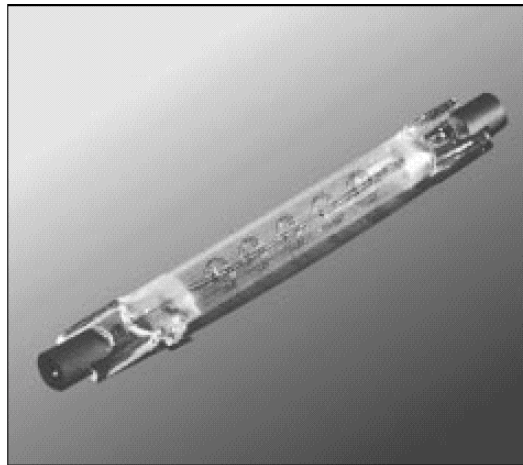


Halogen IR™ DEQ

Double Ended Linear Halogen-IR™ Lamps with R7s cap 225W, 375W, 900W

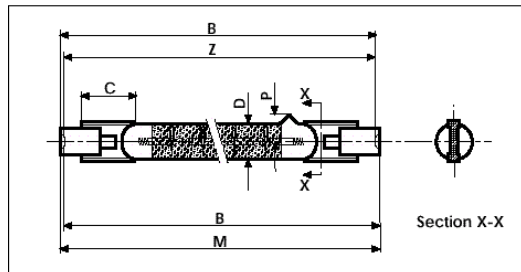
Description

The quartz bulb is coated with a patented IR reflective thin film which results in the energy saving benefits shown below. The use of standard R7s caps allows direct replacement into standard fittings. Lamps are offered in both 230 and 240V alternatives.



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.



	B	C	D	M	P	Z
	MAX.			MAX.	MAX.	
225W, 375W	117.6	13	10	119.4	10.2	114.2 ± 1.6
900W	254.1	16	10	255.9	10.2	250.7 ± 1.6

Benefits

- 25-40% energy savings compared to the light output of their standard equivalents
- excellent lumen maintenance
- stable colour temperature
- dimmable

Applications

- indoor lighting of sports halls, swimming pools, offices, factories, department stores, supermarkets, shop-windows
- outdoor lighting of railway stations, airports, building areas, small sports grounds, monuments, etc.

Technical Data

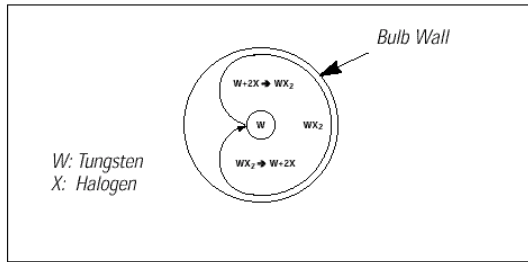
Order Code	Watts	Volts	Replaces Watts	B max. Length (mm)	D Diameter (mm)	Average Lumens	Rated Average Life (h)	Fila-ment
Bulb: IR-coated, Cap: R7s								
Burning position: horizontal ± 4°								
K9-Q225T3/230/HIR	225	230	300	117.6	10	5000	3000	C-8
K9-Q225T3/240/HIR	225	240	300	117.6	10	5000	3000	C-8
K1-Q375T3/230/HIR	375	230	500	117.6	10	9400	3000	C-8
K1-Q375T3/240/HIR	375	240	500	117.6	10	9400	3000	C-8
K5-Q900T3/240/HIR	900	240	1500	254.1	10	32000	2000	C-8

Tungsten Halogen Principle

The tungsten filament is enclosed in an inert 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.

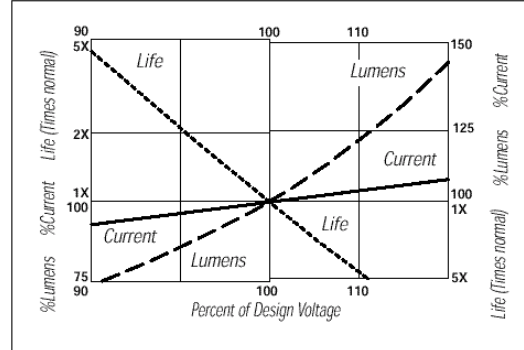
The small bulb and strong materials withstand much higher working pressures and the increased gas density. This reduces filament evaporation, thus offering increased performance either as more light or longer life.



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.



Operation and Maintenance

- Switch off mains supply before installing/removing lamp.
- A suitable HBC 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 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.

IEC Standards

GE tungsten halogen lamps comply with the following international and British Standards where applicable:

- IEC 60432-3 Tungsten Halogen Lamps Safety Standard
- IEC 60357 & BS 1075 — Tungsten Halogen Lamps,
- IEC 60061 & BS 51001 — Lamp Caps & Holders.

Underrated Bulb Voltages (<100%)

VOLTS %	AMPS %	LUMENS %	LIFE %
99	99.4	96.5	112.8
98	98.9	93.2	127.4
97	98.3	89.9	144.1
96	97.8	86.7	163.2
95	97.2	83.6	185.1
90	94.4	69.2	354.1

Overrated Bulb Voltages (>100%)

VOLTS %	AMPS %	LUMENS %	LIFE %
101	100.5	103.5	88.7
102	101.1	107.2	79.8
103	101.6	110.9	70.1
104	102.2	114.7	62.5
105	102.7	118.6	55.7
110	105.4	139.6	31.9

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DEQ IR Data Sheet - English - October 2003