

Induction Lighting

The QL Induction Lighting System

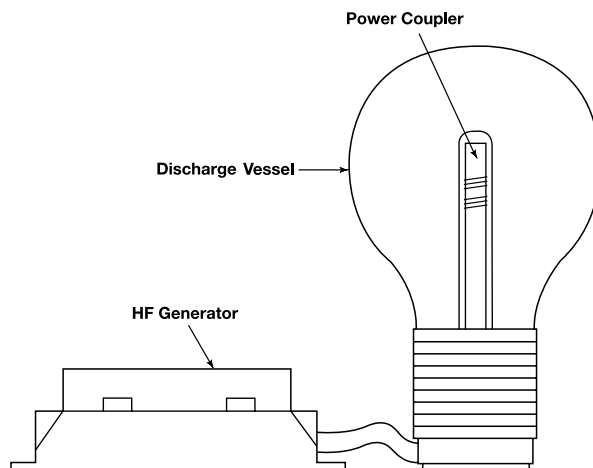
QL induction lighting is based on a technology which is fundamentally different from that of incandescent lamps or today's conventional gas discharge lamps. Instead of the glowing filaments of incandescent lamps, or the electrodes used in conventional gas discharge lamps, light generation is by means of induction – the transmission of energy via a magnetic field – combined with a gas discharge.

Induced Current In Lamp Bulb (Vessel)

In the QL induction lighting system, the energy source – equivalent to the primary coil of the transformer – is the lamp's induction coil, which is powered by the high-frequency electronics in the HF generator. The secondary coil is represented by the low-pressure gas and metal vapor inside the lamp bulb. The induced current causes the acceleration of charged particles in the metal vapor. These particles collide, resulting in excitation and ionization of the metal vapor atoms, and raising the energy level of the free electrons from these atoms to a higher, unstable state. As these excited electrons fall back to their stable, lower-energy state, they emit ultraviolet radiation. This falls on the fluorescent coating inside the lamp bulb, causing light to be emitted.

QL System Components

The QL lamp system consists of three main components (see illustration), each of which can be replaced separately if service is required.



- The vessel or discharge bulb is a closed glass bulb containing a low-pressure inert gas filling with a small amount of mercury vapor. The walls of the vessel are coated on the inside with a fluorescent powder of any of the modern three-line phosphor types, providing a choice of color temperatures. At present, the colors/830 (3000K) and /840 (4000K) are available. The discharge vessel is fixed to the power coupler by the plastic lamp cap with a click system. These two components normally never need to be disassembled, due to the ultra-long lifetime of the system.

- The power coupler transfers energy from the HF generator to the discharge inside the glass bulb, using an antenna that comprises the primary induction coil and its ferrite core. Other parts of the power coupler are a plastic support for the antenna, a 40 cm coaxial connecting cable carrying current from the HF generator, and a heat conducting rod with mounting flange. The mounting flange allows the QL lamp system to be mechanically attached to the luminaire, and removes waste heat to a heat sink which forms part of the luminaire.
- The HF generator produces the 2.65 MHz alternating current supply to the antenna.

Watts	Product Number	Ordering Code	Pkg. Qty. ●	Description	L.C.L. (In.)	M.O.L. (mm)	Rated Avg. Life Hrs. (351)	Approximate Lumens		CRI	CCT(K)
								Initial	Mean (353)		

QL Induction Lighting System Specifications

85	24665-2	QL85W/S13	6	Generator, 120V	N/A	140*	100,000	N/A	N/A	N/A	
	24944-1	QL85W/PC	6	Power Coupler	N/A	162	100,000	N/A	N/A	N/A	
	24945-8	QL85W/830	6	Discharge Vessel	N/A	180	100,000	6000	4800	80+	3000(1)
Alt. Vessel	24946-6	QL85W/840	6	Discharge Vessel	N/A	180	100,000	6000	4800	80+	4000
55	† 27636-0	QL55W/S13	6	Generator, 120V	N/A	140*	100,000	N/A	N/A	N/A	
	† 27641-0	QL55W/PC	6	Power Coupler	N/A	131	100,000	N/A	N/A	N/A	
	† 27643-6	QL55W/830	6	Discharge Vessel	N/A	140	100,000	3500	2800	80+	3000(1)
Alt. Vessel	† 27657-6	QL55W/840	6	Discharge Vessel	N/A	140	100,000	3500	2800	80+	4000

† New Since Last Printing

Note: QL System requires all three components to operate (order 3 product numbers).

(1) Specify alternate vessel for 4000 Kelvin system.

Vessel maximum diameter, 111mm=85w; 85mm=55w

*Generator dimensions, L=140mm, W=130mm, H=45mm

Power Factor > .9, THD < 10%

85w, 230v Generator – Product Number – 22571-4

55w, 230v Generator – Product Number – 26787-2

QL System Listings: UL, CSA, FCC Class A