# SYLVANIA Lamps

## DULUX® LED Pin Base Lamps

LED replacement for conventional Compact Fluorescent Lamps for use in ECG luminaires or directly on line voltage

### Application

DULUX LED Pin Based lamps are an energy saving alternative, designed to replace traditional compact fluorescent lamps. These LED lamps contain no mercury, and provide instant light and a uniform light distribution. These lamps are offered in SubstiTUBE® (UL Type A/ballast compatible), LEDlescent™ (UL Type B/ballast-free), or DUALescent™ (UL Type A+B), depending on which family/wattage is chosen. These lamps also minimize labor and recycling costs.

### Benefits and Features

- DLC listed lamps allow for rebates in areas where applicable, saving on overall project cost
- System LPW varies from 93 to 134
- CRI >80
- Offered in 6, 7, 8, 8.5, 9.5, 15 or 16 watts
- Available beam angle:
  - Omnidirectional lamps with 360° beam angle and light emitting angle of 360°
  - High output lamps with either 110° or 120° beam angle and light emitting angle of 260°
  - CCT Selectable lamps with either 110° or 120° beam angle and light emitting angle of 150° or 360°
- Energy savings up to 68%

### Electrical

- SubstiTUBE lamps are compatible with electronic (4-pin) or magnetic (2-pin GX23) ballast. LEDlescent lamps are operated directly wired to line voltage. DUALescent can be operated either on magnetic ballasts or directly wired to line voltage, either 2-pin or 4-pin lamp holders.
- 0-10V dimmable with select compatible 0-10V dimming ballasts
- Power Factor >0.9
- THD <20%

### Rated Life

- 50,000 hours ($L_{70}$)

### Warranty

- 5 year limited lamp warranty (24/7 operation)
- NLB Trusted Warranty Program

### Ambient Operating Range

- -4°F to +104°F (-20°C to +40°C)

### Wattage Comparison

| Traditional Source | Traditional System Wattage | LED System Wattage | Energy Savings |
|---|---|---|---|
| CF42DT/E w/QTP2X26/32/42CF/UNV DM | 94 | 30 | 68% |
| CF32DT/E w/QTP2X26/32/42CF/UNV DM | 69 | 30 | 57% |
| CF26DD/E w/QTP2X26/CF/UNV DM | 54 | 19 | 65% |
| CF18DD/E w/QTP1/2X18CF/UNV DM | 38 | 14 | 63% |
| CF26DD/E w/QTP2X26/CF/UNV DM | 54 | 19 | 65% |
| CF42DT/E w/QTP2X26/32/42CF/UNV DM | 94 | 31 | 67% |
| CF32DT/E w/QTP2X26/32/42CF/UNV DM | 69 | 33 | 52% |
| CF26DD w/C2642UNVME | 26 | 8.5 | 67% |
| CF18DD w/C218UNVME | 18 | 7 | 61% |
| CF26DD w/C2642UNVME | 26 | 9 | 65% |

*Energy savings over life of lamp calculated at $0.11/kWh

### Certifications and Listings

- cULus 1993, cULus 1598c for Type B lamps
- DLC Standard for some lamps
- RoHS
- NSF Listed: NSF/ANSI Standard 2 – Food Equipment
- FCC Title 47 CFR, Part 15 Non-Consumer
- Mercury Free

### Installation

Please refer to the installation manual included inside the packaging for more information.

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

## Ordering Guide

| LED | XX | PB | XXXX | X | DIM | 8 | XX | XXX |
|---|---|---|---|---|---|---|---|---|
| Product Name<br>LED = LED Technology | Wattage<br>16 = 16W<br>15 = 15W<br>9.5 = 9.5W<br>9 = 9W<br>8.5 = 8.5W<br>7 = 7W<br>6 = 6W | Pin Base | Base Type<br>G24D = 2-pin<br>G24Q = 4-pin<br>GX23 = 2-pin | Orientation<br>V = Vertical<br>H = Horizontal<br>O = Omnidirectional | Dimmable | CRI<br>8 = 80+ | Color Temperature<br>27 = 2700K<br>30 = 3000K<br>35 = 3500K<br>41 = 4100K<br>SC1 = CCT Selectable 3000K/3500K/4100K | UL Type<br>BF = Type B<br>SUB = Type A<br>AB = Type AB |

## Ordering Information

| Item Number | Ordering Abbreviation | Lamp Wattage (W) | Base Type | Replaces | Input Voltage (V) | Avg. Life (hrs) | CCT | Typical Lumens (lm) | CRI | Power Factor | Bulb Finish | Case Qty. | DLC Listed* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SubstiTUBE** | | | | | | | | | | | | | |
| 40448 | LED6PBGX23H827 | 6 | GX23 | CF13DS/ECO | Ballast dependent | 50,000 | 2700K | 625 | 80+ | >0.9 | Frosted Glass | 24 | N/A |
| 40449 | LED6PBGX23H835 | 6 | GX23 | CF13DS/ECO | Ballast dependent | 50,000 | 3500K | 625 | 80+ | >0.9 | Frosted Glass | 24 | N/A |
| 40450 | LED6PBGX23H841 | 6 | GX23 | CF13DS/ECO | Ballast dependent | 50,000 | 4100K | 625 | 80+ | >0.9 | Frosted Glass | 24 | N/A |
| **SubstiTUBE High Output** | | | | | | | | | | | | | |
| 41705 | LED15PBG24QHDIM830SUB | 15 | G24Q/GX24Q | CF42DT/E | Ballast dependent | 50,000 | 3000K | 1900 | 80+ | >0.9 | Plastic | 24 | v.5.1 |
| 41706 | LED15PBG24QVDIM830SUB | 15 | G24Q/GX24Q | CF32DT/E | Ballast dependent | 50,000 | 3000K | 2000 | 80+ | >0.9 | Plastic | 24 | v.5.1 |
| 41707 | LED15PBG24QHDIM835SUB | 15 | G24Q/GX24Q | CF42DT/E | Ballast dependent | 50,000 | 3500K | 1900 | 80+ | >0.9 | Plastic | 24 | v.5.1 |
| 41708 | LED15PBG24QVDIM835SUB | 15 | G24Q/GX24Q | CF32DT/E | Ballast dependent | 50,000 | 3500K | 2000 | 80+ | >0.9 | Plastic | 24 | v.5.1 |
| 41709 | LED15PBG24QHDIM841SUB | 15 | G24Q/GX24Q | CF42DT/E | Ballast dependent | 50,000 | 4100K | 1900 | 80+ | >0.9 | Plastic | 24 | v.5.1 |
| 41710 | LED15PBG24QVDIM841SUB | 15 | G24Q/GX24Q | CF32DT/E | Ballast dependent | 50,000 | 4100K | 2000 | 80+ | >0.9 | Plastic | 24 | v.5.1 |
| **SubstiTUBE CCT Selectable** | | | | | | | | | | | | | |
| 41701 | LED9.5PBG24QHDIM8SC1SUB | 9.5 | G24Q/GX24Q | CF26DD/E | Ballast dependent | 50,000 | 3000K,<br>3500K,<br>4100K | 960<br>1020<br>1050 | 80+ | >0.9 | Plastic | 24 | v.5.1 |
| 41702 | LED9.5PBG24QVDIM8SC1SUB | 9.5 | G24Q/GX24Q | CF26DD/E | Ballast dependent | 50,000 | 3000K,<br>3500K,<br>4100K | 1100<br>1120<br>1150 | 80+ | >0.9 | Plastic | 24 | v.5.1 |
| **SubstiTUBE Omnidirectional** | | | | | | | | | | | | | |
| 41711 | LED7PBG24QODIM827SUB | 7 | G24Q/GX24Q | CF18DD/E | Ballast dependent | 50,000 | 2700K | 820 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41712 | LED7PBG24QODIM830SUB | 7 | G24Q/GX24Q | CF18DD/E | Ballast dependent | 50,000 | 3000K | 820 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41713 | LED7PBG24QODIM835SUB | 7 | G24Q/GX24Q | CF18DD/E | Ballast dependent | 50,000 | 3500K | 820 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41714 | LED7PBG24QODIM841SUB | 7 | G24Q/GX24Q | CF18DD/E | Ballast dependent | 50,000 | 4100K | 820 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41715 | LED9.5PBG24QODIM827SUB | 9.5 | G24Q/GX24Q | CF26DD/E | Ballast dependent | 50,000 | 2700K | 1200 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41716 | LED9.5PBG24QODIM830SUB | 9.5 | G24Q/GX24Q | CF26DD/E | Ballast dependent | 50,000 | 3000K | 1200 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41717 | LED9.5PBG24QODIM835SUB | 9.5 | G24Q/GX24Q | CF26DD/E | Ballast dependent | 50,000 | 3500K | 1200 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41718 | LED9.5PBG24QODIM841SUB | 9.5 | G24Q/GX24Q | CF26DD/E | Ballast dependent | 50,000 | 4100K | 1200 | 80+ | >0.9 | Plastic | 24 | N/A |
| **Go to Page 6 for more SubstiTUBE Lamps** | | | | | | | | | | | | | |
| **LEDlescent High Output** | | | | | | | | | | | | | |
| 41695 | LED15PBG24DH830BF | 15 | G24D/G24Q/GX24Q | CF42DT/E | 120-277 | 50,000 | 3000K | 1900 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41697 | LED15PBG24DH835BF | 15 | G24D/G24Q/GX24Q | CF42DT/E | 120-277 | 50,000 | 3500K | 1900 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41699 | LED15PBG24DH841BF | 15 | G24D/G24Q/GX24Q | CF42DT/E | 120-277 | 50,000 | 4100K | 1900 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41696 | LED16PBG24DV830BF | 16 | G24D/G24Q/GX24Q | CF32DT/E | 120-277 | 50,000 | 3000K | 2000 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41698 | LED16PBG24DV835BF | 16 | G24D/G24Q/GX24Q | CF32DT/E | 120-277 | 50,000 | 3500K | 2000 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41700 | LED16PBG24DV841BF | 16 | G24D/G24Q/GX24Q | CF32DT/E | 120-277 | 50,000 | 4100K | 2000 | 80+ | >0.9 | Plastic | 24 | N/A |
| **DUALescent CCT Selectable** | | | | | | | | | | | | | |
| 41691 | LED8.5PBG24DH8SC1AB | 8.5 | G24D/G24Q/GX24Q | CF26DD | Ballast dependent or 120-277 | 50,000 | 3000K,<br>3500K,<br>4100K | 960<br>1020<br>1050 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41692 | LED8.5PBG24DV8SC1AB | 8.5 | G24D/G24Q/GX24Q | CF26DD | Ballast dependent or 120-277 | 50,000 | 3000K,<br>3500K,<br>4100K | 1100<br>1120<br>1150 | 80+ | >0.9 | Plastic | 24 | N/A |
| **DUALescent Omnidirectional** | | | | | | | | | | | | | |
| 41719 | LED7PBG24DO827AB | 7 | G24D/G24Q/GX24Q | CF18DD | Ballast dependent or 120-277 | 50,000 | 2700K | 830 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41720 | LED7PBG24DO830AB | 7 | G24D/G24Q/GX24Q | CF18DD | Ballast dependent or 120-277 | 50,000 | 3000K | 880 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41721 | LED7PBG24DO835AB | 7 | G24D/G24Q/GX24Q | CF18DD | Ballast dependent or 120-277 | 50,000 | 3500K | 880 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41722 | LED7PBG24DO841AB | 7 | G24D/G24Q/GX24Q | CF18DD | Ballast dependent or 120-277 | 50,000 | 4100K | 900 | 80+ | >0.9 | Plastic | 24 | N/A |

*No DLC category for lamps with N/A

## Ordering Information (continued)

| Item Number | Ordering Abbreviation | Lamp Wattage (W) | Base Type | Replaces | Input Voltage (V) | Avg. Life (hrs) | CCT | Typical Lumens (lm) | CRI | Power Factor | Bulb Finish | Case Qty. | DLC Listed* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 41723 | LED9PBG24DO827AB | 9 | G24D/G24Q/GX24Q | CF26DD | Ballast dependent or 120-277 | 50,000 | 2700K | 1150 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41724 | LED9PBG24DO830AB | 9 | G24D/G24Q/GX24Q | CF26DD | Ballast dependent or 120-277 | 50,000 | 3000K | 1200 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41725 | LED9PBG24DO835AB | 9 | G24D/G24Q/GX24Q | CF26DD | Ballast dependent or 120-277 | 50,000 | 3500K | 1250 | 80+ | >0.9 | Plastic | 24 | N/A |
| 41726 | LED9PBG24DO841AB | 9 | G24D/G24Q/GX24Q | CF26DD | Ballast dependent or 120-277 | 50,000 | 4100K | 1250 | 80+ | >0.9 | Plastic | 24 | N/A |

*No DLC category for lamps with N/A

## Specifications & Lighting Data

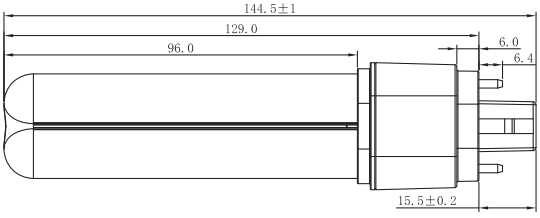
| Lamp | Ballast | Current (AMPS) (120V/277V) | System Power (W) | System Lumens (lm)* | System Efficacy (lm/W) | No of Lamps |
|---|---|---|---|---|---|---|
| LED15PBG24QHDIM8XXSUB | QTP2X26/32/42CF/UNV DM | 0.25/0.11 | 30 | 3800 | 127 | 2 |
| LED15PBG24QVDIM8XXSUB | QTP2X26/32/42CF/UNV DM | 0.25/0.11 | 30 | 4100 | 137 | 2 |
| LED15PBG24DH8XXBF | N/A | 0.25/0.16 | 30 | 3800 | 127 | 2 |
| LED16PBG24DV8XXBF | N/A | 0.27/0.11 | 32 | 4100 | 128 | 2 |
| LED9.5PBG24QHDIM8SC1SUB | QTP2X26/CF/UNV DM | 0.08/0.03 | 9.5 | 1020 | 107 | 1 |
| LED9.5PBG24QVDIM8SC1SUB | QTP2X26/CF/UNV DM | 0.08/0.03 | 9.5 | 1120 | 118 | 1 |
| LED8.5PBG24DH8SC1AB | QTP2X26/CF/UNV DM | 0.07/0.03 | 8.5 | 1020 | 120 | 1 |
| LED8.5PBG24DV8SC1AB | QTP2X26/CF/UNV DM | 0.07/0.03 | 8.5 | 1120 | 132 | 1 |
| LED7PBG24QODIM8XXSUB | QTP1/2X18CF/UNV DM | 0.06/0.03 | 7 | 830 | 119 | 1 |
| LED9.5PBG24QODIM8XXSUB | QTP2X26/CF/UNV DM | 0.08/0.03 | 9.5 | 1200 | 126 | 1 |
| LED7PBG24DO8XXAB | C218UNVME | 0.06/0.03 | 7 | 880 | 126 | 1 |
| LED9PBG24DO8XXAB | C2642UNVME | 0.08/0.03 | 9 | 1250 | 139 | 1 |

*NOTE: System lumens are represented by values for 3500K.

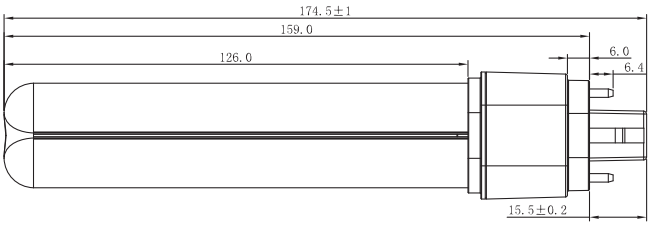
## Physical Information

| Lamp Description | Max. Overall Length (mm) | Base Face to Top of Lamp (mm) | Max. Base Width (Side) (mm) | Guide Post Length (mm) |
|---|---|---|---|---|
| LED15PBG24QHDIM8XXSUB<br>LED15PBG24DHBF | 169 | 153.5 | 45.0 | 15.5 |
| LED15PBG24QVDIM8XXSUB<br>LED16PBG24DVBF | 162.5 | 147.0 | 88 | 15.5 |
| LED8.5PBG24DHSC1AB | 130.0 | 114.5 | 70 | 15.5 |
| LED9.5PBG24QVDIM8SC1SUB<br>LED8.5PBG24DV8SC1AB | 161.4 | 145.9 | 33.2 | 15.5 |
| LED7PBG24QODIM8XXSUB<br>LED7PBG24DO8XXAB | 144.5 | 129.0 | 34.5 | 15.5 |
| LED9PBG24DO8XXAB | 174.5 | 159.0 | 34.5 | 15.5 |
| LED6PBGX238XX | 172.0 | 157.0 | 27 | 15 |

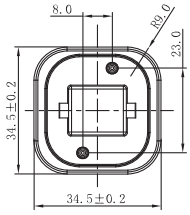
### 7W Omnidirectional SubstiTUBE® and DUALescent™



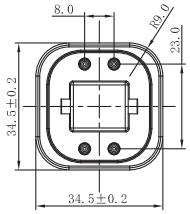

### 9W Omnidirectional SubstiTUBE and DUALescent



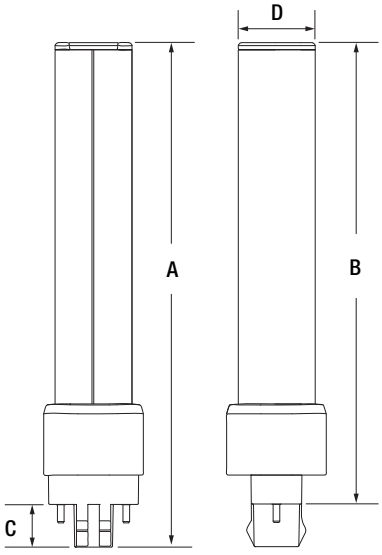

### DUALescent UL Type A+B Base – G24d




### SubstiTUBE UL Type A Base – G24q



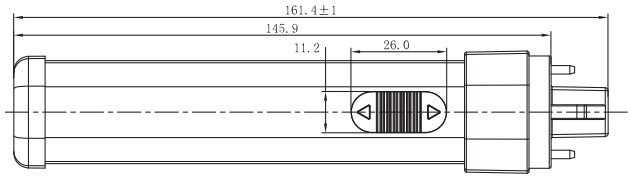

### 6W SubstiTUBE Base – GX23



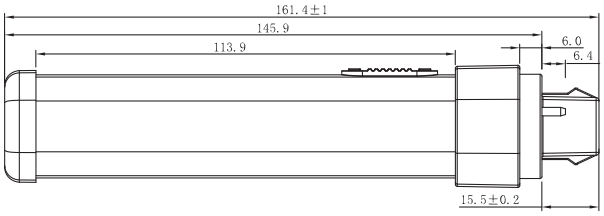
## Physical Information (continued)

### CCT Selectable UL Type A SubstiTUBE® and UL Type A+B DUALescent™ Horizontal

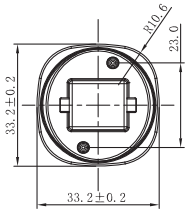
**Front View**



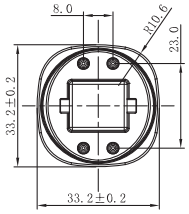

**Side View**




**DUALescent UL Type A+B Base – G24d**

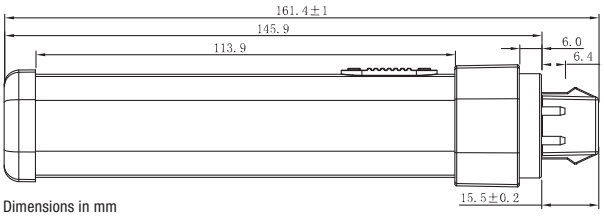



**SubstiTUBE UL Type A Base – G24q**




### CCT Selectable UL Type A SubstiTUBE Horizontal

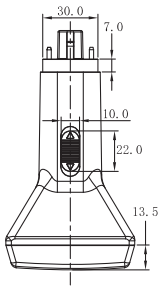
**Side View**



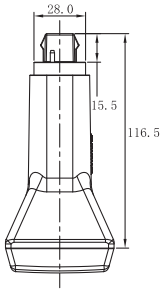

Dimensions in mm

### CCT Selectable UL Type A SubstiTUBE and UL Type A+B DUALescent Vertical

**Front View**

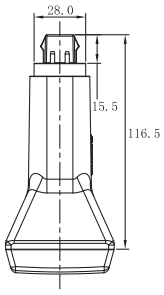



**Side View**

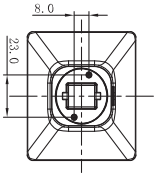



### CCT Selectable UL Type A SubstiTUBE Vertical

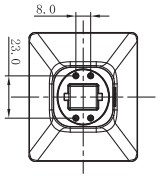
**Side View**




**DUALescent UL Type A+B Base – G24d**



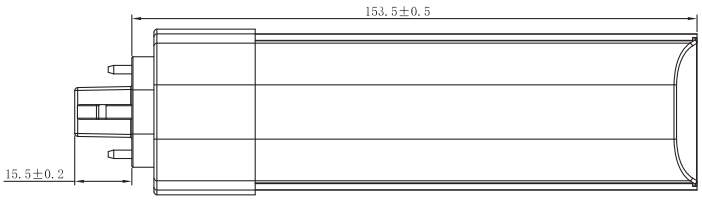

**SubstiTUBE UL Type A Base – G24q**



## Physical Information (continued)

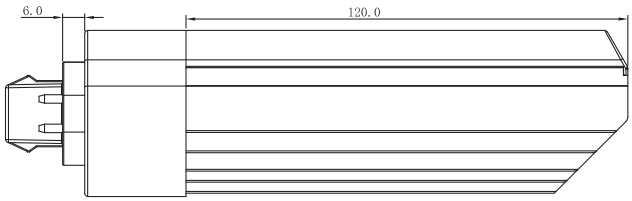
### High Output UL Type A SubstiTUBE® and UL Type B LEDlescent™ Horizontal

**Front View**

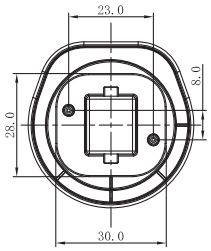



### High Output UL Type A SubstiTUBE Horizontal

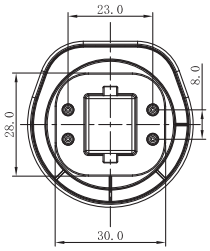
**Side View**




**LEDlescent UL Type B Base – G24d**

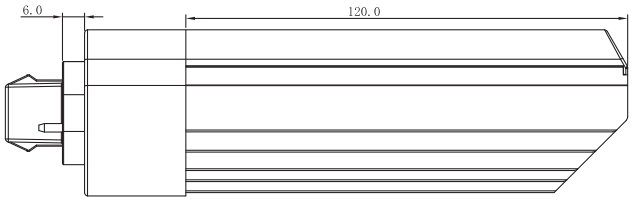



**SubstiTUBE UL Type A Base – G24q**

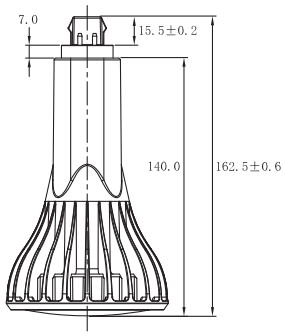



### High Output UL Type B LEDlescent Horizontal

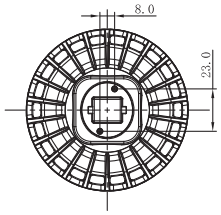
**Side View**



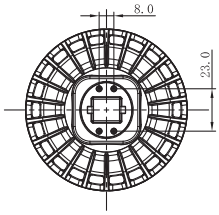

### High Output UL Type A SubstiTUBE Vertical



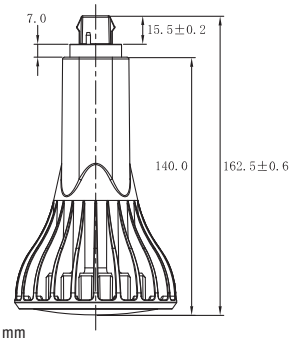

**LEDlescent UL Type B Base – G24d**




**SubstiTUBE UL Type A Base – G24q**




### High Output UL Type B LEDlescent Vertical




Dimensions in mm

## Specifications

**EMI/RFI:** FCC Title 47 CFR, Part 18, Non-Consumer (GX24q) and Part 15, Class B (GX23)

## Ordering Guide

| LED | 9 | / | PB | / | GX24 | / | H | / | 8 | 35 | G2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LED Lamp | Wattage | | Pin Base | | Base Type | | Orientation | | CRI= 80+ | Color Temperature | Generation |

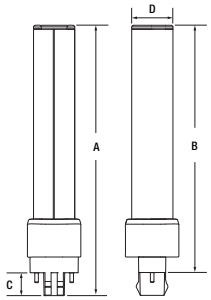
## Ordering Information

| Item Number | Ordering Abbreviation | Configuration | Wattage | Lumens (lm) | CCT | CRI | DIM | DLC (Y/N) |
|---|---|---|---|---|---|---|---|---|
| 40019* | LED9PBGX24QH827G2 | Horizontal | 9W | 900 | 2700K | 80 | No | N |
| 40020* | LED9PBGX24QH830G2 | Horizontal | 9W | 950 | 3000K | 80 | No | N |
| 75036* | LED9PBGX24QH835G2 | Horizontal | 9W | 950 | 3500K | 80 | No | N |
| 75037* | LED9PBGX24QH841G2 | Horizontal | 9W | 1000 | 4100K | 80 | No | Y |
| 40017* | LED9PBGX24QV827G2 | Vertical | 9W | 900 | 2700K | 80 | No | N |
| 40018* | LED9PBGX24QV830G2 | Vertical | 9W | 950 | 3000K | 80 | No | N |
| 75038* | LED9PBGX24QV835G2 | Vertical | 9W | 950 | 3500K | 80 | No | N |
| 75039* | LED9PBGX24QV841G2 | Vertical | 9W | 1000 | 4100K | 80 | No | N |
| 40406* | LED16/PB/GX24Q/H/827 | Horizontal | 16W | 1650 | 2700K | 80 | No | Y |
| 40407* | LED16/PB/GX24Q/H/830 | Horizontal | 16W | 1750 | 3000K | 80 | No | Y |
| 40408* | LED16/PB/GX24Q/H/835 | Horizontal | 16W | 1750 | 3500K | 80 | No | Y |
| 40409* | LED16/PB/GX24Q/H/841 | Horizontal | 16W | 1850 | 4100K | 80 | No | Y |
| 40410* | LED16/PB/GX24Q/V/827 | Vertical | 16W | 1650 | 2700K | 80 | No | Y |
| 40411* | LED16/PB/GX24Q/V/830 | Vertical | 16W | 1750 | 3000K | 80 | No | Y |
| 40412* | LED16/PB/GX24Q/V/835 | Vertical | 16W | 1750 | 3500K | 80 | No | Y |
| 40413* | LED16/PB/GX24Q/V/841 | Vertical | 16W | 1850 | 4100K | 80 | No | Y |

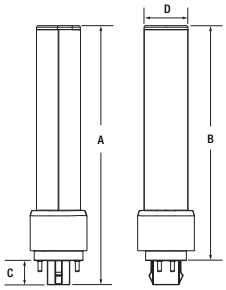
*The above lamps will be phasing out with the introduction of our new portfolio. Upon depletion of inventory, the lamps will be obsolete.

## Lamp Dimensions

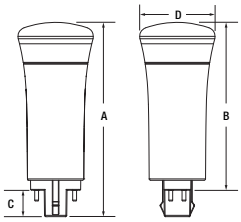
GX23



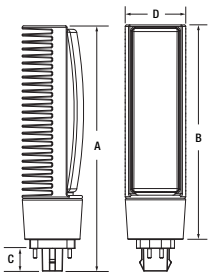

9W GX24Q Horizontal



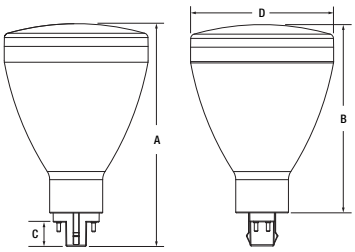

9W GX24Q Vertical




16W GX24Q Horizontal




16W GX24Q Vertical




| Ordering Abbreviation | (A) Max. Overall Length | (B) Base Face to Top of Lamp | (C) Guide Post Length | (D) Max. Base Width (Front) | (E) Max. Base Width (Side) |
|---|---|---|---|---|---|
| GX23 | 6.77" (172mm) | 6.18" (157mm) | .59" (15mm) | 1.06" (27mm) | |
| 9W GX24Q Horizontal | 6.61" (168mm) | 6.02" (153mm) | .59" (15mm) | 1.06" (27mm) | |
| 9W GX24Q Vertical | 4.63" (117.5mm) | 4.0" (101.5mm) | .63" (16mm) | 1.81" (46mm) | |
| 16W GX24Q Horizontal | 6.40" (162.6mm) | 5.82" (147.7mm) | .59" (15mm) | 1.59" (40mm) | 1.61" (41mm) |
| 16W GX24Q Vertical | 5.81" (147.5mm) | 5.18" (131.5mm) | .63" (16mm) | 3.74" (95mm) | N/A |

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