

ALTO™ 4-foot T8 Fluorescent Lamps *Featuring* HI-VISION™ Phosphor

Environmentally responsible without sacrificing performance.



Ideal for ...

All environmentally responsible and energy efficient fluorescent applications

■ A First

The first fluorescent lamps that pass the U.S. EPA's test for non-hazardous waste

■ Low-Mercury

Reduction in mercury content of more than 80% when compared to standard fluorescent lamps

■ Outstanding Performance Over Life

HI-VISION™ Phosphor delivers 95% lumen maintenance and improved color rendering
Exclusive Cathode Guard ensures superior lumen maintenance throughout lamp life and reduces lamp end blackening

■ Disposal Savings

Eliminate costs and burdens associated with hazardous waste lamp disposal

■ Green End Caps®*

Allow for product differentiation at time of purchase and at end of lamp life

■ Broadest Line

Available in the broadest product offering of low-mercury fluorescent lamps on the market

■ Total System Solution

Combined with Philips Electronic Ballasts, system efficiency and positive environmental impact are maximized

*Green end caps are a registered trademark of Philips Electronics North America Corporation

Background

Fluorescent lamps, which contain mercury in order to operate, generally fail the Toxic Characteristics Leaching Procedure (TCLP). The U.S. Environmental Protection Agency (EPA) established TCLP in 1990 to measure substances that might dissolve into the ecosystem, including mercury. The EPA in July 1994 indicated that spent fluorescent lamps must be treated as hazardous waste if they failed the TCLP test. Spent lamps must be taken either to recycling facilities or disposed of at a hazardous waste site. Waste characterization utilizing TCLP is the responsibility of end users, and disposal regulations may differ from state-to-state.

For the past 15 years, there has been industry-wide agreement on the importance of mercury reduction and some significant progress has been made. As you can see by the statistics (see graph) provided by The National Electrical Manufacturers Association (NEMA), the industry average for mercury in a standard 4-foot, 40-watt T-12 lamp has been reduced from 48.2 milligrams in 1985 to 22.8 milligrams in 1994.

As impressive as the reduction has been, lamps with 22.8 milligrams of mercury still do not pass the TCLP test. Barriers exist for further improvements toward mercury reduction. Philips Lighting has pioneered key achievements in further progress of mercury reduction.

Philips Breakthrough

The first step in reducing the critical level of mercury is to have greater control over the precise amount injected into the lamp. To implement a more precise mercury dose, Philips invented an off-line mercury capsule injection system to deliver a metered amount of mercury into each lamp.

Next, the capsules are mounted in the lamp and are only activated when the lamp proves to be hermetically sealed. This method is an integrated part of the process to standardize the quantities of mercury in each lamp. Once we were able to pinpoint the fate of mercury throughout the lamp life and standardize the dosing, we experimented with decreased mercury levels. After four years of research and testing, Philips has implemented an exclusive new technology that employs buffers which reduce mercury loss mechanisms. This allows us to offer **ALTO™** Lamp Technology.

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Electrical, Technical and Ordering Data (Subject to change without notice)

Product Number	Ordering Code	Nominal Watts	Bulb	Base	Standard Package Quantity	Lamp Current (Amps)	Color Temperature (Kelvin)	Color Rendering Index (CRI)	Nominal Length (Inches)	Rated Average Life (Hrs.) ⁽¹⁾	Approx. Initial Lumens	Design Lumens ⁽²⁾
27252-6	F32T8/TL730/ALTO	32	T8	Med. Bipin	25	.265	3000	78	48	20,000	2850	2710
27249-2	F32T8/TL735/ALTO	32	T8	Med. Bipin	25	.265	3500	78	48	20,000	2850	2710
27248-4	F32T8/TL741/ALTO	32	T8	Med. Bipin	25	.265	4100	78	48	20,000	2850	2710
27268-2	F32T8/TL750/ALTO	32	T8	Med. Bipin	25	.265	5000	78	48	20,000	2850	2710
24667-8	F32T8/TL830/ALTO	32	T8	Med. Bipin	25	.265	3000	86	48	20,000	2950	2800
24670-2	F32T8/TL835/ALTO	32	T8	Med. Bipin	25	.265	3500	86	48	20,000	2950	2800
24671-0	F32T8/TL841/ALTO	32	T8	Med. Bipin	25	.265	4100	86	48	20,000	2950	2800
27229-4	F32T8/TL850/ALTO	32	T8	Med. Bipin	25	.265	5000	86	48	20,000	2950	2800

ALTO™ FLUORESCENT LAMPS
T8 Lamp Specification

"Lamps shall be Philips ALTO Fluorescent Lamps having:

- Credentials that pass the Environmental Protection Agency's TCLP test (Toxic Characteristic Leaching Procedure) established in 1990
- Distinguished by green end caps and a green label on the outer carton
- Color temperature of ___K (3000, 3500, 4100 or 5000)
- Color rendering index of ___ (78, 86)
- Powered by electronic ballasts designed for 265ma T8 lamps
- T-8 diameter bulb
- Medium bi-pin bases
- Initial lumens of ___(2850, 2950)
- Nominal wattage of 32
- A cathode guard."

⁽¹⁾ Average life under specified test conditions with lamps turned off and restarted once every three operating hours.

⁽²⁾ Approximate lumens at 40% of rated average life (8000 Hours).

HI-VISION™ is a trademark of Philips Electronics North America Corporation.

**Based on the combined average for Philips ALTO T8 and T12 lamps when compared with available published data for 4-foot T12 fluorescent lamps.

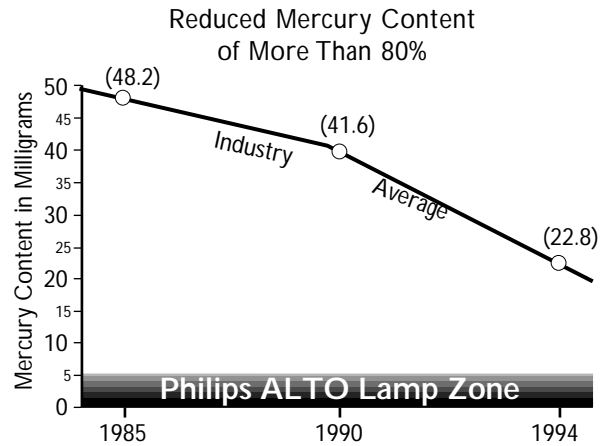
Testing

ALTO Lamp Technology employs a new capsule injection dosing system to deliver significantly less mercury. Philips ALTO lamps provide a reduction in mercury content of more than 80% when compared to standard fluorescent lamps with no loss in performance. ** This mercury reduction is a dramatic improvement in comparison with the industry average for mercury content in a 40-watt T-12 fluorescent lamp of 22.8 mg.

After years of testing lamps, many operating to the end of their lives, we concluded that the entire population of ALTO lamps meet the statistical requirements outlined by the Federal Government. In other words, ALTO fluorescent lamps meet the EPA's TCLP requirements.

Interpretation

While most states adopt the TCLP standard, there are some states that have more stringent regulations. In those states, ALTO fluorescent lamps may not pass but would still contribute significantly to source reduction.



Source: Philips Lighting Company and the National Electrical Manufacturers Association, based on the study of standard four-foot, 40-watt T-12 fluorescent lamps