

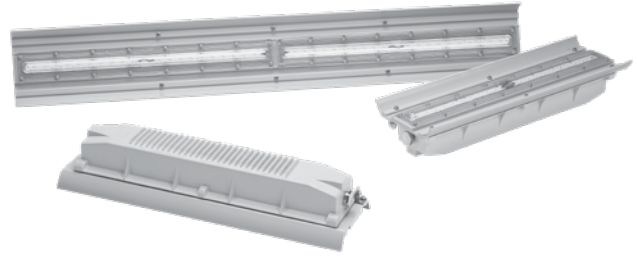
ATEX/IECEX Viamaster™ LED Series Luminaires

Standard or with Emergency Battery Backup
Hazardous Locations

ATEX/IECEX: Zones 2 and 22 | Ⓢ II 3 GD | EPL Gc and Dc | Ex nA IIC; Ex tc IIIC | IP66/IK08 | Ⓢ II 2 D | EPL Db | Ex tb IIIC | IP66/IK08

Applications

- For use in locations where:
 - Flammable gases, vapors and dusts are present
 - A high degree of corrosion resistance is required
 - Protection against dirt, water and moisture is necessary
- Typical applications include:
 - Oil refineries
 - Petrochemical facilities
 - Pulp and paper mills
 - Food processing plants
 - Waste and sewer treatment
 - Underground tunnels
 - General manufacturing facilities
 - Hydrogen and Biofuels plants
 - LNG (Liquid Natural Gas) plants



Features

- 60,000+ hour LED life for years of maintenance free operation.
- Lightweight design, hinged cover with captive screws, and terminal block wiring for easy installation and maintenance.
- Standard screw-type terminal block can accept 1 to 6 mm² wire.
- Contemporary, low profile design suitable for tight spaces.
- Field replaceable LED driver and lens.
- Industry-leading thermal management for safe, reliable operation over wide temperature range.
- Full range of lumen outputs, with light distribution equivalent to the Appleton FN Series fluorescent fixtures.
- Easy to retrofit in same mounting footprint as the Appleton FE and FN Series fluorescent fixtures.
- M20 plug or M25 plug provided.
- Universal, high efficiency, drivers cover voltage requirements for 120-277 Vac, 50/60 Hz +/- 10%, 125-300 Vdc.
- Standard 2 kV surge suppression.
- 5 year standard warranty.

Options

- Safety cable for fall safe retention; add suffix **-C** to the end of the catalog number.

Standard Materials

- Housing: copperfree (4/10 of 1% max.) aluminum.
- Lens: thermal shock- and impact-resistant polycarbonate lens.
- Gasket: silicone rubber, mechanically secured.
- Bolts: stainless steel.
- Close up plugs: nickel plated brass.
 - Mounting hardware: See ordering information.

Standard Finishes

- Housing: gray RAL 7038 epoxy

ATEX/IECEX Certifications and Compliances

- Certification Type: LLEDA
 - Gas: Zone 2
 - Conforming to ATEX 94/9/EC: Ⓢ II 3 G
 - Protection Level: EPL Gc
 - Type of Protection: Ex nA IIC
 - Temperature Class: See *Temperature Codes table* (T6 to T3)
 - EC Declaration of Conformity: 50309
 - ATEX Certificate: LCIE 15 ATEX 1003X
 - IECEx Certificate: IECEx LCIE 15.0010X

- Dust: Zones 21 and 22
 - Conforming to ATEX 2014/34/EU: Ⓢ II 2 D and Ⓢ II 3 D
 - Protection Level: EPL Db and Dc
 - Type of Protection: Ex tb IIIC and Ex tc IIIC
 - Surface Temperature: See *Temperature Codes table* [+63 °C to +84 °C (+145 °F to +183 °F)]
 - EC Declaration of Conformity: 50309
 - ATEX Certificate, Zone 21: LCIE 15 ATEX 3006X
 - ATEX Certificate, Zone 22: LCIE 15 ATEX 1003X
 - IECEx Certificate, Zone 21 and 22: IECEx LCIE 15.0010X
- Ambient Temperature:
 - Standard Version:
 - LLEDAA2: -40 °C up to +65 °C (-40 °F up to +149 °F)
 - LLEDAA5/7: -40 °C up to +60 °C (-40 °F up to +140 °F)
 - Emergency Version:
 - LLEDAA2: -40 °C up to +65 °C (-40 °F up to +149 °F)
 - LLEDAA5/7: -40 °C up to +60 °C (-40 °F up to +140 °F)
- Index of Protection according EN/IEC 60529: IP66
- Impact Resistance (shock): IK08
- Ex Standards: EN/IEC 60079-0; 60079-15; 60079-31
- Product Standards: EN/IEC 61347-1; EN/IEC 61347-2-13; 60598-1
- EMC Standards: EN/IEC 61000.4.2; 61000.4.3; 61000.4.4; 61000.4.5; 61000.4.6; 61000.4.8; 61000.4.11; EN/IEC 55015; 61547

Related Products

- For NEC/CEC certified products, refer to NEC/CEC Viamaster LED Series Luminaires.

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Order Using Catalog Numbering Guide — ATEX/IECEX Viamaster™ LED Series Luminaires

| | | | | | | | |
|--|--|---|--|---|---|---|---|
| <p>LLEDA</p> <p>Series Prefix: LLEDA - ATEX/IECEX Certified Linear LED Series</p> | <p>A</p> <p>Housing: A - Aluminum</p> | <p>2</p> <p>Size of Cable Entries: 2 - M20 3 - M25</p> | <p>L</p> <p>Termination/Wiring: L - Loop In/Out (3 entries, 1 at one end and 2 at the other) S - Standard (2 entries on the same side) T - Through Wired (2 entries, one at each end)</p> | <p>2</p> <p>Lumens [Length of Fixture]: 2 - 2K Lumens, [0.61 m (2 ft)] 5 - 5K Lumens, [0.61 m (2 ft)] 7 - 7K Lumens, [1.22 m (4 ft)]</p> | <p>BU</p> <p>Voltage: BU - 120-277 Vac, 50/60 Hz</p> | <p>Z2</p> <p>Hazardous Rating: Z2 - Zone 2 and 21-22</p> | <p>C</p> <p>Options: C - Safety Cables D - Diffused lens E - 3h Non-maintained Emergency H - 90 Minutes Non-maintained Emergency</p> |
|--|--|---|--|---|---|---|---|

Lumen Output (Efficacy) ①

| Model | Fluorescent Equivalency | Light Distribution Pattern | CCT (Correlated Color Temperature) | CRI (Color Rendering Index) | Lumen Output | Efficacy (lm/W) |
|---------------------------------|-------------------------|----------------------------|------------------------------------|-----------------------------|--------------|-----------------|
| Clear Polycarbonate Lens | | | | | | |
| LLEDA*2 | 3 x 18W | Linear | 5650K | 70 | 2,200 | 100 |
| LLEDA*5 | 2 x 36W | Linear | 5650K | 70 | 4,400 | 98 |
| LLEDA*7 | 3 x 58W | Linear | 5650K | 70 | 7,800 | 96.3 |

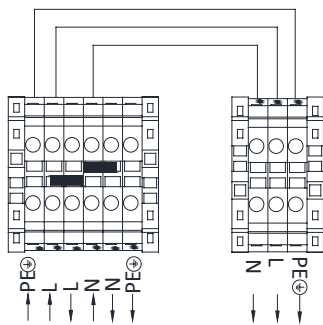
Electrical Specifications ②

| Model | Voltage | Input Power (Watts) | Input Current (Amps) | Power Factor (PF) | Total Harmonic Distortion (THD) |
|---------|---------|---------------------|----------------------|-------------------|---------------------------------|
| LLEDA*2 | 120 Vac | 22 | .24 | >0.95 | <20% |
| | 277 Vac | 22 | .15 | >0.87 | <20% |
| LLEDA*5 | 120 Vac | 45 | .51 | >0.95 | <20% |
| | 277 Vac | 45 | .30 | >0.95 | <20% |
| LLEDA*7 | 120 Vac | 81 | .90 | >0.95 | <20% |
| | 277 Vac | 81 | .53 | >0.95 | <20% |

Wiring Diagrams

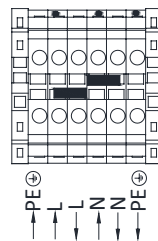
Version : L

Dual Loop In / Out — Through Wiring (Single Phase)
3 Entries, 1 at one end and 2 at the other



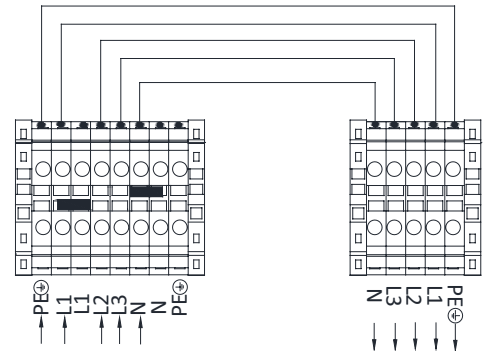
Version : S

Standard (Single Phase)
2 Entries on the same side



Version : L

Through Wiring (Three Phase)
2 Entries, one at each end



① All lumen values are typical (tolerance +/- 10%).

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Temperature Codes

| Model | Ambient Temperature °C (°F) | Supply Wire Temperature °C (°F) | Zone 2 - 22 Ⓜ | | Zone 21 |
|---------|--------------------------------|------------------------------------|--|--|--|
| | | | Gas Class of Temperature °C (°F) ① | Dust Surface Temperature °C (°F) | Dust Surface Temperature °C (°F) |
| LLEDA*2 | +40 (+104) | +75 (+167) | T6 +75 (+167) | +54 (+129) | +54 (+129) |
| | +55 (+131) | +75 (+167) | T5 +90 (+203) | +69 (+156) | +69 (+156) |
| | +60 (+140) | +75 (+167) | T5 +90 (+203) | +74 (+165) | +74 (+165) |
| | +65 (+149) | +75 (+167) | T5 +100 (+212) | +79 (+174) | +79 (+174) |
| LLEDA*5 | +40 (+104) | +75 (+167) | T4 +129 (+264) | +64 (+147) | +64 (+147) |
| | +55 (+131) | +75 (+167) | T3 +144 (+291) | +79 (+174) | +79 (+174) |
| | +60 (+140) | +75 (+167) | T3 +148 (+298) | +84 (+183) | +84 (+183) |
| LLEDA*7 | +40 (+104) | +75 (+167) | T4 +130 (+266) | +64 (+147) | +64 (+147) |
| | +55 (+131) | +75 (+167) | T3 +145 (+293) | +79 (+174) | +79 (+174) |
| | +60 (+140) | +75 (+167) | T3 +149 (+300) | +84 (+183) | +84 (+183) |

“T” Numbers Represent the Maximum External Surface Temperature

| “T” # | T1 | T2 | T3 | T4 | T5 | T6 |
|---------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|-------------------------------|---------------|
| Temp. Range °C (°F) | +301 to +450 (+547 to +842) | +201 to +300 (+394 to +572) | +136 to +200 (+277 to +392) | +101 to +135 (+214 to +275) | +86 to +100 (+187 to +212) | +85 (+185) |


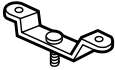





① T-Codes provided in catalog pages are based on worst case data.
 ② Zone 2 (Gas) and 22 (Dust) locations as designated by the IEC.

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| Accessories and Replacement Parts | | | |
|---|---|--------------------|----------------|
| | Description | Weight in kg (lbs) | Catalog Number |
| Fixing Brackets for Surface Installation — Set of Two | | | |
|  | 316 stainless steel | 0.14 (0.3) | FEFBS |
| Brackets for Surface Mounting — Set of Two | | | |
|  | Aluminium (gray painted) | 0.34 (0.7) | FESBA |
| | 316 stainless steel | 0.64 (1.4) | FESBS |
|  | 14-gauge stainless steel | 0.41 (0.9) | FVSM ① |
| Fixed 45° Wall Mount | | | |
|  | 11-gauge (1/8") stainless steel | 0.59 (1.3) | FVWFM |
| Hinged Brackets for Adjusting Luminaire | | | |
|  | Aluminum | 0.75 (1.7) | FEHBA |
| M8 Ring Bolts — Set of Two | | | |
|  | Zinc plated steel | 0.11 (0.2) | FERBM8Z |
| Half Clamps Brackets for Pole Mounting — Set of two | | | |
| | Diameter for 1-1/4" to 1-1/2" pole: 42 mm to 49 mm (1.65" to 1.93") | | |
|  | • Zinc plated steel | 0.34 (0.7) | FEHC49Z |
| | • 316 stainless steel | 0.34 (0.7) | FEHC49S |
| | Diameter for 2" pole: 60 mm (2.3") | | |
| | • Zinc plated steel | 0.48 (1.1) | FEHC60Z |
| | • 316 stainless steel | 0.52 (1.2) | FEHC60S |
| Retrofit Brackets — Set of Two | | | |
| | Adapts mounting holes for 1.22 m (4 ft) fixture to 700 mm (27.56") mounting centers. | 0.57 (1.25) | LLEDRB |
| Safety Cables — Set of Two | | | |
| | Attached to fixtures to guard against them falling when the primary method of attachment fails. | 0.30 (0.7) | LLEDSC |
| Replacement Drivers | | | |
| | 120-277 Vac driver (-40 °C to +65 °C [-40 °F to + 149 °F]) | 0.41 (0.9) | LLEDBU2 |
| Replacement Lenses | | | |
| | Clear Polycarbonate lens with an integral gasket | 0.68 (1.5) | LLEDGPL |

① FVSM does not retrofit in same mounting footprint as the Appleton FN and FE Series.

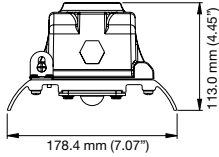
ATEX/IECEx Viamaster™ LED Series Luminaires

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Hazardous Locations

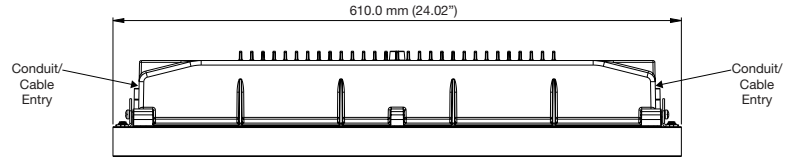
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Luminaire Dimensions in Millimeters (Inches)

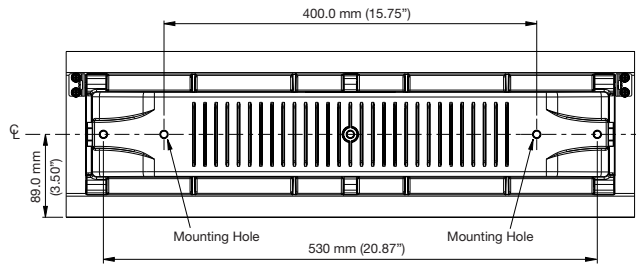
End View — LLEDA*2 and LLEDA*5



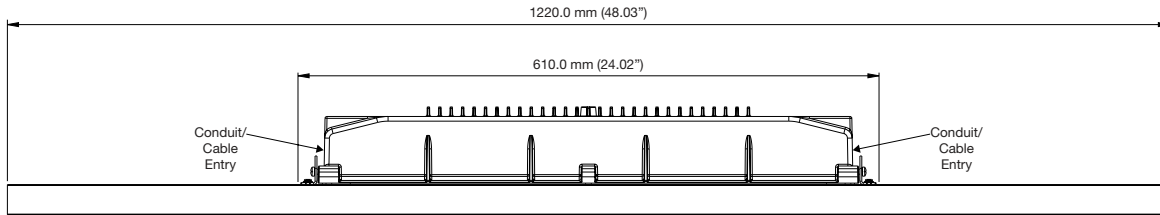
Side View — LLEDA*2 and LLEDA*5



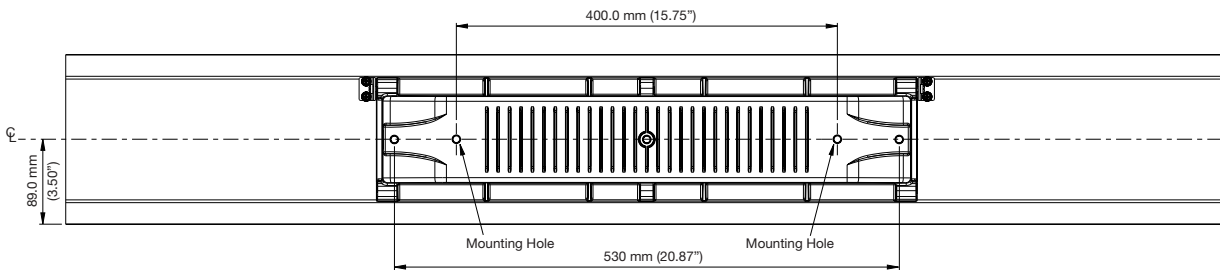
Top (Mounting) View — LLEDA*2 and LLEDA*5



Side View — LLEDA*7



Top (Mounting) View — LLEDA*7



Luminaire Specifications

| Model | Length in m (ft) | Weight in kg (lb) |
|---------|------------------|-------------------|
| LLEDA*2 | 0.61 m (2 ft) | 6.21 (13.7) |
| LLEDA*5 | 0.61 m (2 ft) | 6.35 (14.0) |
| LLEDA*7 | 1.22 m (4 ft) | 8.69 (19.15) |

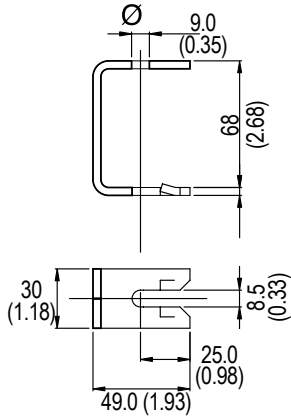
ATEX/IECEx Viamaster™ LED Series Luminaires

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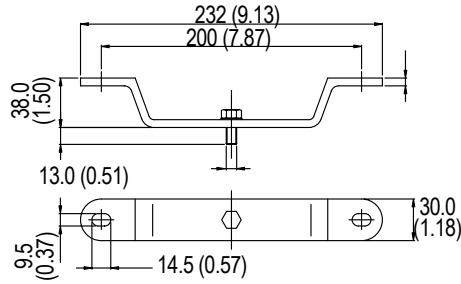
ATEX/IECEx: Zones 2 and 22 | II 3 GD | EPL Gc and Dc | Ex nA IIC; Ex tc IIIC | IP66/IK08 | II 2 D | EPL Db | Ex tb IIIC | IP66/IK08

Mounting Bracket Dimensions in Millimeters (Inches)

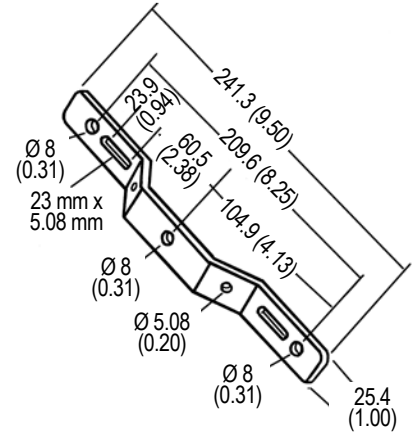
FEFBS



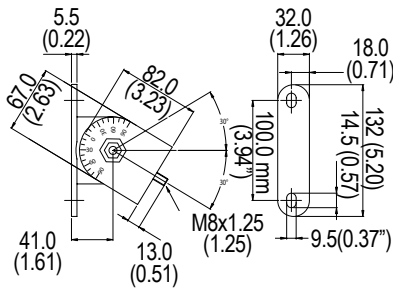
FESBA/FESBS



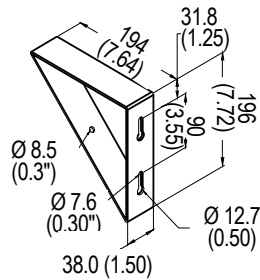
FVSM



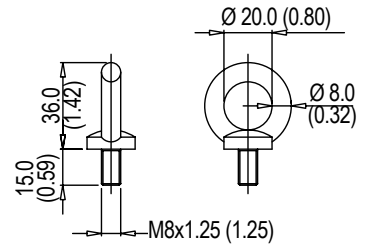
FEHBA



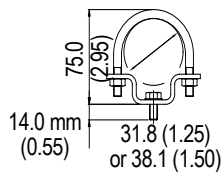
FWWM



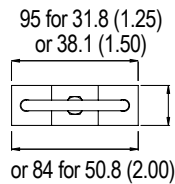
FERBM8Z



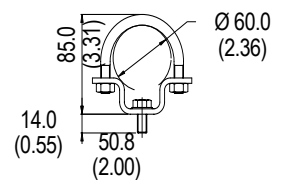
FEHC49Z/FEHC49S



FEHC49Z/FEHC49S/FEHC60Z/FEHC60S



FEHC60Z/FEHC60S



LED Luminaires | Linear | Hazardous Location | ATEX / IECEx

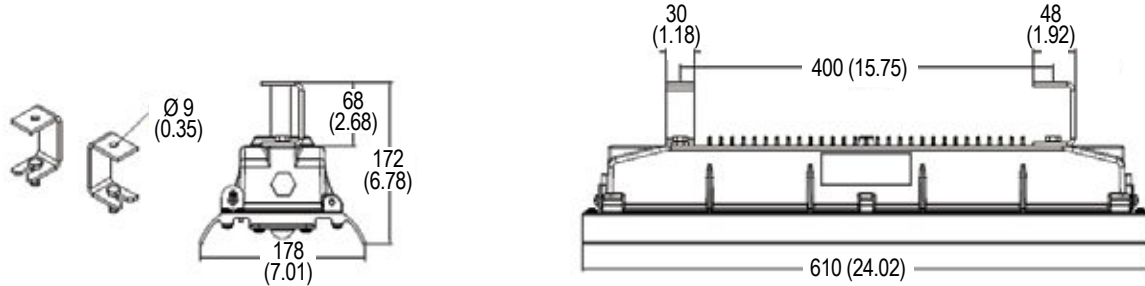
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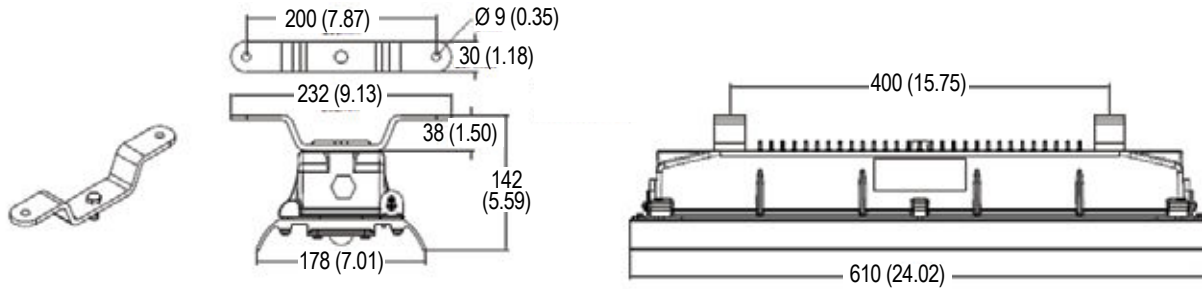
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Mounting Options Dimensions in Millimeters (Inches)

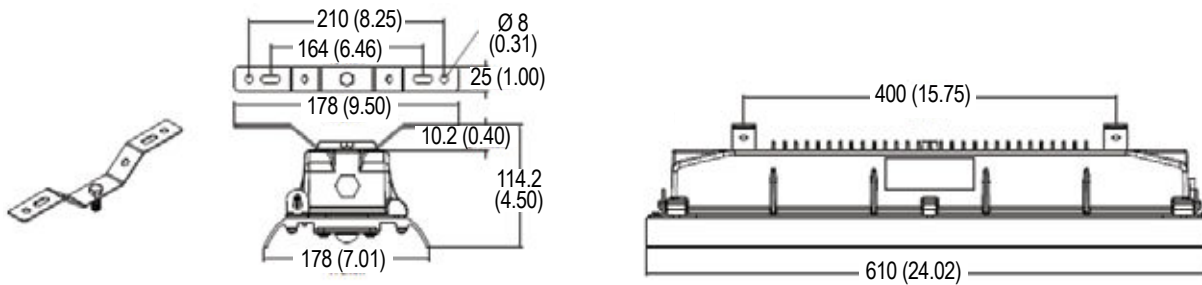
Ceiling/Surface Mount — FEFBS



Ceiling/Surface Mount — FESBA/FESBS



Ceiling/Surface Mount — FVSM



ATEX/IECEX Viamaster™ LED Series Luminaires

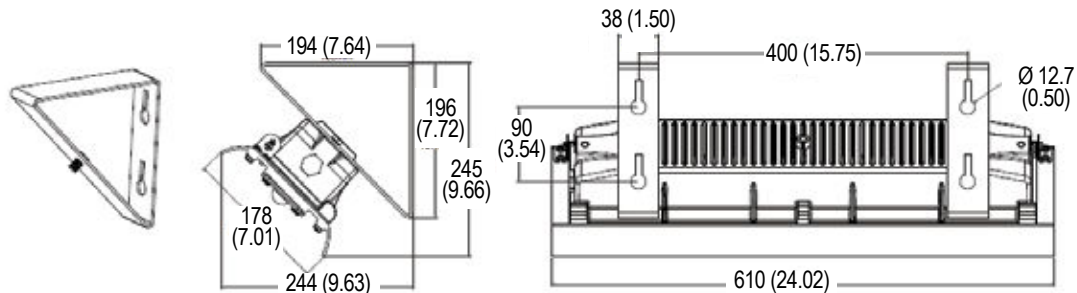
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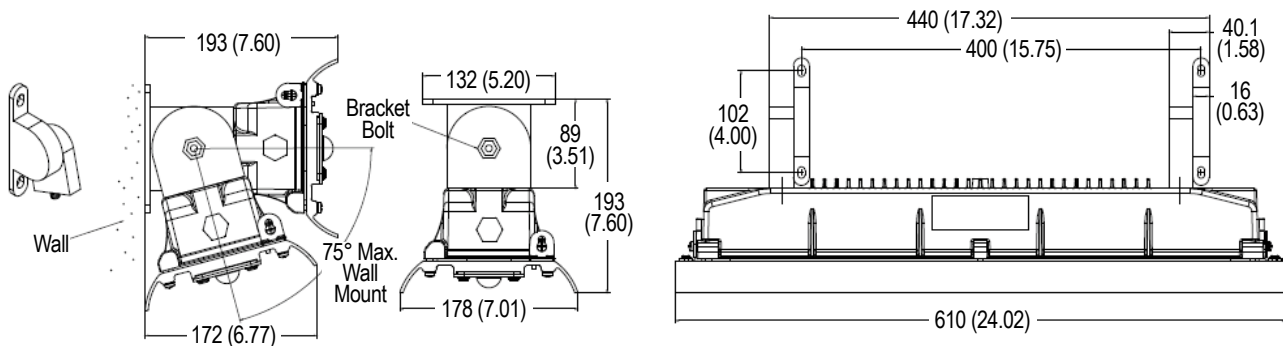
ATEX/IECEX: Zones 2 and 22 | II 3 GD | EPL Gc and Dc | Ex nA IIC; Ex tc IIIC | IP66/IK08 | II 2 D | EPL Db | Ex tb IIIC | IP66/IK08

Mounting Options Dimensions in Millimeters (Inches)

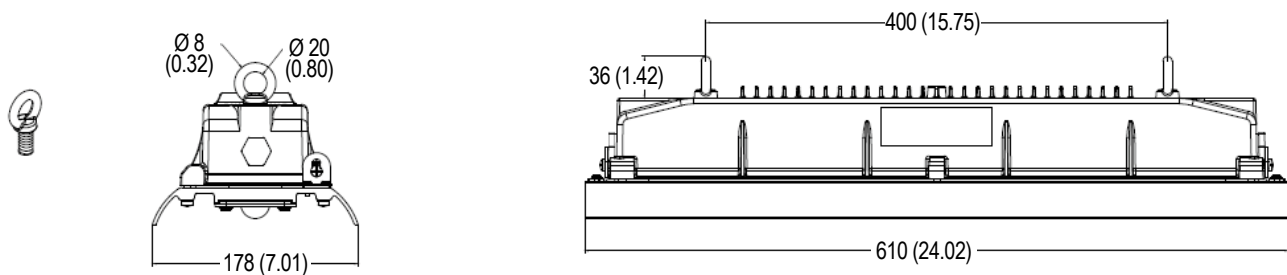
Wall/Fixed 45° Mount — FVWFM



Wall/Hinged Mount — FEHBA



Ceiling/Chain Mount — FERBM8Z



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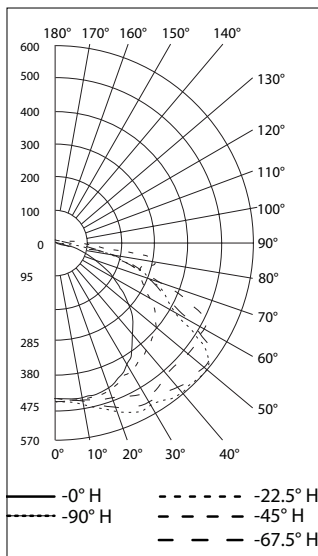
Photometric Data — DATA SHOWN IS ABSOLUTE

LLEDAA(XY)2BUZ2 with Clear Polycarbonate Lens

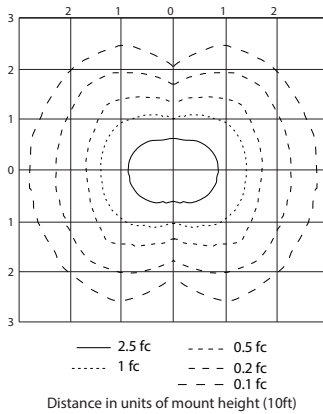
X = cable entry size, Y = style of termination

Zonal Lumens and Percentages at +25 °C (-77 °F)

POLAR CANDELA DISTRIBUTION



ISOCANDELA PLOT



ZONAL LUMEN SUMMARY

| Zone | Lumens | % Luminaire |
|--------|--------|-------------|
| 0-30 | 424.1 | 20.2 |
| 0-40 | 741.2 | 35.4 |
| 0-60 | 1521 | 72.6 |
| 60-90 | 573.3 | 27.4 |
| 0-90 | 2094 | 100.0 |
| 90-180 | 0.3 | 0.0 |
| 0-180 | 2095 | 100.0 |

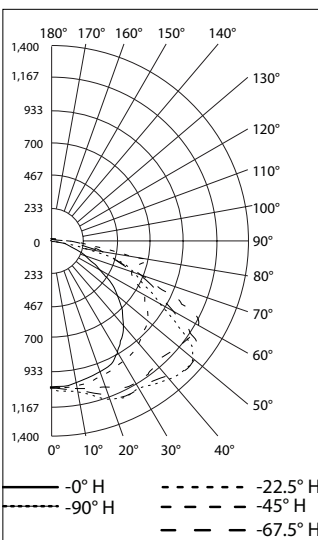
| Zone | Lumens | % Luminaire |
|--------|--------|-------------|
| 0-10 | 46.7 | 2.2 |
| 10-20 | 140.9 | 6.7 |
| 20-30 | 236.4 | 11.3 |
| 30-40 | 317.2 | 15.1 |
| 40-50 | 378.4 | 18.1 |
| 50-60 | 401.5 | 19.2 |
| 60-70 | 324.6 | 15.5 |
| 70-80 | 209.6 | 10.0 |
| 80-90 | 39.1 | 1.9 |
| 90-100 | 0.3 | 0.0 |

LLEDAA(XY)5BUZ2 with Clear Polycarbonate Lens

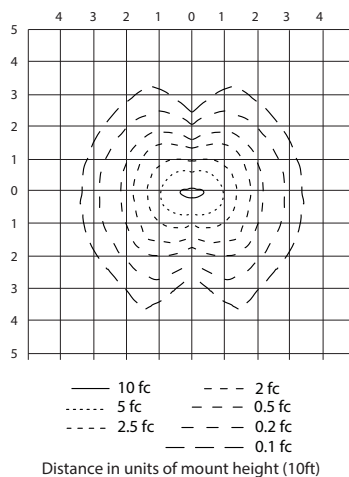
X = cable entry size, Y = style of termination

Zonal Lumens and Percentages at +25 °C (-77 °F)

POLAR CANDELA DISTRIBUTION



ISOCANDELA PLOT



ZONAL LUMEN SUMMARY

| Zone | Lumens | % Luminaire |
|--------|--------|-------------|
| 0-30 | 912.8 | 20.3 |
| 0-40 | 1593 | 35.5 |
| 0-60 | 3282 | 73.0 |
| 60-90 | 1206 | 26.8 |
| 0-90 | 4488 | 99.9 |
| 90-180 | 4.5 | 0.1 |
| 0-180 | 4492 | 100.0 |

| Zone | Lumens | % Luminaire |
|---------|--------|-------------|
| 0-10 | 100.4 | 2.2 |
| 10-20 | 303.6 | 6.8 |
| 20-30 | 508.8 | 11.3 |
| 30-40 | 680.0 | 15.1 |
| 40-50 | 822.5 | 18.3 |
| 50-60 | 866.3 | 19.3 |
| 60-70 | 682.0 | 15.2 |
| 70-80 | 438.3 | 9.8 |
| 80-90 | 85.9 | 1.9 |
| 90-100 | 4.2 | 0.1 |
| 100-110 | 0.3 | 0.0 |

LED Luminaires | Linear | Hazardous Location | ATEX / IECEX

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Hazardous Locations

ATEX/IECEX: Zones 2 and 22 | II 3 GD | EPL Gc and Dc | Ex nA IIC; Ex tc IIIC | IP66/IK08 | II 2 D | EPL Db | Ex tb IIIC | IP66/IK08

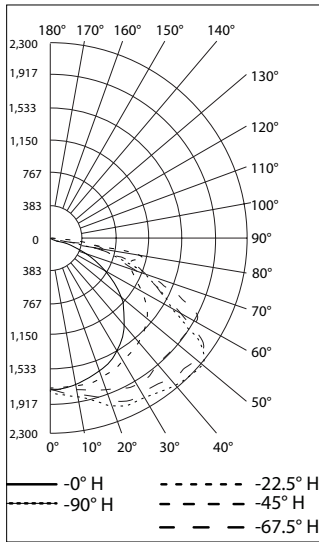
Photometric Data — DATA SHOWN IS ABSOLUTE

LLEDAA(XY)7BUZ2 with Clear Polycarbonate Lens

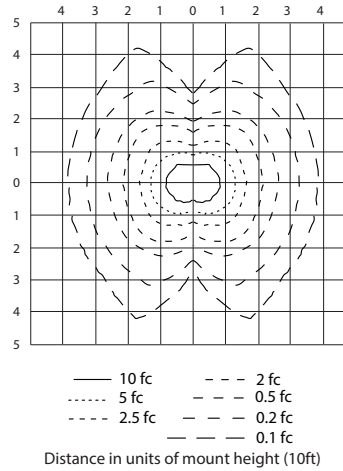
X = cable entry size, Y = style of termination

Zonal Lumens and Percentages at +25 °C (-77 °F)

POLAR CANDELA DISTRIBUTION



ISOCANDELA PLOT



ZONAL LUMEN SUMMARY

| Zone | Lumens | % Luminaire |
|--------|--------|-------------|
| 0-30 | 1560 | 20.0 |
| 0-40 | 2728 | 34.9 |
| 0-60 | 5631 | 72.1 |
| 60-90 | 2171 | 27.8 |
| 0-90 | 7802 | 100.0 |
| 90-180 | 2.8 | 0.0 |
| 0-180 | 7805 | 100.0 |

| Zone | Lumens | % Luminaire |
|--------|--------|-------------|
| 0-10 | 170.7 | 2.2 |
| 10-20 | 518.4 | 6.6 |
| 20-30 | 870.5 | 11.2 |
| 30-40 | 1168 | 15.0 |
| 40-50 | 1406 | 18.0 |
| 50-60 | 1497 | 19.2 |
| 60-70 | 1229 | 15.7 |
| 70-80 | 785.7 | 10.1 |
| 80-90 | 156.6 | 2.0 |
| 90-100 | 2.7 | 0.0 |

LED Luminaires | Linear | Hazardous Location | ATEX / IECEx