

SafeSite® LED Lighting for Hazardous Locations

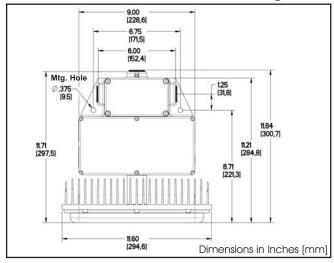
ver 4.0

Dialight

www.dialight.com



SafeSite® LED White Downlight



Certifications & Ratings:

- ightharpoonup Class I, Div 2, Groups A, B, C, D hazardous environments T4A rated
- ▷ Class II, Div 2, Groups F, G hazardous environments T3B rated
- > 3 G Ex nA II T4 (incorporates wire cage)
- > 3 D Ex tD B22 IP66 T1 (incorporates wire cage)
- $\,\triangleright\,$ Certified to UL844 / NEMA 4X / UL1598 / UL1598A / CSA 22.2
- ▷ IP66 rated

Features & Benefits:

- ▷ Instant on/off response
- ightharpoonup Weather/corrosion resistant lamp assembly and housing
- □ Universal input (120-277 VAC), 50/60 Hz
- > *Resistant to shock (IEC 68-2-27) and vibration (FAA 150/5345-46C)
- $\, igtriangleq \,$ 70% lumen maintenance over 60,000 operating hours

Order Codes:

SafeSite Series 150 Watt Equivalent Fixtures			
HZC-02-150-1111-201	CID2/CIID2 Cert- 180 Degree		
HZC-02-150-1111-301	CID2/CIID2 Cert - 360 Degree		
HZC-04-150-1111-201	ATEX Cert - 180 Degree		
HZC-04-150-1111-301	ATEX Cert - 360 Degree		
*HZC-02-150-1111-202			
*HZC-02-150-1111-302	,		
**HZC-02-150-1111-211	,		
**HZC-02-150-1111-311	CID2/CIID2 Cert - 360 Degree, PC		

Dialight

Application:

Dialight introduces the new state of the art fixture for hazardous location lighting. Its rugged solid state design creates a new era where failed lamps and expensive relamping costs become a thing of the past. This light incorporates both cutting edge LED technology along with proprietary optics to achieve area lighting comparable with other traditional light sources. By focusing the light where it is needed, the SafeSite Series is the most efficient light source available for hazardous area lighting applications. Whether your application is in a refinery, oil platform, chemical plant or any other Class I, Division 2 / Class II, Div 2 application, this fixture offers improved performance across the board.

Mechanical Information:

Container Dimensions: 15" X 16" X 10"

381mm x 407mm x 254mm

Container Weight: 19 lbs (8.2 kg)

Mounting: Threaded 1" NPT on 3 sides of splice box

Electrical specifications:

Operating Voltage: 120-277 VAC, 50/60 Hz

(DC versions available - consult factory)

Power Consumption: 100 W

Operating Temp: $-40^{\circ}F$ to $+133^{\circ}F$ ($-40^{\circ}C$ to $+55^{\circ}C$)

Harmonics: IEC 6100-3-2 class C

Surge / Lightning 1 kV line to line Protection: 2 kV line to ground

THD: < 20 %

Power Factor: > 0.9

Material:

Lens: UV stabilized Polycarbonate with enhanced

abrasive resistance

Body: Grey epoxy powder coat aluminum

Heat sink: Clear anodized aluminum

Accessories (hardware): Stainless steel

Photometric Information:

CRI (typ): 70

CCT: 4500-7000K

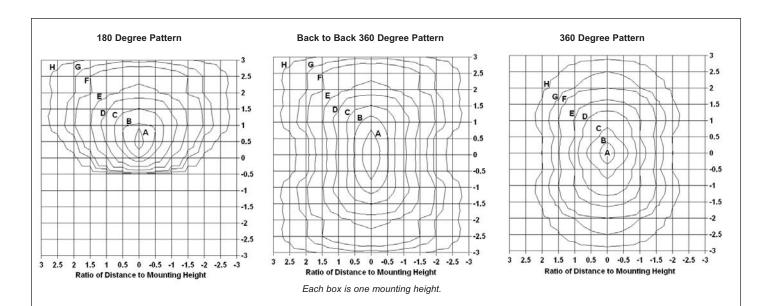
SafeSite Series 250 Watt Equivalent Fixtures			
HZC-02-250-1111-201	CID2/CIID2 Cert- 180 Degree		
HZC-02-250-1111-301	CID2/CIID2 Cert - 360 Degree		
HZC-04-250-1111-201	ATEX Cert - 180 Degree		
HZC-04-250-1111-301	ATEX Cert - 360 Degree		
*HZC-02-250-1111-202	CID2/CIID2 Cert - 180 Degree, HVS		
*HZC-02-250-1111-302	CID2/CIID2 Cert - 360 Degree, HVS		
**HZC-02-250-1111-211	,		
**HZC-02-250-1111-311	CID2/CIID2 Cert - 360 Degree, PC		

Additional Options:

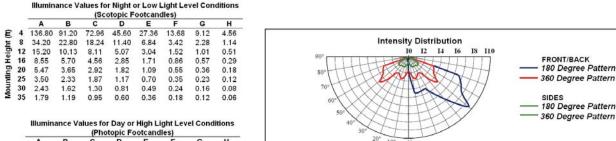
^{*} HVS order codes are High Vibration & Shock resistant with T4 rating (CID2)

^{**}PC order codes are hard coated lens and powder coat on all exposed aluminum parts

Light Measurement Data



150 Watt Equivalent Fixtures



		(Photopic Footcandles)				nuons			
		A	В	Ċ	D	E	F	G	н
Ê	4	60.00	40.00	32.00	20.00	12.00	6.00	4.00	2.00
E	8	15.00	10.00	8.00	5.00	3.00	1.50	1.00	0.50
Height	12	6.67	4.44	3.56	2.22	1.33	0.67	0.44	0.22
ž	16	3.75	2.50	2.00	1.25	0.75	0.38	0.25	0.13
ng	20	2.40	1.60	1.28	0.80	0.48	0.24	0.16	0.08
큳	25	1.54	1.02	0.82	0.51	0.31	0.15	0.10	0.05
Mounti	30	1.07	0.71	0.57	0.36	0.21	0.11	0.07	0.04
Σ	35	0.78	0.52	0.42	0.26	0.16	0.08	0.05	0.03



FRONT/BACK

Intensity Values for Day or High Light Level Conditions

(Photopic Candelas)

1800

2400

3000

1200

600

180 Degree Pattern

360 Degree Pattern

180 Degree Pattern

250 Watt Equivalent Fixtures

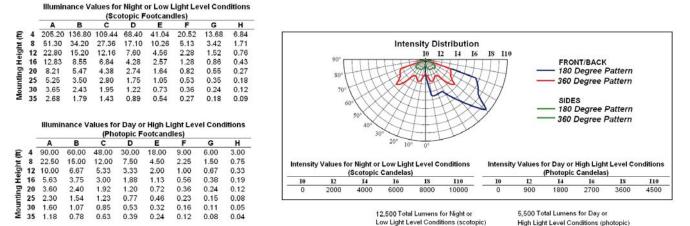
1333

(Scotopic Candelas)

4000

5333

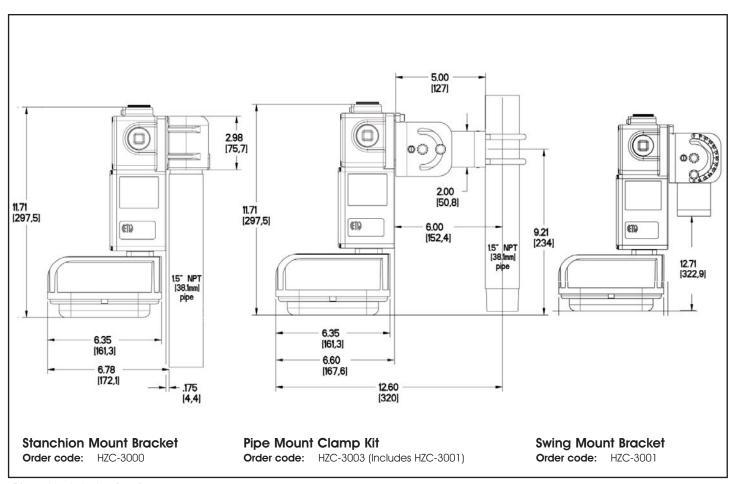
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IES Files: Available at www.dialight.com



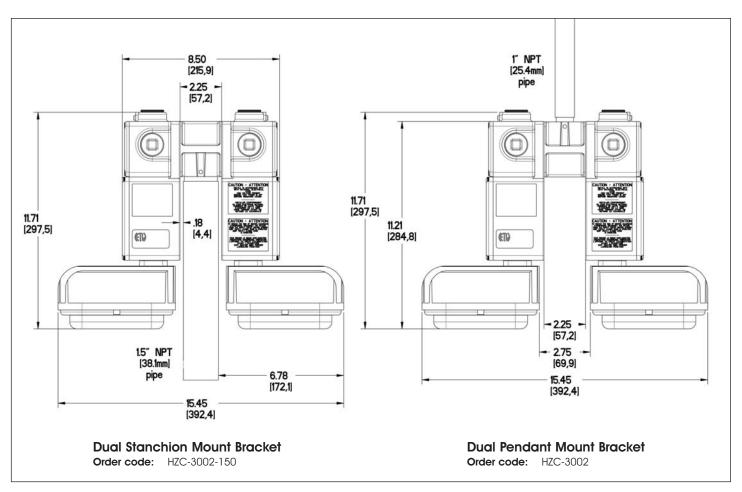
SafeSite® Downlight Fixture Mounting Brackets - Single Units



Dimensions in Inches [mm]



SafeSite® Downlight Fixture Mounting Brackets - Dual Units



Dimensions in Inches [mm]

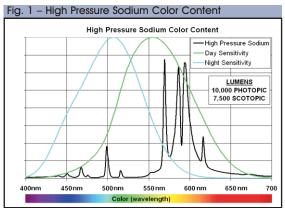
How SafeSite® creates a safer work environment with superior illumination

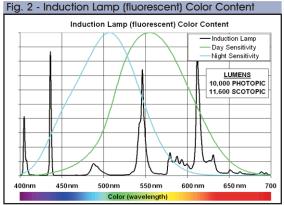
SafeSite delivers measurably superior illumination to traditional lighting solutions. That means better visual acuity, reduced eye strain and a safer work environment. By delivering pure "full spectrum" white light with no gaps in the color spectrum, SafeSite is much easier to see under for tasks that require reliable visual acuity like viewing color coded wiring, reading colored plaques or distinguishing steam from the smoke of a fire.

Objects appear colorful because they reflect some colors of light to our eyes and absorb others. For example, an object that reflects blue and absorbs all other colors appears blue to the eye, but this only occurs if the object is being illuminated by a light source that emits blue light. Our night vision (scotopic) is more sensitive than our day vision (photopic) to the blue end of the spectrum and less sensitive to the red end.

As shown in Fig.1, high pressure sodium (HPS) lamps emit light almost exclusively in the orange area of the color spectrum and almost no blue light is emitted, so under HPS a blue object will appear very dark. Our night sensitivity peaks in the blue area of the spectrum where the HPS lamp emits very little light, so this means that HPS lamps are normally very difficult to see with at night because they emit mostly orange light (around 600 nm) and our eyes are not very sensitive to this area of the spectrum under low light level conditions.

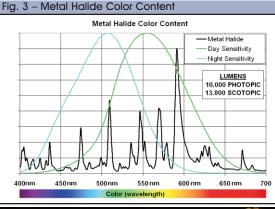
As shown by Figs 1-3, HPS, fluorescent and induction lights all have large areas missing in their color spectrum that cause colored objects to appear off color, while Fig. 4 shows that the SafeSite LED light is designed to be well centered in the night sensitivity range. In fact, under purely scotopic night vision the Safesite LED will appear 1.7 times brighter than the metal halide, 2.0 times brighter than the induction lamp and 3.0 times brighter than the HPS for the same photopic lumens.

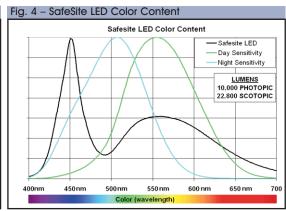




Benefits of LED Technology

Low power consumption
Reduces CO₂ emissions
Instant on/off
5 year warranty
Weather / corrosion resistant
Resistant to shock & vibration
Cold start capable
Minimized light spill





Quick fact

The energy savings per year that is generated for a typical plant retro-fitting 1,000 SafeSite 250 units in place of 250W HPS = \$164,000!





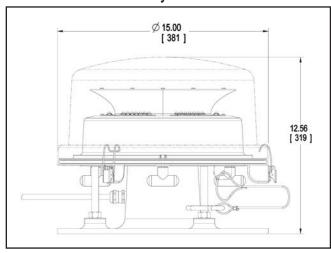
These photographs show the clear difference in light quality between LED lighting and HPS and the high quality color rendition that SafeSite delivers for a safer work environment.





Dialight's L864 LED Based Class I, Division 2 certified medium intensity red beacon was designed to easily interface into existing systems or to be provided as a red lighting fixture for new installations. The beacon is used to mark any obstacle that may provide hazards to aircraft navigation. Versions of this fixture are available in 120VAC or 230VAC.

SafeSite® L-864 Red LED Medium Intensity Beacon



Dimensions in Inches [mm]

Certifications & Ratings:

- Class I, Div 2, Groups A, B, C, D hazardous environments T5 rated
- ATEX certified, equipment group II (surface industries), category 3 (Zone 2), T4 rated
- Compliant to: ICAO (Annex 14 Fourth Edition, July 2004), DGAC Mexico
- $ight
 angle \,$ IP66 / NEMA 4X rated
- ETL Listed in compliance with UL1598 and UL844for use in Class I, Div 2 hazardous locations

Features & Benefits:

- ${\,ert}$ Resistant to shock and vibration
- ight
 angle Lasts years longer than an incandescent

Order Codes:

Class 1, Div 2 Beacon		
D164-B13-001 Class I, Div 2 120/230 VAC Beacon		
ATEX Beacon		
D264-D13-001	ATEX 120/230 VAC Beacon	

Mechanical Information:

Container Dimensions: 24" X 24" X 24"

610mm x 610mm x 610mm

Container Weight: 32lbs (12.70 kg)

Electrical specifications:

Power Consumption: 48 W

(nom)

Operating Temp: $-40^{\circ}\text{F to} + 133^{\circ}\text{F} (-40^{\circ}\text{C to} +55^{\circ}\text{C})$

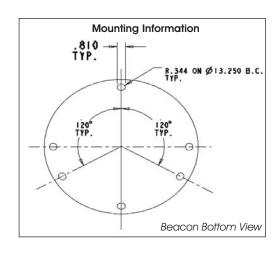
Power Factor: > 0.9

Material:

Housing: Cast aluminum

Lens: Polycarbonate

Accessories (Hardware): Stainless steel

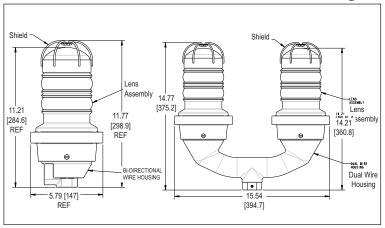






LED Based L810 Red Obstruction light certified to meet both the rigorous FAA requirements for red LED obstruction lights and Class I, Division 2 for hazardous area lighting locations. It is available in 120VAC or 230VAC versions and can be ordered as single or dual units.

SafeSite® L-810 Red LED Obstruction Lights



Dimensions in Inches [mm]

Certifications & Ratings:

- ▷ Class I, Div 2, Groups A, B, C, D hazardous environments T4 rated
- ATEX certified, equipment group II (surface industries), category 3 (Zone 2), T4 rated
- Compliant to: ICAO (Annex 14 Fourth Edition, July 2004), DGAC Mexico
- ETL Listed in compliance with UL1598 and UL844 for use in Class I, Div 2 hazardous locations
- ▷ IP65 / IP66 / NEMA 4X rated

Features & Benefits:

- ${f ar{>}}$ Weather/corrosion resistant lamp assembly and housing
- ${\,ert}$ Resistant to shock and vibration
- ${
 ightharpoonup}$ Available as a single or dual unit
- Unique optically designed lens to enhance LED operation and provide 360° visibility

Mechanical Information:

Single Units:

Container Dimensions: 16" X 9" X 8"

406mm x 229mm x 203mm

Container Weight: 7.14 lbs (3.24 kg)

Mounting: Threaded 1" NPT and 3/4" NPT

bottom hub for mounting

Dual Units:

Container Dimensions: 22" X 17" X 9"

559mm x 432mm x 229mm

Container Weight: 16.06 lbs (7.28 kg)

Mounting: Threaded 1" NPT and 3/4" NPT

bottom hub for mounting

Electrical specifications: (Per Light):

Volt Amps: 44 VA (120 VAC Units)

67 VA (230 VAC Units)

Input Power: 14.5 W (120 VAC Units)

16.0 W (230 VAC Units)

Operating Temp: $-40^{\circ}F \text{ to } +133^{\circ}F \text{ (}-40^{\circ}C \text{ to } +55^{\circ}C\text{)}$

Material:

Housing: Cast aluminum

Lens: Glass

Accessories (Hardware): Stainless steel

Order Codes:

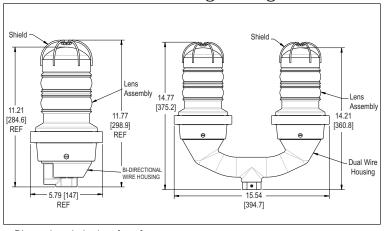
<u> </u>			
Class 1, Div 2 Units		ATEX Units	
860-2R01-001	Class I, Div 2 120 VAC, Single Unit	860-9R01-001	ATEX 120 VAC, Single Unit
860-2R02-001	Class I, Div 2 230 VAC, Single Unit	860-9R02-001	ATEX 230 VAC, Single Unit
860-2R01-002 Class I, Div 2 120 VAC, Dual Unit		860-9R01-002	ATEX 120 VAC, Dual Unit
860-2R02-002	Class I, Div 2 230 VAC, Dual Unit	860-9R02-002	ATEX 230 VAC, Dual Unit





Dialight's steady burn LED Based Class I, Division 2 Visual Signals are used in a wide range of industries for visual indication in hazardous environments. Versions of this fixture are available in 120VAC or 230VAC.

SafeSite® 860 Series LED Steady Burn Visual Signal Lights



Dimensions in Inches [mm]

Certifications & Ratings:

- ▷ Class I, Div 2, Groups A, B, C, D hazardous environments T4 rated
- ATEX certified, equipment group II (surface industries), category 3 (Zone 2), T4 rated
- ▷ IP65 / IP66 / NEMA 4X rated
- ▷ ETL Listed in compliance with UL1598 and UL844 for use in Class I, Div 2 hazardous locations

Features & Benefits:

- ightharpoonup Resistant to shock and vibration
- ${
 hd}{
 hd}$ Available as a single or dual unit
- Unique optically designed lens to enhance LED operation and provide 360° visibility

Mechanical Information:

Single Units:

Container Dimensions: 16" X 9" X 8"

406mm x 229mm x 203mm

Container Weight: 7.14 lbs (3.24 kg)

Mounting: Threaded 1" NPT and 3/4" NPT

bottom hub for mounting

Dual Units:

Container Dimensions: 22" X 17" X 9"

559mm x 432mm x 229mm

Container Weight: 16.06 lbs (7.28 kg)

Mounting: Threaded 1" NPT and 3/4" NPT

bottom hub for mounting

Electrical specifications: (Per Light):

Volt Amps: 44 VA (120 VAC Units)

67 VA (230 VAC Units)

Input Power: 14.5 W (120 VAC Units)

16.0 W (230 VAC Units)

Operating Temp: $-40^{\circ}F$ to $+133^{\circ}F$ ($-40^{\circ}C$ to $+55^{\circ}C$)

Material:

Housing: Cast aluminum

Lens: Glass

Accessories (Hardware): Stainless steel

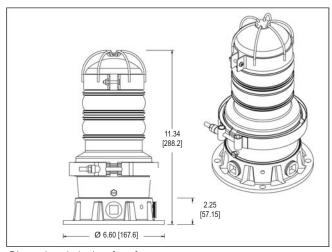
Order Codes:

Class I, Div 2 - Single Units		Class I, Div 2 - Dual Units		
860-2R01-001	Class I, Div 2 Red 120 VAC	860-2R01-002	Class I, Div 2 Red 120 VAC	
860-2W01-001	Class I, Div 2 White 120 VAC	860-2W01-002	Class I, Div 2 White 120 VAC	
860-2G01-001	Class I, Div 2 Green 120 VAC	860-2G01-002	Class I, Div 2 Green 120 VAC	
860-2Y01-001	Class I, Div 2 Yellow 120 VAC	860-2Y01-002	Class I, Div 2 Yellow 120 VAC	
860-2B01-001	Class I, Div 2 Blue 120 VAC	860-2B01-002	Class I, Div 2 Blue 120 VAC	
860-2R02-001	Class I, Div 2 Red 230 VAC	860-2R02-002	Class I, Div 2 Red 230 VAC	
860-2W02-001	Class I, Div 2 White 230 VAC	860-2W02-002	Class I, Div 2 White 230 VAC	
860-2G02-001	Class I, Div 2 Green 230 VAC	860-2G02-002	Class I, Div 2 Green 230 VAC	
860-2Y02-001	Class I, Div 2 Yellow 230 VAC	860-2Y02-002	Class I, Div 2 Yellow 230 VAC	
860-2B02-001	Class I, Div 2 Blue 230 VAC	860-2B02-002	Class I, Div 2 Blue 230 VAC	

ATEX versions available - consult factory



SafeSite® 860 Series LED Visual Signal Lights w/ Flat Base Junction Box



Dimensions in Inches [mm]

Dialight

Application:

Dialight's flat base junction box allows versatility of mounting and installation. It's flat bottom base design creates the ability to mount the visual signal against level surfaces such as walls, ceilings and platforms.

Mechanical Information:

Container Dimensions: 16" X 9" X 8"

406mm x 229mm x 203mm

Container Weight: 7.14 lbs (3.24 kg)

Mounting: Threaded 1" NPT on 4 sides and 1

on bottom

Electrical specifications:

 Volt Amps:
 44 VA (120 VAC Units)

 Input Power:
 14.5 W (120 VAC Units)

Operating Temp: $-40^{\circ}F$ to $+133^{\circ}F$ ($-40^{\circ}C$ to $+55^{\circ}C$)

Material:

Housing: Cast aluminum

Lens: Glass

Accessories (Hardware): Stainless steel

Certifications & Ratings:

- Class I, Div 2, Groups A, B, C, D hazardous environments (pending)
- ▷ IP65 / IP66 / NEMA 4X rated
- ▷ ETL Listed in compliance with UL1598 and UL844 for use in Class I, Div 2 hazardous locations

Features & Benefits:

- ${igle}$ Uses 90% less energy than an incandescent

- Unique optically designed lens to enhance LED operation and provide 360° visibility

Order Codes:

Class I, Div 2 - Single Units		
860-2R01-005	Class I, Div 2 Red 120 VAC - Flat Base	
860-2Y01-005	Class I, Div 2 Yellow 120 VAC - Flat Base	
860-2B01-005	Class I, Div 2 Blue 120 VAC - Flat Base	



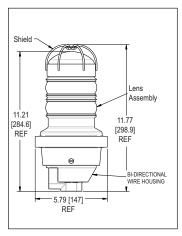


Dialight

Application:

Dialight's newest addition to their line of Class I, Division 2 Visual Signal Lights, the FLS Series Flashing Signals are used in a wide range of industries for visual indication in hazardous environments. Versions of this fixture are available in 120VAC or 230VAC.

SafeSite® FLS Series LED Flashing Visual Signal Lights



Dimensions in Inches [mm]

Certifications & Ratings:

- ${
 hd}{
 hd}$ Class I, Div 2, Groups A, B, C, D hazardous environments T4 rated
- ▷ IP66 / NEMA 4X rated
- $\,\rhd\,$ ETL Listed in compliance with UL1598 and UL844 for use in Class I, Div 2 hazardous locations

Features & Benefits:

- ${f ar{>}}$ Uses 90% less energy than an incandescent

- $\, \triangleright \,$ Available as a single unit
- Unique optically designed lens to enhance LED operation and provide 360° visibility

Order Codes:

Class I, Div 2 - Single Units		
FLS-2R01-001	Class I, Div 2 Red 120 VAC	
FLS-2W01-001	Class I, Div 2 White 120 VAC	
FLS-2G01-001	Class I, Div 2 Green 120 VAC	
FLS-2Y01-001	Class I, Div 2 Yellow 120 VAC	
FLS-2B01-001	Class I, Div 2 Blue 120 VAC	
FLS-2R02-001	Class I, Div 2 Red 230 VAC	
FLS-2W02-001	Class I, Div 2 White 230 VAC	
FLS-2G02-001	Class I, Div 2 Green 230 VAC	
FLS-2Y02-001	Class I, Div 2 Yellow 230 VAC	
FLS-2B02-001	Class I, Div 2 Blue 230 VAC	

ATEX versions available - consult factory

Mechanical Information:

Container Dimensions: 16" X 9" X 8"

406mm x 229mm x 203mm

Container Weight: 7.14 lbs (3.24 kg)

Mounting: Threaded 1" NPT and 3/4" NPT

bottom hub for mounting

Electrical specifications:

Volt Amps: 44 VA (120 VAC Units)

67 VA (230 VAC Units)

Input Power: 14.5 W (120 VAC Units)

16.0 W (230 VAC Units)

Operating Temp: $-40^{\circ}F$ to $+133^{\circ}F$ ($-40^{\circ}C$ to $+55^{\circ}C$)

Material:

Housing: Cast aluminum

Lens: Glass

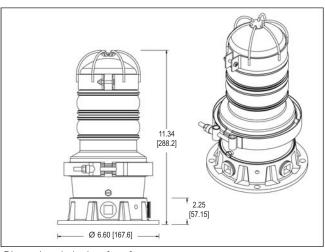
Accessories (Hardware): Stainless steel





Dialight's flat base junction box allows versatility of mounting and installation. It's flat bottom base design creates the ability to mount the flashing signal against level surfaces such as walls, ceilings and platforms.

SafeSite® FLS Series LED Flashing Signal Lights w/ Flat Base Junction Box



Dimensions in Inches [mm]

Mechanical Information:

Container Dimensions: 16" X 9" X 8"

406mm x 229mm x 203mm

Container Weight: 7.14 lbs (3.24 kg)

Mounting: Threaded 1" NPT on 4 sides and 1

on bottom

Electrical specifications:

 Volt Amps:
 44 VA (120 VAC Units)

 Input Power:
 14.5 W (120 VAC Units)

Operating Temp: $-40^{\circ}\text{F to } +133^{\circ}\text{F } (-40^{\circ}\text{C to } +55^{\circ}\text{C})$

Material:

Housing: Cast aluminum

Lens: Glass

Accessories (Hardware): Stainless steel

Certifications & Ratings:

- ▷ Class I, Div 2, Groups A, B, C, D hazardous environments (pending)
- ▷ IP65 / IP66 / NEMA 4X rated

Features & Benefits:

- ▷ ETL Listed in compliance with UL1598 and UL844 for use in Class I, Div 2 hazardous locations

- ${\,ert}$ Resistant to shock and vibration
- ${
 m iny ext{ Unique optically designed lens to enhance LED operation and provide 360° visibility}$



Class I, Div 2 - Single Units		
FLS-2R01-005	Class I, Div 2 Red 120 VAC - Flat Base	
FLS-2Y01-005 Class I, Div 2 Yellow 120 VAC - Flat Bo		
FLS-2B01-005	Class I, Div 2 Blue 120 VAC - Flat Base	



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