

Toggled iQ™ Tube



Direct-wire, dimmable, universal-voltage (120-277VAC) LED T8/T12 tube upgrades existing fluorescent tubes to a more energy-efficient smart lighting solution making it individually controllable as part of a connected Bluetooth® low energy (BLE) wireless mesh network.

Smart lighting control features include: individual addressability, continuous dimming, control groups, personal control, control persistence, high-end trim, minimal light level, demand response ready, light output monitoring, and BACnet IP addressable. With the addition of a Toggled iQ Sensor, the tubes are also capable of occupancy/vacancy control and daylight harvesting. Inclusion of a Toggled iQ Switch enables scheduling and pre-set lighting scenes.

As part of an upgradable smart lighting control system, the tubes feature a Bluetooth low energy (BLE) wireless mesh network capable of connecting up to 32,000 devices on a single network. Intelligently designed to implement lighting control capabilities such as large-scale wireless dimming and back-end analytics. Installation requires basic wiring around ballast systems.

Features

- **Wireless Dimming**

Control the brightness of each tube individually from the Toggled iQ App or groups of tubes with the Toggled iQ Switch.

- **Eliminates Fluorescent Ballast**

Safe, simple, direct-wire single-ended installation eliminates ballast related issues of compatibility, maintenance, and added power consumption.

- **Quality of Light**

Patented triangular tube shape is engineered for broader and more uniform light distribution. Premium LEDs provide a minimum of

80CRI within a 3-Step MacAdam ellipse for excellent tube-to-tube color consistency.

- **Durable Construction**

Designed and engineered in the USA with a shatterproof polycarbonate enclosure and high-quality electronic components.

- **Life Rating**

Engineered for a rated life of 50,000 hours (L70).

- **Environmental Rating**

Rated for -25C to 45C (-13F to 113F), dry and damp locations, IC and non-IC fixtures.

- **Internal light sensor**

Enables remote functional status verification and the dissemination of data points to help predict remaining life expectancy.

System Capabilities

- **Occupancy/Vacancy**

Enable occupancy/vacancy operation by adding one or more Toggled iQ Sensors to your installation.

- **Daylight Harvesting**

Enable daylight harvesting by adding a Toggled iQ Sensor to your installation. Tubes smoothly adjust to changes in natural light for an energy-saving, non-intrusive lighting experience.

- **Scenes**

Use the Toggled iQ App to customize scenes with brightness settings saved for individual or groups of tubes.

- **Scheduling**

Enable automated 7-day schedules by pairing with a Toggled iQ Switch.

UL Classified, FCC compliant and included on both DLC Qualified Product List (QPL) and DLC Networked Lighting Controls (NLC) to qualify for applicable utility incentives and rebates

Ordering Information

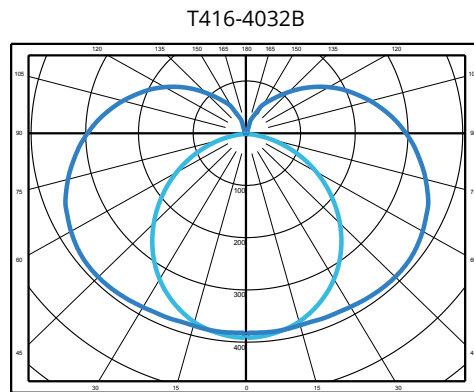
Series	Length and Power	Color	Lens	Generation	Options
T = Toggled iQ	416 = 4 feet, 16W 312 = 3 feet, 12W 208 = 2 feet, 8W	40 = 4000K 50 = 5000K	3 = Wide Angle	2 = 2nd Gen.	B = BLE MESH



Specifications

Model	Length	Input	Power	PF	THD	Lumens	Efficacy	Color	CRI	Life (L70)	Standby
T416-4032B	48"	120-277VAC	16W	≥0.9	≤20%	2400	150lm/W	4000K	≥80	50,000hr	0.5W at 120VAC
T416-5032B	48"	120-277VAC	16W	≥0.9	≤20%	2400	150lm/W	5000K	≥80	50,000hr	0.5W at 120VAC
T312-4032B	36"	120-277VAC	12W	≥0.9	≤20%	1800	150lm/W	4000K	≥80	50,000hr	0.5W at 120VAC
T312-5032B	36"	120-277VAC	12W	≥0.9	≤20%	1800	150lm/W	5000K	≥80	50,000hr	0.5W at 120VAC
T208-4032B	24"	120-277VAC	8W	≥0.9	≤20%	1200	150lm/W	4000K	≥80	50,000hr	0.5W at 120VAC
T208-5032B	24"	120-277VAC	8W	≥0.9	≤20%	1200	150lm/W	5000K	≥80	50,000hr	0.5W at 120VAC

Light Distribution (Polar Plot)



Light distribution typical for all products listed in this specification.

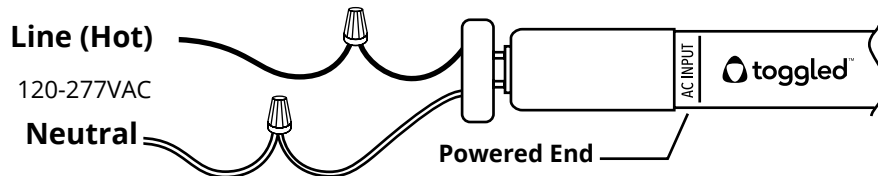
90-270 Degree Plane (Looking at end of lamp)

Beam Angle: 240 Degrees
Field Angle: 355 Degrees

0-180 Degree Plane (Looking at side of lamp)

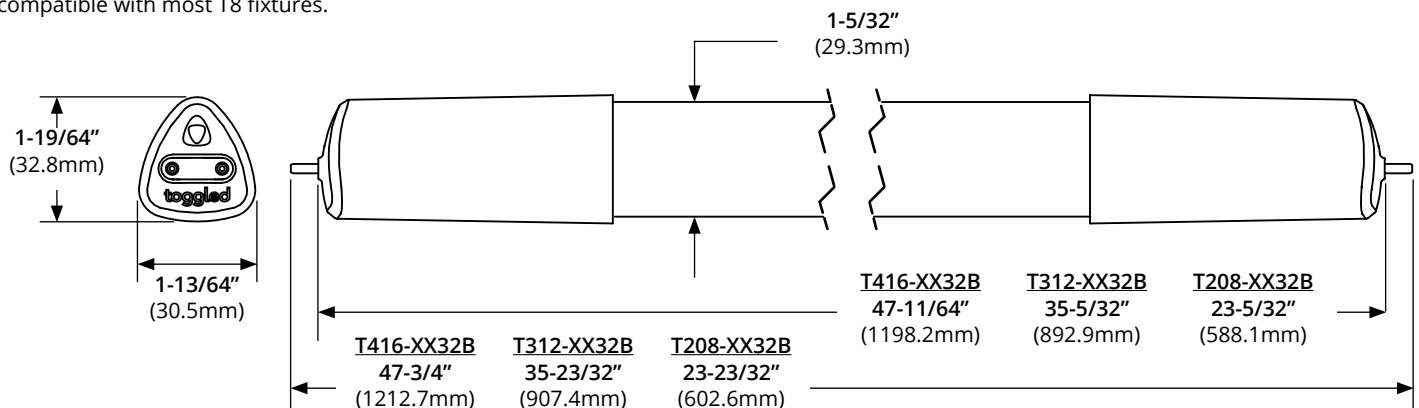
Beam Angle: 105 Degrees
Field Angle: 156 Degrees

Wiring Diagram



Dimensions

Toggled iQ Tubes meet or exceed ANSI C78.81 dimensional requirements with regards to length. The diameter is larger than T8 lamps, but is compatible with most T8 fixtures.



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