

# QUICKTRONIC® POWERSENSE® T8 Universal Voltage Dimming Systems



**Fluorescent Controllable  
Lighting Systems**

## High Efficiency Series

**POWERSENSE  
T8 DIM**

### Lamp / Ballast Guide

32W T8 – SYLVANIA OCTRON® lamps

- 1-lamp QHE1x32T8/UNV DIM
- 2-lamp QHE2x32T8/UNV DIM
- 3-lamp QHE3x32T8/UNV DIM
- 4-lamp QHE4x32T8/UNV DIM

Primary Lamp Types

F032, F032 & F031

Also operates:

F030/SS, F028/SS, F025/SS, F025,  
F017, F024 & F016

### Key System Features

- Industry's first ballast that combines dimming inputs from 0-10V and/ or two-wire AC dimming providing maximum flexibility
- Compatible with low voltage and power line fluorescent dimmers
- **High Efficiency**
- NEMA Premium Electronic Ballast Program compliant
- Lamp Detection Technology
- Universal voltage (120-277V)
- 100-5% Dimming Range
- PROStart® Programmed Rapid Start
- Anti-flash circuitry – turns on in dimmed mode
- Operates at >42 kHz
- QUICK 60+ ballast and lamp warranty
- RoHS compliant
- Lead-free solder and manufacturing process



### Application Information

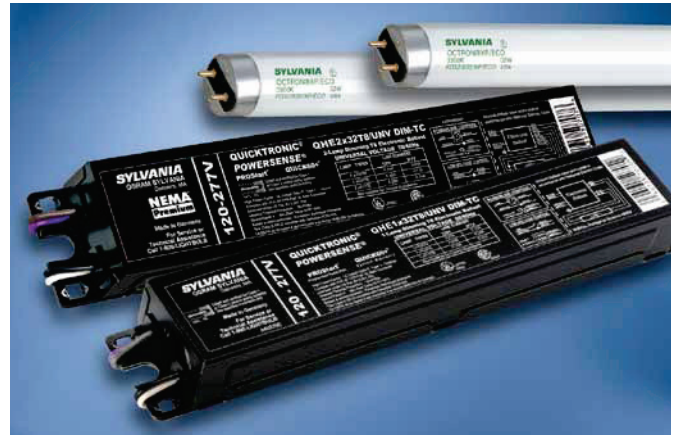
#### SYLVANIA QUICKTRONIC POWERSENSE ballasts

are ideally suited for:

- Occupancy sensors
- Daylight harvesting
- Energy management
- Load shedding
- New construction
- Retrofit

SYLVANIA QUICKTRONIC High Efficiency POWERSENSE T8 electronic ballasts offer several advantages:

- **Wide Dimming Range:** operate linear fluorescent T8 lamps over a 100-5% dimming range and provide true versatility in controls selection.
- **Industry's Most Adaptable Dimming Ballast:** ballasts feature micro-controller technology for compatibility with:
  - low voltage controls
  - power line fluorescent dimmers
  - any line voltage from 120V to 277V
- **Unmatched Performance:** patented lamp detection technology that virtually eliminates variations in brightness from lamp-to-lamp and provides uniform lighting throughout the dimming range. At light levels of >75% unnecessary lamp-coil power is turned off, delivering energy efficiencies comparable to non-dimming Instant start electronic ballast. This technology also eases installation and troubleshooting by recognizing failed lamps, faulty wiring or loose connections, and shutting down. When the problem is corrected, the system restarts automatically.



- **NEMA Premium Electronic Ballast Program compliant.** This program promotes the use of high efficiency T8 electronic ballasts by meeting or exceeding the Ballast Efficiency Factors, (BEF) established by the CEE, (Consortium for Energy Efficiency). For additional information on this program go to: [www.cee1.org](http://www.cee1.org) or [www.nema.org](http://www.nema.org)

These ballasts are RoHS compliant and feature lead-free solder and manufacturing process.

Setting the standard for quality, QUICKTRONIC POWERSENSE ballasts are covered by the QUICK 60+® warranty, the first and most comprehensive lamp & ballast system warranty in the industry.

### System Information

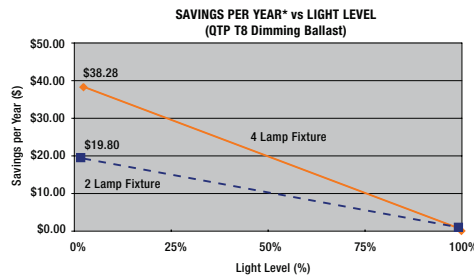
QUICKTRONIC POWERSENSE ballasts operate from standard low voltage (0-10VDC) fluorescent controllers or compatible 2-wire power line fluorescent dimmers, making them ideal for individual office lighting or automated building applications, both in new construction and retrofit projects.

For the individual office or conference room, installation can be streamlined by using a 2-wire power line fluorescent dimmer; eliminating the need for additional control wires.

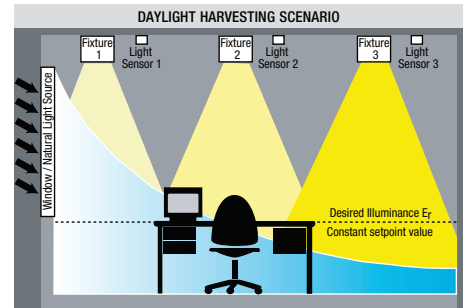
For more advanced systems, such as daylight harvesting or building automation applications, standard low voltage devices

(0-10VDC, Class 1 or 2) are used to control the lighting system. In this daylight harvesting example, each lighting fixture (or fixture row) is controlled by its own photosensor; regulating the light output to compensate for changes in natural daylight. Depending upon the specific application, energy savings of up to 60% compared to fixed output T8 electronic systems can be realized.

All QUICKTRONIC POWERSENSE ballasts include a line voltage protection circuit, which protects the ballast in the event that line voltage is inadvertently applied to the low voltage control inputs.



\* F032/XP lamps with QUICKTRONIC T8 POWERSENSE ballast  
 \* Based on 4000 hrs/yr, \$0.11/kWh, and 120V operation  
 \* Savings per Year (€Light Level) = Cost of operation (100% Light Level) - Cost of operation (€Light Level)



**SPECIFICATION DATA**

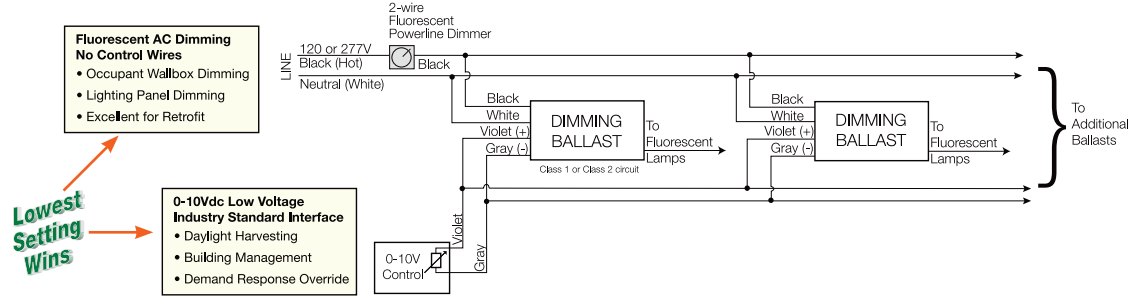
|           |             |      |
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| Catalog # | Date        | Type |
| Project   | Prepared by |      |
| Comments  |             |      |



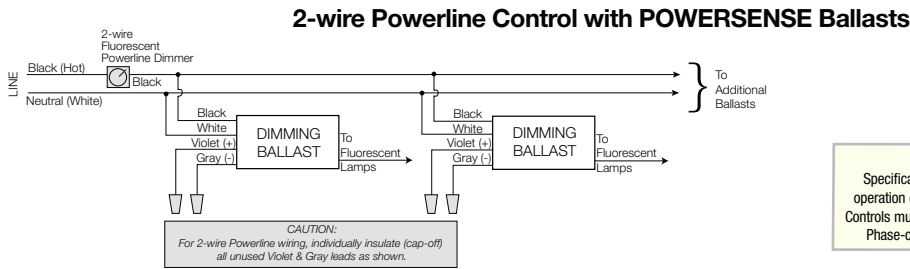
**QUICKTRONIC® POWERSENSE® Dimming UNV - Dimming Control Wiring Examples**

Industry's 1st Ballast That Allows POWERLINE Fluorescent Control **AND** 0-10Vdc Control Input Simultaneously

**2-wire Powerline AND 0-10Vdc Control with POWERSENSE Ballasts**



**Wallbox Style 2-wire Powerline Control Wiring Example**

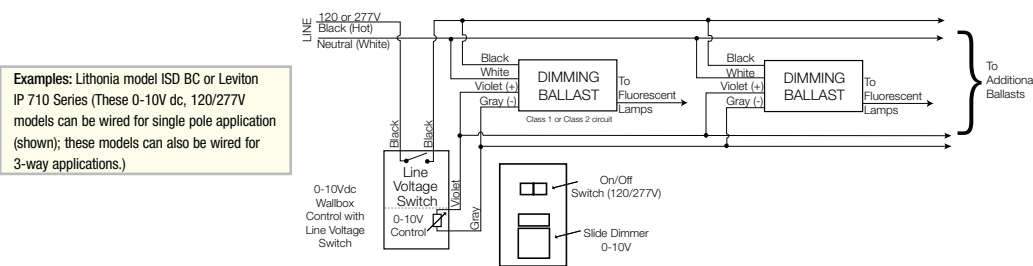


**Powerline Control Specs:**  
Specification-grade controls are available for 120V or 277V operation of controllable analog electronic fluorescent ballasts. Controls must be suitably rated for both the type (e.g. Fluorescent Phase-control) and size (e.g. 600W of the connected load).

**Examples:** Leviton IPX series operate as single pole or 3-way models. Available in 120V and 277V models. Leviton 6668-1W (white) 120V single pole fluorescent dimmer.

**Wallbox Style 0-10V Control with Power Switch Wiring Example**

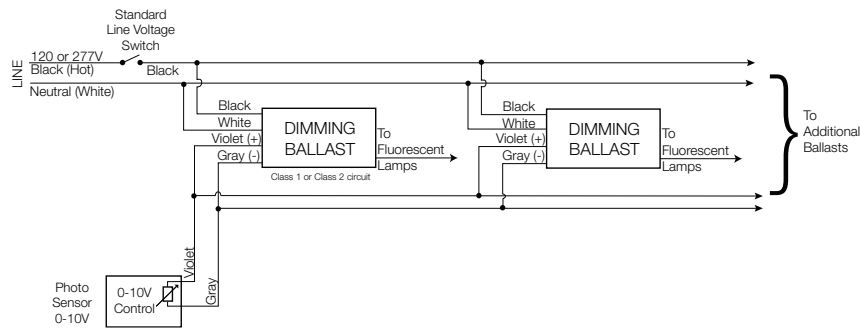
**0-10V DC Control with POWERSENSE Ballasts**



**Photo Sensor 0-10V Wiring Example**

**0-10V DC Control with POWERSENSE Ballasts**

Photo Sensor 0-10V Wiring Example



**SPECIFICATION DATA**

|           |             |      |
|-----------|-------------|------|
| Catalog # | Date        | Type |
| Project   | Prepared by |      |
| Comments  |             |      |

**T8 POWERSENSE®**  
**High Efficiency**  
**Controls Guide**

**QUICKTRONIC® POWERSENSE® Controls Information**



| Controls Manufacturer                                  | Fluorescent Powerline Controllers | 0-10 VDC Controllers | Photo Cells | Occupancy Sensors | Building Management Systems |
|--|-----------------------------------|----------------------|-------------|-------------------|-----------------------------|
| Acuity Brand Controls<br>www.acuitybrandscontrols.com  | X                                 | X                    | X           | X                 | X                           |
| Blue Ridge Technologies<br>www.brnt.com                | X                                 | X                    | X           | X                 | X                           |
| Cooper Greengate<br>http://greengate.coopercontrol.com |                                   | X                    | X           | X                 | X                           |
| Hunt Dimming<br>www.huntdimming.com                    | X                                 | X                    |             |                   | X                           |
| Lehigh Electric Products<br>www.lehighdim.com          | X                                 | X                    |             |                   | X                           |
| Leviton<br>www.leviton.com                             | X                                 | X                    | X           | X                 |                             |
| Sensor Switch<br>www.sensorswitch.com                  |                                   |                      | X           | X                 |                             |
| Siemens Building Technology<br>http://sbt.siemens.com  |                                   |                      |             |                   | X                           |
| Starfield Controls<br>www.starfieldcorp.com            |                                   | X                    | X           | X                 | X                           |
| Watt Stopper<br>www.wattstopper.com                    | X                                 | X                    | X           | X                 | X                           |

Contact the companies listed for their 2-wire Fluorescent/Powerline controls and/or 0-10V controls information.

T8 POWERSENSE Dimming Ballast  
 50735 QHE 1x32T8/UNV DIM-TC  
 50736 QHE 2x32T8/UNV DIM-TC  
 50737 QHE 3x32T8/UNV DIM-TCL  
 50738 QHE 4x32T8/UNV DIM-TCL

**POWERSENSE  
 CONTROLS**

Please contact controls manufacturer to order/specify controls. For the latest controls list go to [www.sylvania.com](http://www.sylvania.com)  
 Also, for more information, refer to the LCA (Lighting Controls Association) site: <http://lightingcontrolsassociation.org>

**Dimensions:**

**TC enclosure**

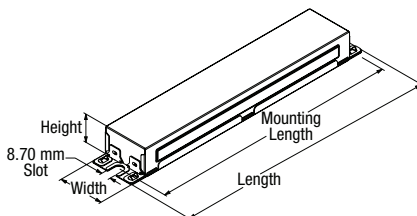
Overall: 9.5" L x 1.68" W x 1.0" H (241 x 43 x 25 mm)

Mounting: 8.90" (226 mm)

Weight: 1.1 lbs each (500 g)

**Wiring:**

Leads Only



**Dimensions:**

**TCL enclosure**

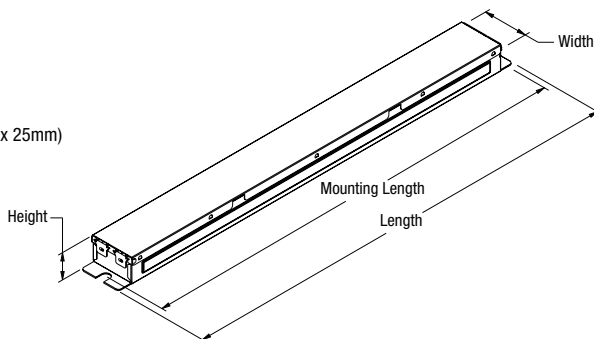
Overall: 16.7" L x 1.68" W x 1.0" H (425mm x 43mm x 25mm)

Mounting: 16.2" (411 mm)

Weight: 2.1 lbs each (950 g)

**Wiring:**

Leads Only



**WARNING:**

Install and wire these ballast and controls in accordance with the National Electrical Code (NEC), all applicable Federal, State and local electrical codes, as well as the specific instructions provided with the compatible control that you purchased. Installation should be performed by qualified personnel only.

These instructions are guidelines only. Installation may vary for different controls/fixtures/applications. Be sure to follow the control instructions and all applicable codes and standards when installing dimming systems.

Please contact controls manufacturer listed in the OSRAM SYLVANIA Inc. controls cross reference for compatible controls and instruction wiring

**NOTES:** 1. Dimming ballasts source <0.5mA (0-10VDC control input).  
 2. Powerline controls must be rated for the type (e.g. Fluorescent Phase-control) and size (e.g. 600W, 1000W, 1500W & 2000W etc.) of the connected load. Do NOT use incandescent powerline controls; incandescent dimmers are not rated for fluorescent loads and are NOT compatible with POWERSENSE ballasts.

**OSRAM SYLVANIA**  
**National Customer**  
**Service and Sales Center**  
 1-800-LIGHTBULB  
 (1-800-544-4828)  
[www.sylvania.com](http://www.sylvania.com)



Control Specifications/model numbers may change.

Please consult manufacturers listed for their latest control models and to order their controls.

**SPECIFICATION DATA**

|           |             |      |
|-----------|-------------|------|
| Catalog # | Date        | Type |
| Project   | Prepared by |      |
| Comments  |             |      |

**High Efficiency, T8 Controllable Lighting Systems, UNV (120-277V)**



| Item Number | OSRAM SYLVANIA Description | Input Current (AMPS) | Lamp Type | Rated Lumens (lm) | No. of Lamps | Ballast Factor (BF) | System Lumens | Mean Lumens | Input Power (W) 120V 277V | System <sup>1</sup> Efficacy (lm/W) | BEF <sup>2</sup> |      |
|-------------|----------------------------|----------------------|-----------|-------------------|--------------|---------------------|---------------|-------------|---------------------------|-------------------------------------|------------------|------|
| 50735       | QHE1x32T8/UNV DIM-TC       | 0.27/0.12            | F032XP    | 3000              | 1            | 0.88<br>0.05        | 2640<br>150   | 2480<br>140 | 30<br>8                   | 30<br>8                             | 88               | 2.93 |
|             |                            | 0.24/0.11            | F030/SS   | 2850              | 1            | 0.88<br>0.05        | 2510<br>145   | 2360<br>135 | 28<br>8                   | 28<br>8                             | 90               | 3.14 |
|             |                            | 0.22/0.10            | F028/SS   | 2725              | 1            | 0.88<br>0.05        | 2400<br>135   | 2255<br>130 | 25<br>8                   | 25<br>8                             | 96               | 3.52 |
|             |                            | 0.20/0.09            | F025/SS   | 2475              | 1            | 0.88<br>0.05        | 2180<br>125   | 2045<br>115 | 23<br>7                   | 23<br>7                             | 95               | 3.83 |
| 50736       | QHE2x32T8/UNV DIM-TC       | 0.51/0.24            | F032XP    | 3000              | 2            | 0.88<br>0.05        | 5280<br>300   | 4965<br>280 | 59<br>14                  | 57<br>14                            | 93               | 1.54 |
|             |                            | 0.48/0.20            | F030/SS   | 2850              | 2            | 0.88<br>0.05        | 5015<br>285   | 4715<br>270 | 55<br>14                  | 53<br>14                            | 95               | 1.66 |
|             |                            | 0.43/0.18            | F028/SS   | 2725              | 2            | 0.88<br>0.05        | 4795<br>275   | 4510<br>255 | 51<br>13                  | 49<br>13                            | 98               | 1.80 |
|             |                            | 0.39/0.16            | F025/SS   | 2475              | 2            | 0.88<br>0.05        | 4355<br>250   | 4095<br>235 | 45<br>13                  | 44<br>13                            | 99               | 2.00 |
| 50737       | QHE3x32T8/UNV DIM-TCL      | 0.73/0.30            | F032XP    | 3000              | 3            | 0.88<br>0.05        | 7920<br>450   | 7445<br>425 | 87<br>20                  | 84<br>20                            | 94               | 1.05 |
|             |                            | 0.68/0.30            | F030/SS   | 2850              | 3            | 0.88<br>0.05        | 7525<br>430   | 7075<br>400 | 81<br>20                  | 78<br>20                            | 96               | 1.13 |
|             |                            | 0.62/0.26            | F028/SS   | 2725              | 3            | 0.88<br>0.05        | 7195<br>410   | 6760<br>385 | 73<br>19                  | 72<br>19                            | 100              | 1.22 |
|             |                            | 0.56/0.24            | F025/SS   | 2475              | 3            | 0.88<br>0.05        | 6535<br>370   | 6140<br>350 | 67<br>19                  | 66<br>19                            | 99               | 1.33 |
| 50738       | QHE4x32T8/UNV DIM-TCL      | 0.96/0.40            | F032XP    | 3000              | 4            | 0.88<br>0.05        | 10,560<br>600 | 9925<br>565 | 114<br>27                 | 110<br>27                           | 96               | 0.80 |
|             |                            | 0.92/0.39            | F030/SS   | 2850              | 4            | 0.88<br>0.05        | 10,030<br>570 | 9430<br>535 | 107<br>26                 | 104<br>26                           | 96               | 0.85 |
|             |                            | 0.82/0.35            | F028/SS   | 2725              | 4            | 0.88<br>0.05        | 9590<br>545   | 9015<br>510 | 98<br>25                  | 95<br>25                            | 101              | 0.93 |
|             |                            | 0.74/0.32            | F025/SS   | 2475              | 4            | 0.88<br>0.05        | 8710<br>495   | 8190<br>465 | 91<br>24                  | 89<br>24                            | 98               | 0.99 |

**T8 POWERSENSE®**  
High Efficiency  
Performance Guide

Data based on SYLVANIA OCTRON® lamps shown. QUICKTRONIC® POWERSENSE ballasts are also compatible with other manufacturers equivalent lamp types that meet ANSI specifications, including F17, F25, F32, U-Bend equivalent lamps and SUPERSAVER lamps.

**Specifications**  
Data based on F32T8

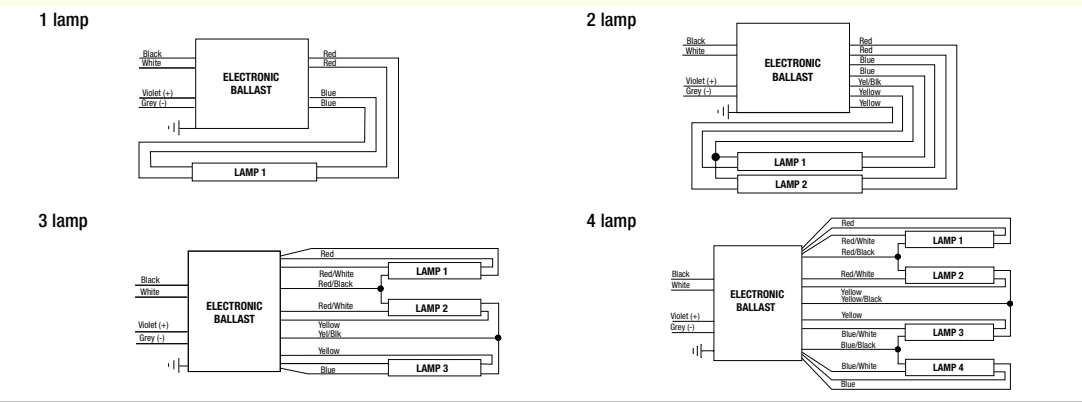
**Starting Method:** Programmed Rapid Start  
**Circuit Type:** Series  
**Lamp Frequency:** >42 kHz  
**Lamp CCF:** Less than 1.7  
**Starting Temp:** 50°F/10°C minimum for OCTRON T8 lamps  
**Input Voltage:** 120-277V, ±10%  
**Input Frequency:** 50/60 Hz  
**THD:** <10% @ Full Output  
**Power Factor:** >98% @ Full Output  
 UL Listed Class P, Type 1 Outdoor  
 CSA or C/UL Certified  
 70°C Max Case Temperature  
 FCC 47CFR Part 18 Non-Consumer  
 Class A Sound Rating  
 RoHS compliant<sup>†</sup>  
 ANSI C62.41 Cat. A Transient Protection  
 Remote mounting (Max. wire length from ballast case to lampholder)  
 • up to 8ft for full wattage T8s  
 • no remote mounting for SUPERSAVER  
 3 Complies with European Union Restriction of Hazardous Substances Directive (Directive EC 2002/95)

**POWERSENSE T8 DIM**

Products are all 10-pack. Note: Striation might occur with SUPERSAVER lamps.  
 1 System Efficacy calculation based on lowest input power value.  
 2 Ballast Efficiency Factor (BEF) shown = (Ballast Factor x 100) divided by Input Power (Note: calculation based on lowest wattage value).

**Wiring Diagrams**

**Output Wiring:** Lamp wiring for dimming ballasts can differ significantly from non-dimming ballasts and from other manufacturers dimming ballasts. Take care to connect lamp lead wires as shown on the applicable ballast diagram. **Lamp Seasoning:** For optimal performance, fluorescent lamps may require seasoning for up to 12 hours prior to low temperature starting & low level dimming. Refer to NEMA LSD 23-2002 Lighting Systems Division: Recommended Practice — Lamp Seasoning for Fluorescent Dimming Systems

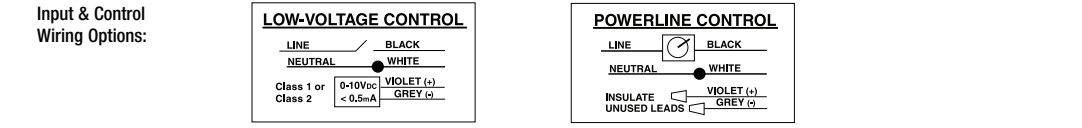


**Control Information**

QUICKTRONIC POWERSENSE ballasts are compatible with a wide range of low voltage (0-10VDC) and power line fluorescent controllers available from various manufacturers.  
**Low Voltage Control Specs:** Ballast will source up to 0.5mA for 0-10VDC control purposes. May be wired as a Class 1 or Class 2 circuit-consult Local and National Electrical Codes.  
**Power Line Control Specs:** Specification-grade fluorescent controls are available for 120V or 277V operation of controllable analog electronic fluorescent ballasts. Controls must be suitably rated for both the type (e.g. Fluorescent Phase control) and size (e.g. 600W) of the connected load.

**System Life / Warranty**

QUICKTRONIC products are covered by the QUICK 60+® warranty, a comprehensive lamp and ballast system warranty. For additional details, refer to the QUICK 60+ warranty bulletin.



Item Number **50736 QHE 2 x 32T8 / UNV DIM-TC** System Type - DIMMING/Case Size  
 QUICKTRONIC High Efficiency Line Voltage (120-277V)  
 Number of Lamps (1, 2, 3, 4) Primary Lamp Wattage

**OSRAM SYLVANIA**  
**National Customer Service and Sales Center**  
 1-800-LIGHTBULB  
 (1-800-544-4828)  
 www.sylvania.com

Specifications subject to change without notice.

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