

GUARDIAN *'Infinity'* LED tube

Energy Efficient LED Lighting for Cold stores and Frozen Food Cases

Lighting technology enters a new era with the advent of the GUARDIAN *'Infinity'* LED tube range of lighting for supermarket cold stores and cases.

More than sixty percent of the energy costs of powering the lighting in frozen food applications can be saved every year by using GUARDIAN products to replace existing fluorescent tubes and ballasts.

Maintenance costs are virtually eliminated since the life expectancy of LED tubes is more than three times greater than the fluorescent tubes they replace.

These products can be easily retrofitted and provide:-

- **Reliable startup of LED lighting** in freezer rooms and cases after being switched off in low temperatures.
- **Annual Energy Savings of more than 60%** of freezer lighting costs by :-
 - Improved efficiency when lights are on.
 - Switching off lights every night or when not in use.
 - Dimming down to acceptable lighting levels.
 - Reducing the refrigeration cooling load required.
- **Energy & Maintenance payback in less than 3 years.**
- **Life expectancy >10 years** on super bright LEDs
- **Utilization of existing T8 fittings** powered directly from the mains saves retrofit labour costs.
- **No requirement for external ballast or power unit**
- **No need to de-merchandise cases during retrofit**
- **Smart controls built into the LED Tube** to provide remote dimming, minimize energy usage and eliminate in-rush current
- **Further energy savings can be made in frozen food cold rooms** by using a local PIR proximity detector to switch the 230vac supply to all LED tubes on and off.



Advanced LED chip design, smart control and compact packaging of Guardian LED Tubes sets a new standard in LED brightness, energy efficiency and ease of installation.

The GUARDIAN LED Tube incorporates super bright LEDs, power conversion and smart control electronics for soft start and constant power, all sealed inside a 26mm diameter standard T8 length lighting tube with appropriate end caps and pins.

The tubes are then placed into the appropriate T8 fittings which are wired directly to the mains supply. This integral lighting design eliminates any requirement for external ballasts or power supply unit wiring and simplifies installation and any subsequent maintenance replacement.

After being switched OFF overnight or when not in use, all LED tubes reliably switch ON at low temperatures each morning. This automatic daily lighting control dramatically reduces the cost and carbon footprint of powering the lighting in frozen food cases or cold rooms.

Guardian LED Tubes are environmentally friendly, made of plastic, lead free, contain no other harmful elements and provide a cool, modern look for the illumination of frozen food products in retail stores.



GUARDIAN *'Infinity'* LED Tube Overview

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Guardian 'Infinity' LED tube range



Infinity range GL29xx end caps

Features:

- Rated Life > 60,000 hrs for LED tube & built-in Electronics
- LED output > 100 lumen per Watt (-30C to +50C)
- Power 100vac -264vac 50Hz PF 0.945
- Light angle 120deg
- Fixtures T8
- Filter Frost
- LED Colour Cool white (860)

Maintained LED lighting can be done by fitting addition 5W LED Emergency Bulkheads which are permanently on in maintained mode.

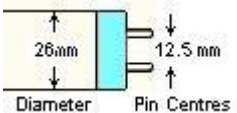


LED A 5W NM/M3/E

IP65 Luminaire



Aquamax single LED T8 24W 5Ft with stainless steel clips

T8 LED Tubes	Model	LED type	power	colour	cover	length (mm)	dia.(m m)	replaces T8 fluorescent	Lumen output
	GL2950	LED.T8	24W	Cool white	frost	1498	26	5 ft 58W	2300
	GL2940	LED.T8	20W	Cool white	frost	1198	26	4 ft 36W	1850
	GL2930	LED.T8	14W	Cool white	frost	894	26	3 ft 28W	1200
	GL2920	LED.T8	8W	Cool white	frost	588	26	2 ft 18W	700

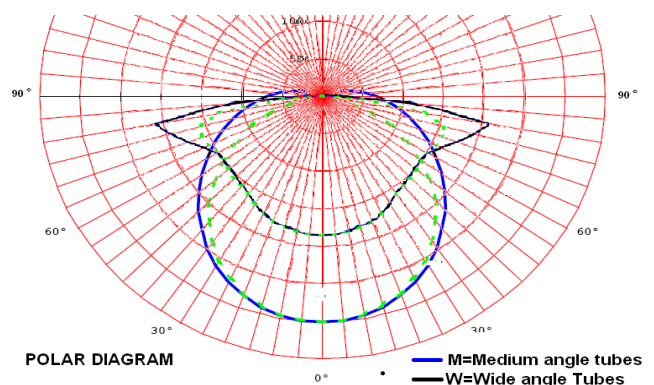
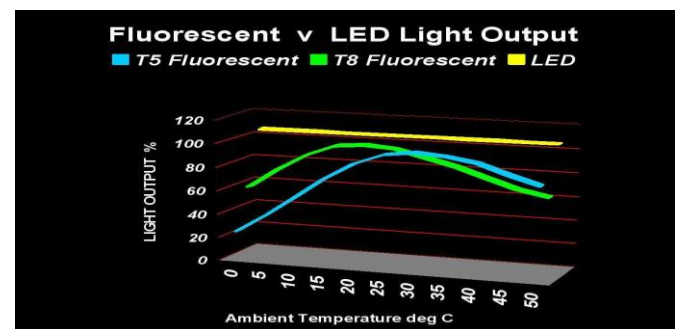
Wiring

Wiring the lamp is as simple as wiring an ordinary electric light bulb. No ballasts are required. There is no polarity on the tube so live and neutral can be connected at either end or tubes fitted upside down. All the LED tubes are internally fused so only normal group fuses are necessary.

The led tubes have 2 pins at either end to fit in standard fluorescent connector brackets. Both pins are electrically the same but it is recommended that both are connected in order to minimize issues from possible poor contacts.



A smart feature of the LED Lamps is that there is no in-rush current when power is first applied thereby improving reliability and reducing stress on group fuses and cables.



APPROVALS
EN 55015 : 2006
EN 62031 : 2008



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