150	230	**K28/Q150 T2.5/CL**	R7s	117.6	8	2A	2100	2000	10	E	**91433**
200	230	**K11/Q200 T2.5/CL**	R7s	117.6	8	2A	3100	2000	10	E	**91434**
250	230	**K32/Q250 T2.5/CL**	R7s	117.6	8	2A	4000	2000	10	E	**91435**
300	230	**K9/Q300 T2.5/CL**	R7s	117.6	8	2A	5100	2000	10	E	**91436**
500	230	**K1/Q500 T2.5/CL**	R7s	117.6	8	4A	9800	2000	10	D	**29165**
750	230	**K3/Q750 T3/CL**	R7s	189.1	10	6.3A	15000	2000	10	D	**29173**
1000	230	**K4/Q1000 T3/CL**	R7s	189.1	10	6.3A	21000	2000	10	D	**29180**
1000	230	**K10/1000 T3/CL**	R7s	254.1	10	6.3A	21000	2000	6	D	**43711**
1500	230	**K5/Q1500 T3/CL**	R7s	254.1	10	10A	32000	1000	10	D	**29184**
2000	230	**K6/Q2000 T3/CL**	Fa4	334.4	10	10A	44000	2000	10	D	**29190**
2000	230	**K8/Q2000 T3/CL**	R7s	330.8	10	10A	44000	1000	10	D	**30886**
150	240	**K28/Q150 T2.5/CL**	R7s	117.6	8	2A	2100	2000	10	E	**91511**
200	240	**K11/Q200 T2.5/CL**	R7s	117.6	8	2A	3100	2000	10	E	**91512**
250	240	**K32/Q250 T2.5/CL**	R7s	117.6	8	2A	4000	2000	10	E	**91513**
300	240	**K9/Q300 T2.5/CL**	R7s	117.6	8	2A	5100	2000	10	E	**91514**
500	240	**K1/Q500 T2.5/CL**	R7s	117.6	8	4A	9700	2000	10	D	**29168**
750	240	**K3/Q750 T3/CL**	R7s	189.1	10	6.3A	15000	2000	10	D	**29176**
1000	240	**K4/Q1000 T3/CL**	R7s	189.1	10	6.3A	21000	2000	10	D	**29181**
1000	240	**K10/1000 T3/CL**	R7s	254.1	10	6.3A	21000	2000	6	D	**43712**
1500	240	**K5/Q1500 T3/CL**	R7s	254.1	10	10A	32000	1000	10	D	**29187**
2000	240	**K8/Q2000 T3/CL**	R7s	330.8	10	10A	44000	1000	10	D	**30877**

78 mm lamps are internally fused, and universal operating position. Other lamps operating position horizontal ±4°.

Halogen IR™

225	230	**K9/Q225 T3/230V HIR**	R7s	117.6	10	2A	5000	2000	10	C	**91515**
375	230	**K1/Q375 T3/230V HIR**	R7s	117.6	10	2A	9400	2000	10	C	**31598**

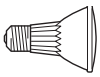
Operating position horizontal ±4°.

Halogen PAR lamps

PAR 16

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Beam angle	Candela	CCT (K)	Life(h)	Pack Qty	Product Code
Flood											
40	230	**40PAR16/230/FL**	E14	79	50	36	450	2900	2000	10	**27826**
40	240	**40PAR16/240/FL**	E14	79	50	36	450	2900	2000	10	**27845**

PAR 20



Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Beam angle	Candela	CCT (K)	Life(h)	Pack Qty	Product Code
Spot											
50	230	**50PAR20/230/SP**	E27	91	64.5	10	3000	2750	2000	1/15	**40363**
50	240	**50PAR20/240/SP**	E27	91	64.5	10	3000	2750	2000	1/15	**40364**
Flood											
50	230	**50PAR20/230/FL**	E27	91	64.5	30	1000	2750	2000	1/15	**40362**
50	240	**50PAR20/240/FL**	E27	91	64.5	30	1000	2750	2000	1/15	**40365**

PAR 25

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Beam angle	Candela	CCT (K)	Life(h)	Pack Qty	Product Code
Flood											
75	230	**75PAR25/230/FL**	E27	108	81	25	1300	2900	3000	15	**91775**
75	240	**75PAR25/240/FL**	E27	108	81	25	1300	2900	3000	15	**92165**

PAR 30

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Beam angle	Candela	CCT (K)	Life(h)	Pack Qty	Product Code
Spot											
75	230	**75PAR30/230/SP**	E27	90.5	97	10	6900	2900	2000	15	**40366**
75	240	**75PAR30/240/SP**	E27	90.5	97	10	6900	2900	2000	15	**40367**
Flood											
75	230	**75PAR30/230/FL**	E27	90.5	97	30	2200	2900	2000	15	**40349**
100	230	**100PAR30/230/FL**	E27	90.5	97	30	3500	2900	3000	15	**32484**
75	240	**75PAR30/240/FL**	E27	90.5	97	30	2200	2900	2000	15	**40361**
100	240	**100PAR30/240/FL**	E27	90.5	97	30	3500	2900	3000	15	**32482**

PAR 16 – PAR 20 – PAR 25 – PAR 30

	40W				**50W**				**75W**				**100W**	
	PAR 16		PAR 16 Start		PAR 20 **Spot 10°**		PAR 25 **Spot 10°**		PAR 25 **Spot 10°**		PAR 30 **Spot 10°**		PAR 30 **Spot 10°**	
m					**Øm**	**lux**	**Øm**	**lux**	**Øm**	**lux**	**Øm**	**lux**	**Øm**	**lux**
1					0.17	3000	0.17	4000	0.17	5500	0.17	6900	0.17	10000
2					0.35	750	0.35	1000	0.35	1375	0.35	1725	0.35	2500
3					0.52	333	0.52	444	0.52	611	0.52	767	0.52	1111
4					0.70	188	0.70	250	0.70	344	0.70	431	0.70	625
5					0.87	120	0.87	160	0.87	220	0.87	276	0.87	400

	Flood 25°		**Flood 36°**		**Flood 30°**		**Flood 25°**		**Flood 25°**		**Flood 30°**		**Flood 30°**	
m	**Øm**	**lux**	**Øm**	**lux**	**Øm**	**lux**	**Øm**	**lux**	**Øm**	**lux**	**Øm**	**lux**	**Øm**	**lux**
1	0.44	950	0.65	800	0.54	1000	0.44	1100	0.44	1300	0.54	2200	0.54	3500
2	0.89	238	1.30	200	1.07	250	0.89	275	0.89	325	1.07	550	1.07	875
3	1.33	106	1.95	89	1.61	111	1.33	122	1.33	144	1.61	244	1.61	389
4	1.77	59	2.60	50	2.14	63	1.77	69	1.77	81	2.14	138	2.14	219
5	2.22	38	3.25	32	2.68	40	2.22	44	2.22	52	2.68	88	2.68	140

HaloReflector, HaloCandle and Halolightbulb

HaloReflectors provide up to 20% more light

HaloReflectors

HaloCandle – Chandeliers will sparkle even more with halogen light

HaloCandle

HaloGLS – Upgrade the light quality with a traditional light bulb shape

HaloGLS

New GE halogen lamps for the perfect atmosphere for home applications.

HaloReflector

- Flicker free light reduces eye strain
- R80, R63 R50 reflector bulb for all purposes
- 40W, 60W, 100W

HaloCandle

- Candle and twisted candle shapes enriches your home
- Clear candle to maximise light, frosted candle to reduce glare
- 40W, 60W

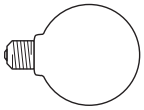
HaloGLS

- Save energy, get more light with the same power
- More compact (50 mm) standard light bulb shape
- 40W, 60W

New halogen technology opens new dimension for home and retail lighting. On average creates 20% more light than a standard incandescent light bulb. A 60W HaloGLS is equivalent to a 72W incandescent lamp. Dimming makes it even more economical. A range of familiar shapes have been developed to be suitable for available fittings. In addition to this you can enjoy products of the Halogen family for 2000 hours in your home, twice as long than before.

Halogen lamps
Mains voltage

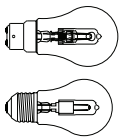
HaloGlobe™



Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Lumen	CCT (K)	Life (h)	Pack Qty	Energy Effciency Class	Product Code
white											
60	**230**	**HaloG95/60W/W 230V E27**	E27	138.5	95	700	2850	2000	10	E	**92534**
100	**230**	**HaloG95/100W/W 230V E27**	E27	138.5	95	1350	2850	2000	10	E	**92535**
150	**230**	**HaloG95/150W/W 230V E27**	E27	138.5	95	2100	2850	2000	10	E	**92536**

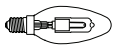
Operating position: Universal.

HaloGLS



Watts	Volts	Product Description	Cap	Length mm	Lumen	CCT(K)	Life (h)	Pack Qty	Energy Effciency Class	Product Code
clear - UV control										
40	240	**Halo A/Cl/40W/B22 240V**	B22	108.5	490	2800	1500	10	D	**21398**
40	230	**Halo A/Cl/40W/E27 230V**	E27	50	490	2800	1500	10	D	**21402**
60	240	**Halo A/Cl/60W/B22 240V**	B22	108.5	820	2800	2000	10	D	**21395**
60	240	**Halo A/Cl/60W/E27 240V**	E27	110	820	2800	2000	10	D	**21385**
60	230	**Halo A/Cl/60W/E27 230V**	E27	110	820	2800	2000	10	D	**21400**
frosted - UV control										
40	240	**Halo A/Fr/40W/B22 240V**	B22	108.5	490	2800	1500	10	D	**21399**
40	230	**Halo A/Fr/40W/E27 230V**	E27	110	490	2800	1500	10	D	**21403**
60	240	**Halo A/Fr/60W/E27 240V**	E27	110	820	2800	2000	10	D	**21386**
60	240	**Halo A/Fr/60W/B22 240V**	B22	108.5	820	2800	2000	10	D	**21397**
60	230	**Halo A/Fr/60W/E27 230V**	E27	110	820	2800	2000	10	D	**21401**

HaloCandle

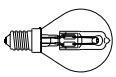


Watts	Volts	Product Description	Cap	Length mm	Lumen	CCT(K)	Life (h)	Pack Qty	Energy Effciency Class	Product Code
clear - UV control										
40	230	**HaloC/Cl/40W/E14 230V**	E14	104	490	2800	1500	10	D	**43321**
40	240	**HaloC/Cl/40W/E14 240V**	E14	104	490	2800	1500	10	D	**21499**
40	230	**HaloC/Cl/40W/B22 240V**	B22	97	490	2800	2000	10	D	**43324**
60	230	**HaloC/Cl/60W/E 14 230V**	E14	104	820	2800	2000	10	D	**43323**
60	240	**HaloC/Cl/60W/B22 240V**	B22	97	820	2800	2000	10	D	**43326**
60	240	**HaloC/Cl/60W/E 14 240V**	E14	104	820	2800	2000	10	D	**21505**
frosted - UV control										
40	230	**HaloC/Fr/40W/E14 230V**	E14	104	490	2800	1500	10	D	**43327**
40	240	**HaloC/Fr/40W/B22 240V**	B22	97	490	2800	2000	10	D	**43332**
40	240	**HaloC/Fr/40W/E14 240V**	E14	104	490	2800	1500	10	D	**22760**
60	230	**HaloC/Fr/60W/E14 230V**	E14	104	820	2800	2000	10	D	**43329**
60	240	**HaloC/Fr/60W/B22 240V**	B22	97	820	2800	2000	10	D	**43335**
60	240	**HaloC/Fr/60W/E14 240V**	E14	104	820	2800	2000	10	D	**22783**

Twisted Candle

Watts	Volts	Product Description	Cap	Length mm	Lumen	CCT(K)	Life (h)	Pack Qty	Energy Effciency Class	Product Code
clear - UV control										
40	230	**HaloC/TWCL/40W/E14 230V**	E14	104	490	2800	1500	10	D	**21490**
40	240	**HaloC/TWCL/40W/E14 240V**	E14	104	490	2800	1500	10	D	**22779**
60	230	**HaloC/TWCL/60W/E14 230V**	E14	104	820	2800	2000	10	D	**22781**
60	240	**HaloC/TWCL/60W/E14 240V**	E14	104	820	2800	2000	10	D	**21506**
Frosted - UV control										
40	230	**HaloC/TWFR/40W/E14 230V**	E14	104	490	2800	1500	10	D	**21495**
40	240	**HaloC/TWFR/40W/E14 240V**	E14	104	490	2800	1500	10	D	**22780**
60	230	**HaloC/TWFR/60W/E14 230V**	E14	104	820	2800	2000	10	D	**22782**
60	240	**HaloC/TWFR/60W/E14 240V**	E14	104	820	2800	2000	10	D	**22775**

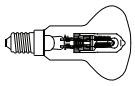
HaloSpherical



Watts	Volts	Product Description	Cap	Length mm	Lumen	CCT(K)	Life (h)	Pack Qty	Energy Effciency Class	Product Code
clear - UV control										
25	230	**25HALOSPH/CL G9B**	E14	78.5	250	2800	1500	10	D	**44694**
40	230	**40HALOSPH/CL G9B**	E14	78.5	470	2800	2000	10	D	**44720**
60	230	**60HALOSPH/CL G9B**	E14	78.5	790	2800	2000	10	D	**44722**
25	230	**25HALOSPH/FR G9B**	E14	78.5	250	2800	1500	10	D	**44741**
40	230	**40HALOSPH/FR G9B**	E14	78.5	470	2800	2000	10	D	**44740**
60	230	**60HALOSPH/FR G9B**	E14	78.5	790	2800	2000	10	D	**44728**

HaloReflector

Watts	Volts	Product Description	Cap	Length mm	Candela	CCT(K)	Life (h)	Pack Qty	Energy Effciency Class	Product Code
Satin- UV control										
40	230	**HAL 40R50/E14 230V**	E14	84	290	2800	2000	10	NA	**23503**
40	240	**HAL 40R50/E14 240V**	E14	84	290	2800	2000	10	NA	**43266**
60	240	**HAL 60R63/E27 230V**	E27	103	640	2800	2000	10	NA	**23504**
60	240	**HAL 60R63/E27 240V**	E27	103	640	2800	2000	10	NA	**43267**
60	230	**HAL 60R80/E27 230V**	E27	113	280	2800	2000	10	NA	**23505**
60	240	**HAL 60R80/E27 240V**	E27	113	280	2800	2000	10	NA	**45442**
100	230	**HAL 100R80/E27 230V**	E27	113	540	2800	1500	10	NA	**23506**
100	240	**HAL 100R80/E27 240V**	E27	113	540	2800	1500	10	NA	**45441**



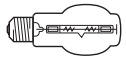
HaloKrypton

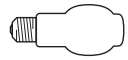
Watts	Volts	Product Description	Cap	Length mm	Lumen	Life (h)	Pack Qty	Energy Effciency Class	Product Code
clear									
40	230V	40HALOKRYP/E27 230V	E27	490	2800	2000	10	D	44683
60	230V	60HALOKRYP/E27 230V	E27	820	2800	2000	10	D	44670
75	230V	75HALOKRYP/E27 230V	E277	1100	2800	2000	10	D	44666
40	240V	40HALOKRYP/B22 240V	B22	490	2800	2000	10	D	44649
60	240V	60HALOKRYP/B22 240V	B22	820	2800	2000	10	D	44710
75	240V	75HALOKRYP/B22 240V	B22	1100	2800	2000	10	D	44709

HaloBTT™

Watts	Volts	Product Description	Cap	Length mm	Diameter mm	Lumen	Life (h)	Pack Qty	Energy Effciency Class	Product Code
clear										
60	230	**HaloBTT/60W/CL 230V E27**	E27	120	47	820	2000	10	D	**90779**
100	230	**HaloBTT/100W/CL 230V E27**	E27	120	47	1550	2000	10	D	**90780**
150	230	**HaloBTT/150W/CL 230V E27**	E27	120	47	2600	2000	10	D	**90781**
60	240	**HaloBTT/60W/CL 230V E27**	E27	120	47	820	2000	10	D	**90782**
100	240	**HaloBTT/100W/CL 230V E27**	E27	120	47	1550	2000	10	D	**90783**
60	240	**HaloBTT/60W/CL 230V B22**	B22	120	47	820	2000	10	D	**90784**
100	240	**HaloBTT/100W/CL 230V B22**	B22	120	47	1550	2000	10	D	**90785**
white										
60	230	**HaloBTT/60W/W 230V E27**	E27	120	47	700	2000	10	E	**90299**
100	230	**HaloBTT/100W/W 230V E27**	E27	120	47	1350	2000	10	E	**90308**

Operating position: Universal.





HaloTubular

Watts	Volts	Product Description	Cap	Length mm	Lumen	CCT(K)	Life (h)	Pack Qty	Energy Effciency Class	Product Code
clear										
40	230	**40HaloTub G9B**	E14	84.5	2800	2000	2000	50	E	**43290**
60	230	**60HaloTub G9B**	E14	84.5	2800	2000	2000	50	E	**43292**
60	240	**60HaloTub G9B**	E14	84.5	2800	2000	2000	50	E	**43298**
100	230	**J89 TUBHAL**	E14	74	1350	2800	1500	50	E	**93700**
150	230	**J90 TUBHAL**	E14	74	2150	2800	1500	50	E	**93701**
250	230	**J92 TUBHAL**	E14	74	3850	2800	1500	50	E	**93702**

HaloT38

Watts	Volts	Product Description	Cap	Length mm	Lumen	Life (h)	Pack Qty	Energy Effciency Class	Product Code
clear									
500	230	**Halo T38/500W/E40/230**	E40	215	9500	2000	10	D	**32106**
1000	230	**Halo T38/1000W/E40/230**	E40	280	21000	2000	10	D	**32108**
500	240	**Halo T38/500W/E40/240**	E40	215	9500	2000	10	D	**32107**
1000	240	**Halo T38/1000W/E40/240**	E40	280	21000	2000	10	D	**32109**

Operating position: Horizontal ±4°.

Halogen lamps

Halogen lamps provide a compact, high output light source popular for accent, display and general lighting applications in a wide variety of commercial, industrial and residential environments.

Choosing the right lamp

To help you achieve the most effective spread and level of illumination for your particular application, use the performance cones shown in this catalogue.

Assessing performance cones

Performance cones show the area, strength and distribution of light produced by each lamp. This varies according to the level of illuminance produced by the lamp (lux), the height of the lamp above the object being illuminated, and the beam angle of the lamp selected.

Selecting power and beam

Comparing performance cones lets you select the correct lamp for your needs. For example, GE's most commonly used mirror lamp, the 50W EXZ Precise™ MR16 ConstantColor™ with a beam angle of 25°, would produce 700 lux at 2 metres high with a beam diameter of 0.9 metres.

If, however, you wanted a smaller beam diameter of say 0.4 metres, the 20W spot beam ESX with its narrower 12° beam angle would be more effective, producing 838 lux. This would provide 15% extra luminance with a 60% reduction in energy consumption.

Selecting beam angles

GE halogen lamps are offered in a range of beam angles from 8° to 60°. Choose small beam angles to highlight single features with a tight focus, wide beam angles to provide a wash of ambient lighting achieve a variety of effects with intermediate beams.

Figure 1

Choosing the right power and beam

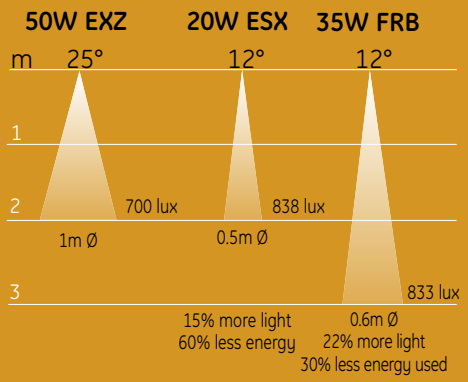
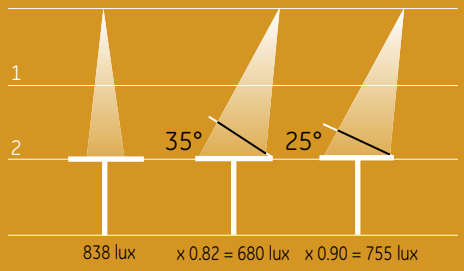


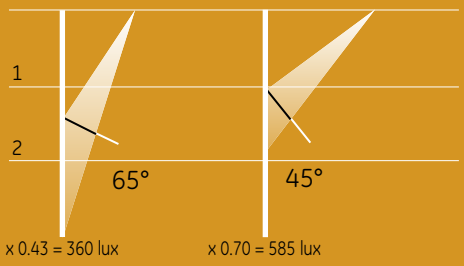
Figure 2

Choosing beam angles

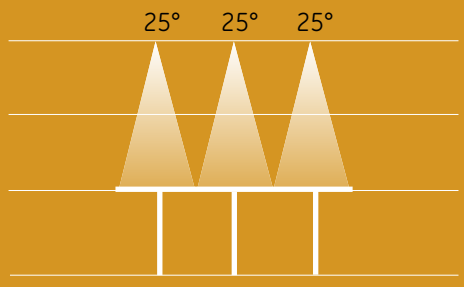
20W ESX 12°



20W ESX



3 x 50W EXZ lamps



Uniform performance

The performance cones can also provide a quick guide for achieving uniformity of illuminance on a horizontal plane

General information

Select UV control

Tungsten halogen lamps emit some ultra violet rays similar to sunlight. Although the level of ultra violet emitted by halogen lamps is far lower – for example 8 hours in an office lit by halogen is equivalent to 10 minutes' sun eliminating these emissions is a sensible precaution. Choosing UV control halogen lamps effectively eliminates UV-C and greatly reduces UV-B radiation.

How to achieve maximum lamp performance

Most instances of early failure of halogen lamps are caused by incorrect installation. The risk of early failure will be reduced if you observe the following points:

- **Damage such** as bent pins and cracks in the base caused by rough handling during installation.

- **Poor electrical contact** between pins and lampholder which can lead to arcing. This is usually a result of insufficient insertion of the pins into the lamp holder.

- **Finger grease** on the quartz bulb which creates local hot spots and can lead to disintegration of the glass. Note this problem is avoided with sealed mirror reflectors or lamps with an integral outer glass envelope as the halogen bulb is protected from handling.

- **Over voltage** – running a lamp at higher than rated voltage for prolonged periods can substantially reduce life. For example, a 5% increase in rated lamp voltage can lead to a 50% reduction in lamp life. If problems occur the voltage should be checked at the lamp base and the rating of the transformer should be checked against the lamp load applied.

- **Overheating** is usually caused by insufficient ventilation or cooling of the lamp and can be the result of poorly designed installation. Overheating can be also caused by overvoltage, insertion of a dichroic reflector in closed fittings or usage of a higher wattage lamp than the fixture allows.

- **Open lamps** should only be used within a shield, except self-shielded tungsten halogen lamps.

Atmospheric factors

In harsh atmospheric conditions we would recommend ConstantColor™ which has a much more resilient coating plus the added advantage of 6000 hours. Humidity does not normally present a problem with dichroic lamps, however early lamp failure can occur in areas of high humidity such as in kitchens, bathrooms and swimming pools. In these applications, fittings should be chosen with a moisture resistance or IP rating, appropriate to the environmental conditions in which they will be used.