ATEX/IECEx Viamaster™ LED Series Luminaires

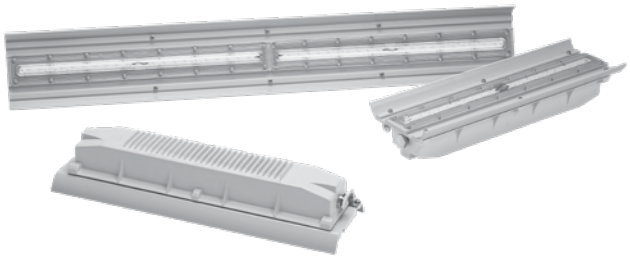
Standard or with Emergency Battery Backup

Hazardous Locations

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

LLEDA	A	2	L	2	BU	Z2	C
Series Prefix: LLEDA - ATEX/IECEx Certified Linear LED Series	Housing: A - Aluminum	Size of Cable Entries: 2 - M20 3 - M25	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)	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)]	Voltage: BU - 120-277 Vac, 50/60 Hz	Hazardous Rating: Z2 - Zone 2 and 21-22	Options: C - Safety Cables D - Diffused lens E - 3h Non-maintained Emergency H - 90 Minutes Non-maintained Emergency

Lumen Output (Efficacy) ①

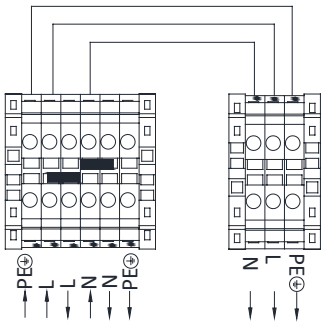
Model	Fluorescent Equivalency	Light Distribution Pattern	CCT (Correlated Color Temperature)	CRI (Color Rendering Index)	Lumen Output	Efficacy (lm/W)
Clear Polycarbonate Lens						
LLEDA*2	3 x 18W	Linear	5650K	70	2,200	100
LLEDA*5	2 x 36W	Linear	5650K	70	4,400	98
LLEDA*7	3 x 58W	Linear	5650K	70	7,800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

Electrical Specifications ②

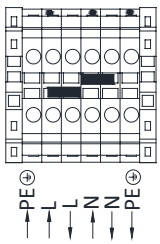
Model	Voltage	Input Power (Watts)	Input Current (Amps)	Power Factor (PF)	Total Harmonic Distortion (THD)
LLEDA*2	120 Vac	22	.24	>0.95	<20%
	277 Vac	22	.15	>0.87	<20%
LLEDA*5	120 Vac	45	.51	>0.95	<20%
	277 Vac	45	.30	>0.95	<20%
LLEDA*7	120 Vac	81	.90	>0.95	<20%
	277 Vac	81	.53	>0.95	<20%

Wiring Diagrams

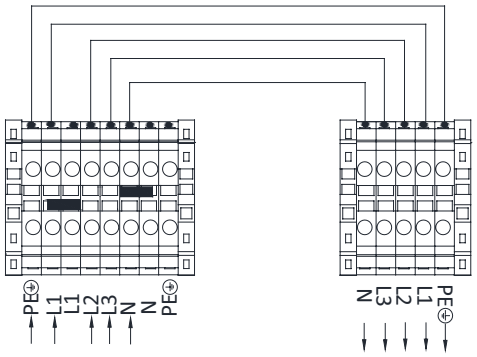
Version : L
Dual Loop In / Out — Through Wiring (Single Phase)
3 Entries, 1 at one end and 2 at the other



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%).*
② *All values are typical (tolerance +/-10%). Same electrical ratings apply to each luminaire with different LED position, mounting versions and cable entries.*

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Temperature Codes

Model	Ambient Temperature °C (°F)	Supply Wire Temperature °C (°F)	Zone 2 - 22 ② Gas Class of Temperature °C (°F) ①	Zone 2 - 22 ② Dust Surface Temperature °C (°F)	Zone 21 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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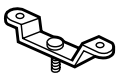
Accessories and Replacement Parts

	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)	**LLEDCPL**

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

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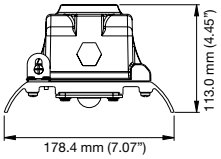
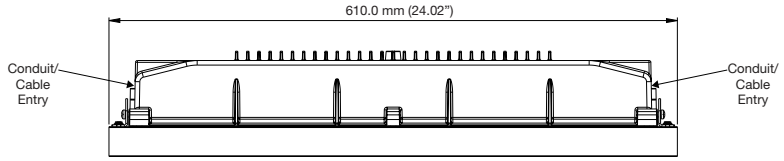
Luminaire Dimensions in Millimeters (Inches)

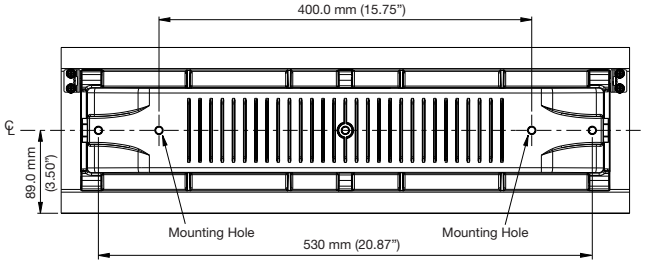
End View — LLEDA*2 and LLEDA*5



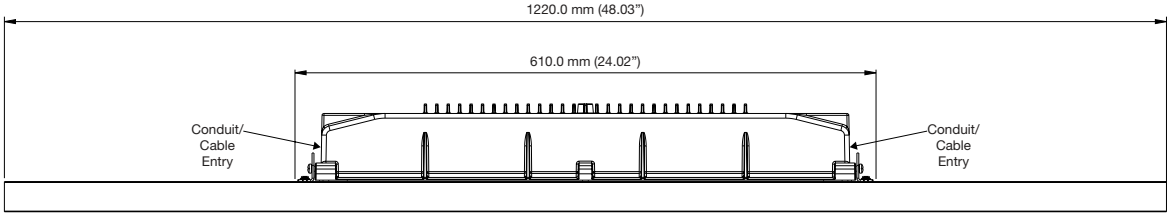
Side View — LLEDA*2 and LLEDA*5



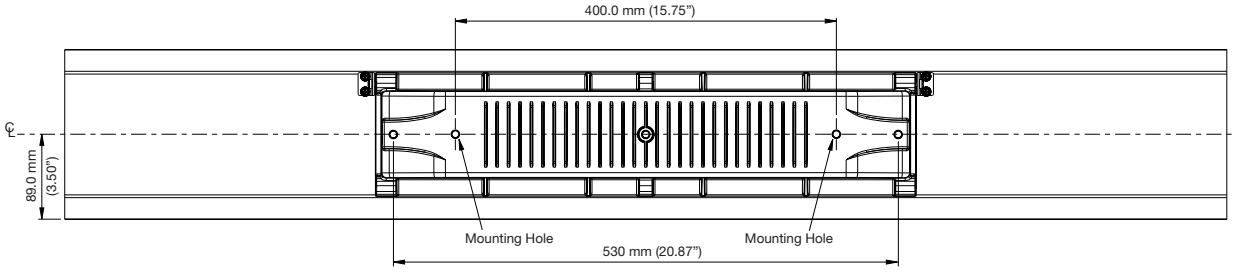
Top (Mounting) View — LLEDA*2 and LLEDA*5



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)

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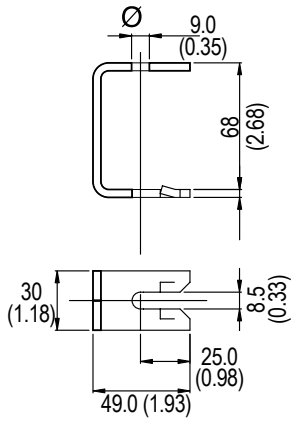
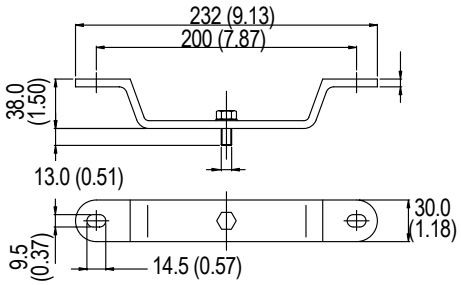
Mounting Bracket Dimensions in Millimeters (Inches)

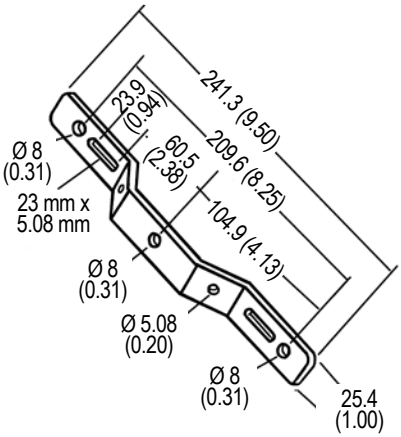
FEFBS



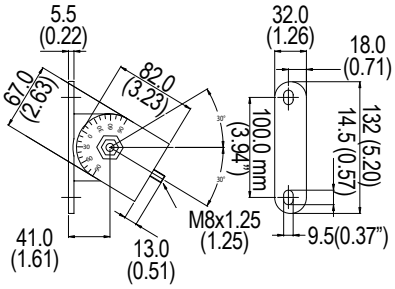
FESBA/FESBS



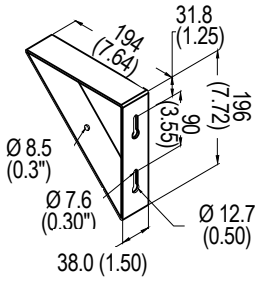
FVSM



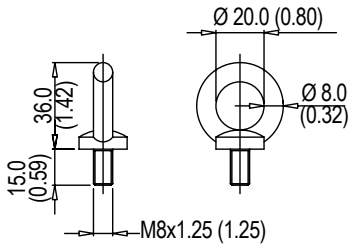
FEHBA



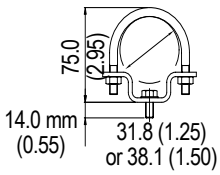
FVWFM



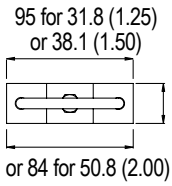
FERBM8Z



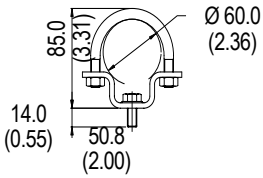
FEHC49Z/FEHC49S



FEHC49Z/FEHC49S/FEHC60Z/FEHC60S



FEHC60Z/FEHC60S



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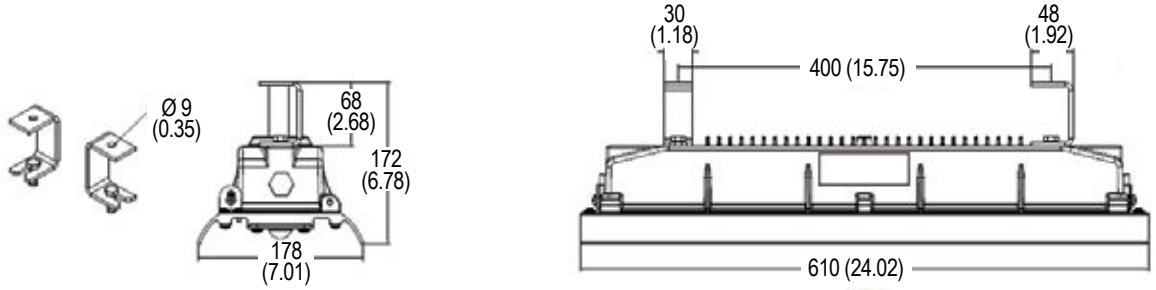
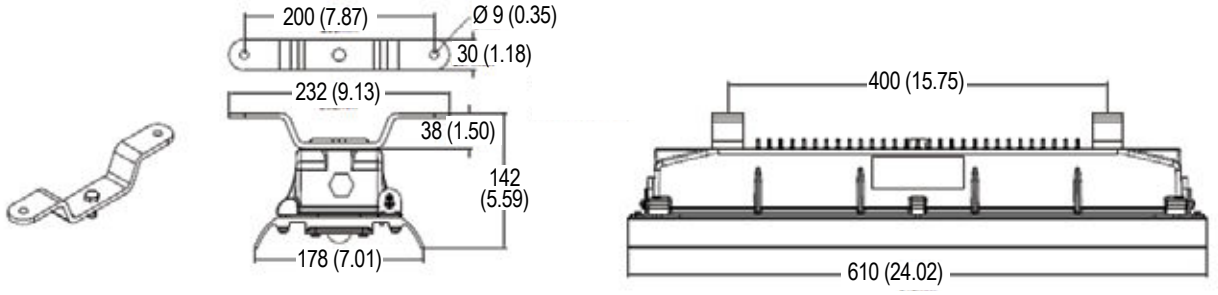
Mounting Options Dimensions in Millimeters (Inches)

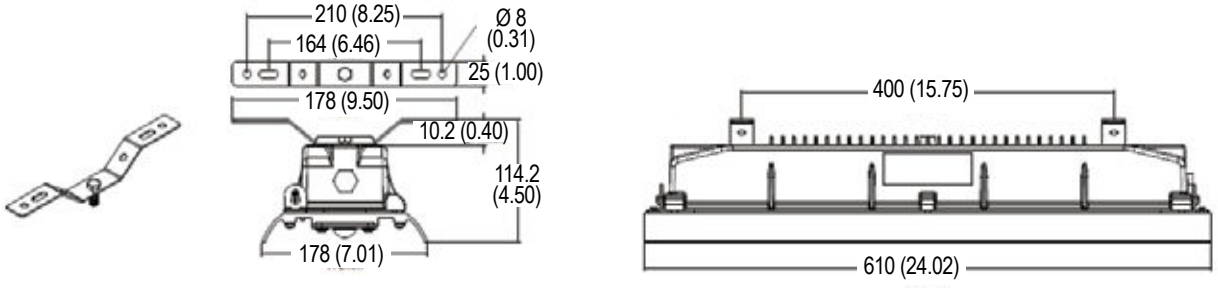
Ceiling/Surface Mount — FEFBS



Ceiling/Surface Mount — FESBA/FESBS



Ceiling/Surface Mount — FVSM



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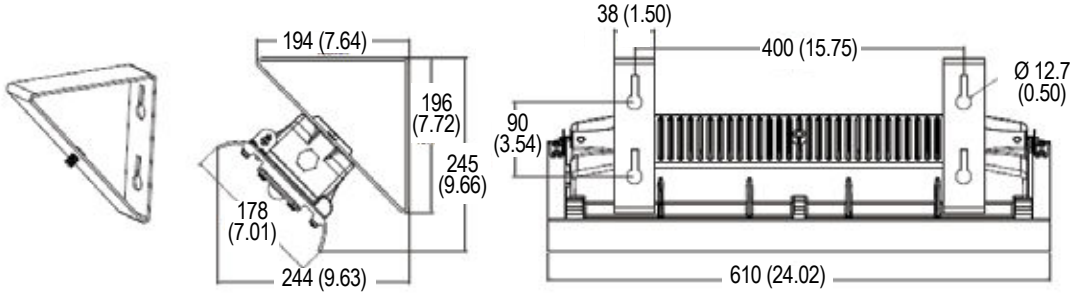
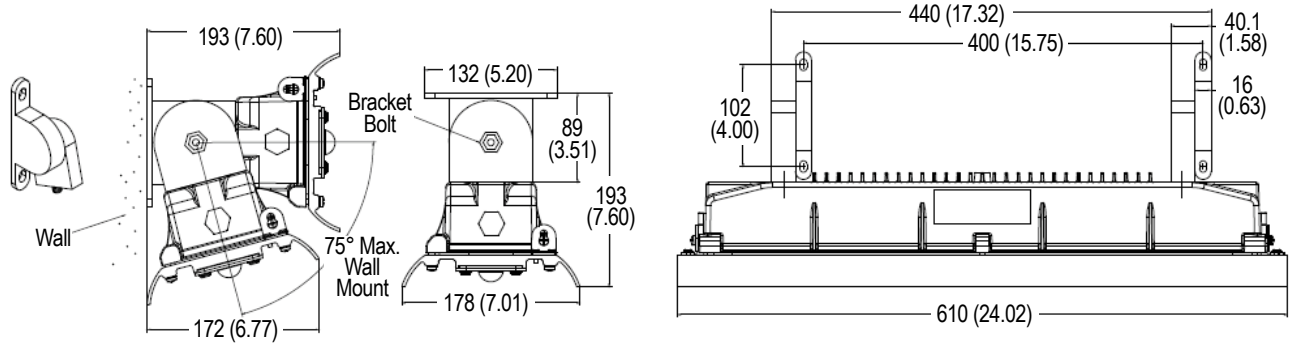
Mounting Options Dimensions in Millimeters (Inches)

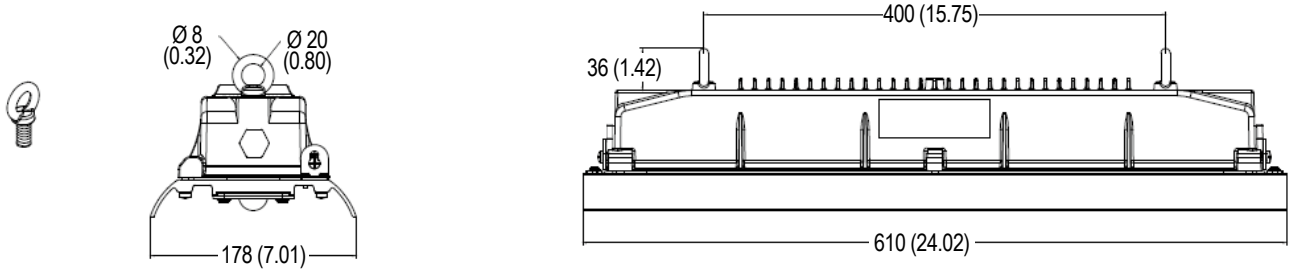
Wall/Fixed 45° Mount — FVWFM



Wall/Hinged Mount — FEHBA



Ceiling/Chain Mount — FERBM8Z



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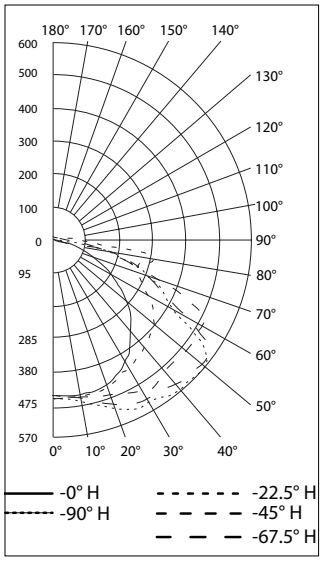
Photometric Data — DATA SHOWN IS ABSOLUTE

LLEDAA(XY)2BUZ2 with Clear Polycarbonate Lens

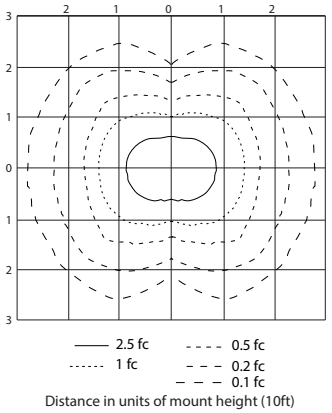
***X** = cable entry size, **Y** = style of termination*

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

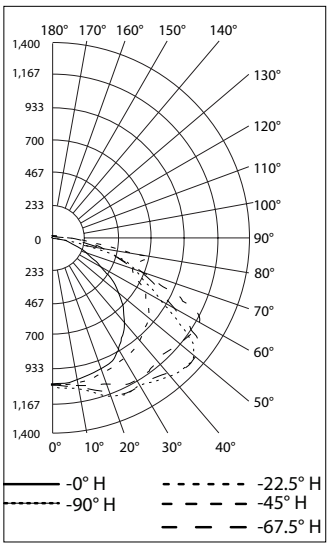
Zone	Lumens	% Luminaire
0-10	46.7	2.2
10-20	140.9	6.7
20-30	236.4	11.3
30-40	317.2	15.1
40-50	378.4	18.1
50-60	401.5	19.2
60-70	324.6	15.5
70-80	209.6	10.0
80-90	39.1	1.9
90-100	0.3	0.0

LLEDAA(XY)5BUZ2 with Clear Polycarbonate Lens

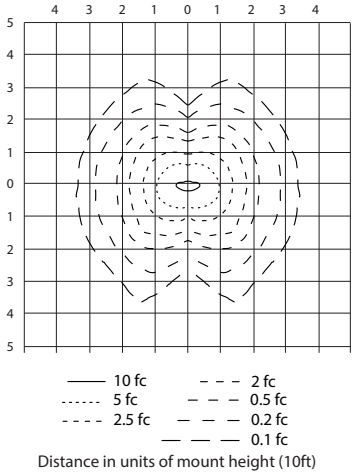
***X** = cable entry size, **Y** = style of termination*

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

ATEX/IECEx Viamaster™ LED Series Luminaires

Standard or with Emergency Battery Backup

Hazardous Locations

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

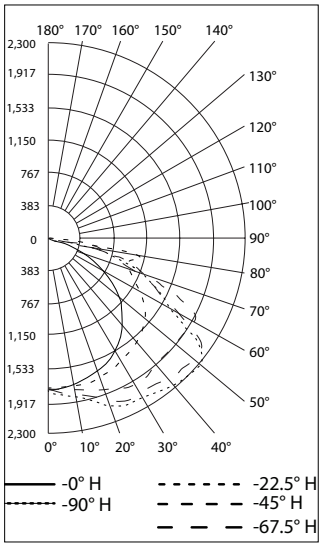
Photometric Data — DATA SHOWN IS ABSOLUTE

LLEDAA(XY)7BUZ2 with Clear Polycarbonate Lens

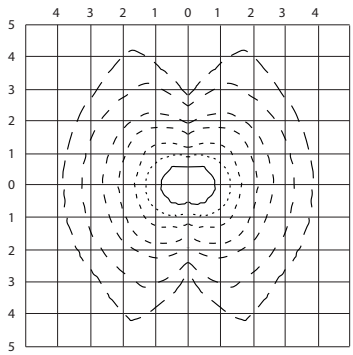
***X** = cable entry size, **Y** = style of termination*

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

POLAR CANDELA DISTRIBUTION



ISOCANDELA PLOT



Distance in units of mount height (10ft)

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

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