GE
Lighting

WORLDWIDE PARTNER

DATA SHEET

Halogen DEQ and IR™ DEQ

Mains Voltage Double Ended Halogen Linear Lamps

100W, 130W, 200W, 225W, 330W, 375W, 1000W, 1500W and 2000W with R7s cap

Product information

Housing in a clear quartz bulb, these halogen floodlighting lamps have a ceramic one-pin cap on each end and can be operated on 230V or 240V mains.

Halogen-IR™ technology

In standard incandescent and halogen lamps approximately 76% of the input energy is lost as heat radiation, whilst only 8% is converted to useful light (the rest is lost in the area of the filament).

The Halogen-IR™ thin film, consisting of multiple layers of very durable, thin, interference films, reflects much of the heat back onto the lamp filament, while allowing the visible light to pass through. This increases the filament temperature which allows it to give off more visible light for the same input power.

This increase in efficacy can be used to reduce the required energy input for the same light output, to increase the life of the lamp, or a combination of both.

Features

- High efficacy
- Stable colour temperature
- Excellent lumen maintenance
- Instant startup
- Life up to 2,000 hours
- Dimmable
- All DEQ lamps are rated to C energy class

Applications

- Indoor: residential
- Outdoor lighting: used externally for floodlighting and security lighting

IEC Standards

GE tungsten halogen lamps comply with the following international standards where applicable:

- IEC 60432-3 Tungsten Halogen Lamps Safety Standard
- IEC 60357 Tungsten Halogen Lamps Performance Standard
- IEC 60061 Lamp Caps & Holders

GE imagination at work

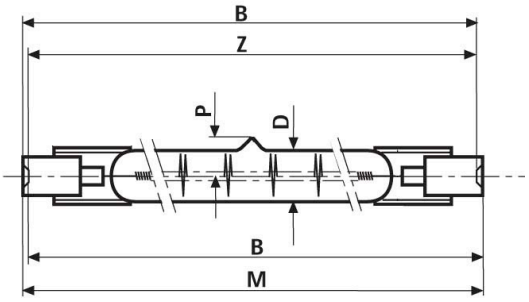
Basic data

Wattage [W]	Rated Wattage [W]	Volt [V]	Cap type	Product Description	Product Code Box	Product Code Blister	Lumen	Colour Temperature [K]	Life [h]	Length [mm]	Diameter [mm]	Switching cycle [on/off]	Warm up time	Energy class	Pack qty
100	100,0	230	R7s	K12 C100W 230V R7S 78MM	76210	76526	1900	2900	1,000	78	8	4000	instant on	C	10
100	100,0	240	R7s	K12 C100W 240V R7S 78MM	76530	76534	1900	2900	1,000	78	8	4000	instant on	C	10
130	130,0	230	R7s	K11 C130W 230V R7S 117MM	76209	76525	2440	2900	1,000	117.6	8	4000	instant on	C	10
130	130,0	240	R7s	K11 C130W 240V R7S 117MM	76529	76533	2440	2900	1,000	117.6	8	4000	instant on	C	10
200	200,0	230	R7s	K9 C200W 230V R7S 117MM	76208	76219	4000	3000	1,000	117.6	8	4000	instant on	C	10
200	200,0	240	R7s	K9 C200W 240V R7S 117MM	76528	76532	4000	3000	1,000	117.6	8	4000	instant on	C	10
225	225,0	230	R7s	K9/HIR 225W 230V R7S 117MM	91515	19748	5000	3100	2,000	117.6	10	8000	instant on	C	10
225	225,0	240	R7s	K9/HIR 225W 240V R7S	43299	93150	5000	3100	2,000	117.6	10	8000	instant on	C	10
330	330,0	230	R7s	K1 C330W 230V R7S 117MM	76207	76216	7400	3000	1,000	117.6	8	4000	instant on	C	10
330	330,0	240	R7s	K1 C330W 240V R7S 117MM	76527	76531	7400	3000	1,000	117.6	8	4000	instant on	C	10
375	375,0	230	R7s	K1/HIR 375W 230V R7S 117MM	31598	19749	9400	3100	2,000	117.6	10	8000	instant on	C	10
375	375,0	240	R7s	K1/HIR 375W 240V R7S 117MM	31612	93151	9400	3100	2,000	117.6	10	8000	instant on	C	10
1000	1000,0	240	R7s	K4 1000W 240V R7S 189MM	29181	-	21000	3000	2,000	189	10	8000	instant on	N/A	10
1000	1000,0	230	R7s	K4 1000W 230V R7S 189MM	29180	-	21000	3000	2,000	189	10	8000	instant on	N/A	10
1500	1500,0	240	R7s	K5 1500W 240V R7S 254MM	29187	-	32000	3000	1,000	254	10	4000	instant on	N/A	10
1500	1500,0	230	R7s	K5 1500W 230V R7S 254MM	29184	-	32000	3000	1,000	254	10	4000	instant on	N/A	10
2000	2000,0	230	R7s	K8 2000W 230V R7S 331MM	30886	-	44000	3000	1,000	331	10	4000	instant on	N/A	10

Dimensions

DEQ lamps [mm]

Lamps	B [mm]	D [mm]	M [mm]	P [mm]	Z [mm]
K12	max. 78.3	8	max. 80.1	max. 10.2	74.9 ± 1.6
K11	max. 117.6	8	max. 119.4	max. 10.2	114.2 ± 1.6
K9	max. 117.6	8	max. 119.4	max. 10.2	114.2 ± 1.6
K9 IR	max. 117.6	10	max. 119.4	max. 10.2	114.2 ± 1.6
K1	max. 117.6	8	max. 119.4	max. 10.2	114.2 ± 1.6
K1 IR	max. 117.6	10	max. 119.4	max. 10.2	114.2 ± 1.6
K4	max. 189.1	10	max. 190.9	max. 10.2	185.7 ± 1.6
K5	max. 254.1	10	max. 255.9	max. 10.2	250.7 ± 1.6
K8	max. 330.8	10	max. 332.2	max. 10.2	327.4 ± 1.6

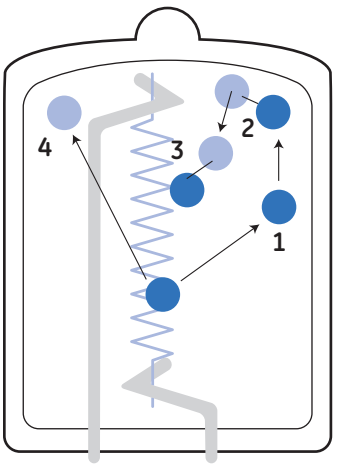


Tungsten halogen principle

The tungsten filament is enclosed in a gas filled quartz bulb, together with a controlled quantity of halogen. At the operating temperature some tungsten vapourizes and migrates to the cooler areas of the bulb wall where before it can be deposited, it combines with the halogen to form a tungsten halide. This circulates until it comes near the filament where the halide dissociates and deposits the tungsten back on the filament. This cycle continues throughout the operating life of the lamp.

As the bulb wall remains clean the bulb size can be reduced considerably by the use of quartz which can withstand the high wall temperatures.

The small bulb and strong materials withstand much higher working pressures and the increased gas density. This reduces filament evaporation, thus offering increased performance either as more light or longer life.



1. Tungsten evaporation
2. W- halogen reaction at bulb
3. Halogen returns to filament
4. Halogen returns to cycle

Bulb remains clear, “hot-spot” forming delayed

Light, life & voltage

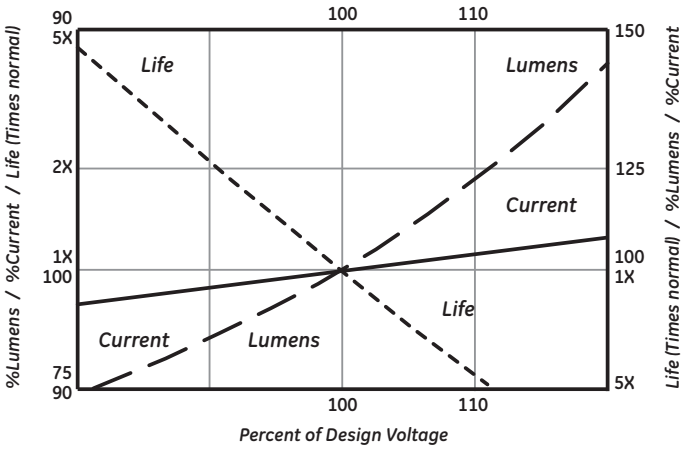
For any particular lamp, the light output and life depend upon the voltage at which a lamp is operated. For instance, as approximations, the light output varies as the 3.6th power of the voltage and the life varies inversely as the 12th power of the voltage. The Chart and Tables below illustrate the effects of overvoltage or undervoltage applied to lamp on its current, life and light output. The values given (except for long life lamps) are reasonably valid between 95% and 110% rated volts.

Beyond this range the indicated characteristics may not be realised because of the increasing influence of factors which cannot be incorporated into the chart. The chart applies only to D.C. or sine-wave A.C. current. The data may differ particularly for lamp operation on half-wave rectified voltage, semiconductor dimming devices of constant operation.

UV control

DEQ lamps shall be used in a closed fixture with appropriate glass protective shield.

Voltage variations



Underrated Bulb Voltages (<100%)

VOLTS %	AMPS %	LUMENS %	LIFE %
99	99.5	96.5	111
98	99.0	93.2	122
97	98.4	89.9	136
96	97.9	86.7	150
95	97.4	83.5	167
90	94.8	69.1	287

Overrated Bulb Voltages (>100%)

VOLTS %	AMPS %	LUMENS %	LIFE %
101	100.5	103.6	90
102	101.0	107.2	82
103	101.5	110.9	74
104	102.0	114.8	68
105	102.5	118.7	61
110	105.0	139.7	39

Operation and Maintenance

- Ensure horizontal ±4° burning position
- Rapid cycling can shorten lamp life and designers should take advice from their GE Lighting representative before using these lamps in flashing or blinking applications.
- The lamps may be dimmed by reducing voltage. However, this may cause the bulbs to blacken. If this occurs the lamp should be run at full voltage for fifteen minutes, thereby clearing the problem.
- Switch off mains supply before installing/removing lamp.
- Fuse is essential in circuit.
- Observe temperature tolerances: pinch seal, max. 350°C, bulb wall min. 250°C.
- Lamps should be free from contamination, including finger marks, before lamp is operated. Lamps can be cleaned with a soft cloth moistened with alcohol.
- Good condition of the lampholder contacts is essential.
- Bulb wall temperatures are high and therefore lamps should not be operated in flammable atmospheres unless enclosed in suitably rated luminaires.
- Ensure lamp is cool before removing.
- Do not use in a fixture with cracked or broken glass protective shield.