Dialight

SafeSite® Series LED Based Signaling
for Hazardous Locations

Dialight

About Dialight

Dialight (LSE: DIA.L) is leading the energy efficient LED lighting revolution around the world for industrial and hazardous areas as well as transportation and infrastructure applications. For 40 years it has been committed to the development of LED lighting solutions that enable organizations to vastly reduce energy use and maintenance needs, improve safety, ease disposal and reduce CO_2 emissions.

Features & Benifits

- 5 year full performance warranty
- Resistant to shock and vibration
- High impact polycarbonate lens, UV, scratch & chemical resistant lens coating
- Reduction in expensive tower climbs and maintenance costs / unplanned site visits
- Requires smaller guage wire
- Smallest Flash Head in the Industry
- Community friendly lighting system

Dialight Timeline

1999 → First ever FAA certified LED L810
2001 → First ever FAA certified LED L864
2007 → First ever FAA certified LED L864/L865
2011 → First ever FAA certified LED L856
2012 → First ever FAA certified L856/L864

Vigilant®

- LED lighting for aviation obstruction lighting

SafeSite®

- LED lighting for hazardous locations

Typical Applications

Regulated Primary Markets

- Telecom
- Broadcast
- Chimeny
- Turbines
- Wire Crossings
- Tall Structures
- Obstruction Areas
- Wind
- Marine
- Utilities

View Dialight Case Studies at:

PPL Generation : http://www.dialight.com/Assets/Brochures_And_Catalogs/Signaling/MDEXMMCMX001.pdf
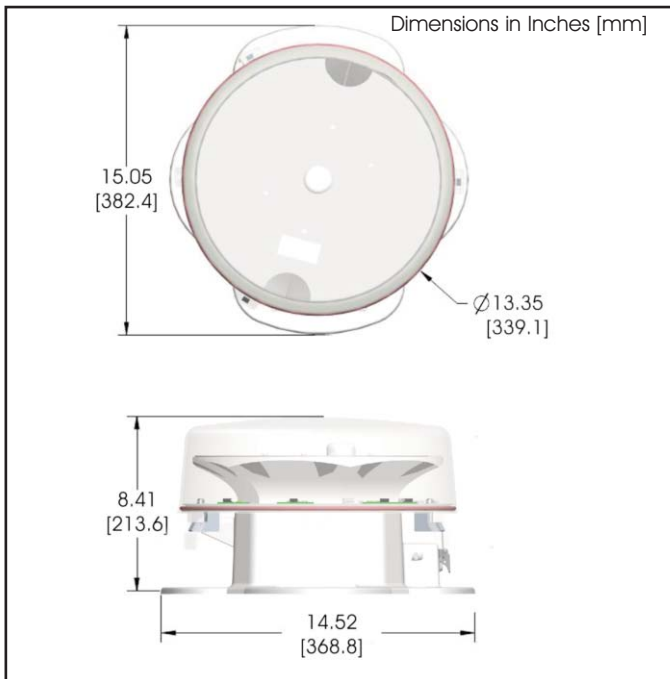**PPL Power Generation:** http://www.dialight.com/Assets/Brochures_And_Catalogs/Signaling/PPL_Case_Study.pdf
Century: http://www.dialight.com/Assets/Brochures_And_Catalogs/Signaling/MDTFCTRAX001.pdf

Dialight

US Patent # 7,281,821

SafeSite® L-864 Red LED Beacon
CID2 - VAC versions

Dimensions in Inches [mm]

15.05 [382.4]

Ø13.35 [339.1]

8.41 [213.6]

14.52 [368.8]

Certifications & Ratings:
- FAA Approved
  (Check FAA Website for current certification)
- Class I, Div 2, Groups A, B, C, D
- UL1598
- UL844
- IP 66
- NEMA 4X

Compliant to:
- DGAC Mexico
- ICAO (Annex 14 - Fourth Edition, July 2004)
- Canadian Aviation Regulation CAR 621.9 (Transport Canada)

Features & Benefits:
- 5 year full perforance warranty
- Uses 90% less energy than an incandescent
- Resistant to shock and vibration
- Lasts years longer than an incandescent
- Flash or steady burn

Application:

Dialight's L-864 LED Based Class I, Division 2 certified 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.

Mechanical Information:	
Unit Weight:	20 lbs
Operating Voltage:	Universal 120-240 VAC 50/60Hz power factor corrected supply
Supply Voltage Ranges:	Nominal +/- 10%
Effective Intensity:	Red Night 2,000 cd
Wattage:	Red Night 20W (Steady Burn) 3.3W (16.7% duty cycle) 20 flashes per minute with 0.5 second on time
Power Factor:	>0.9
Operating Temp:	-40ºF to +131ºF (-40ºC to+55ºC)
Synchronization:	Multiple unit sync from single con troller (Operates with other manu facturers of GPS sync devices)

Tempurature Rating
Ambient Tempurature Range T4 Tempurature Code
-40 to +55°C

.810 [20.57] TYP

R. 340 [8.64] TYP

Ø13.250 [336.55] BOLT CIRCLE

30 TYP
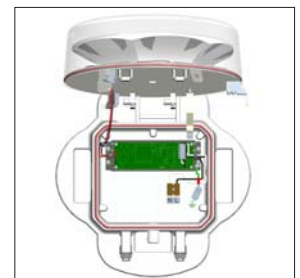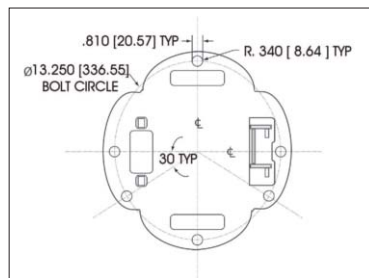
Flip top design for simple installation

Order Codes

CID2 Beacon	
D464-B13-001	CID2 120 - 240 VAC Beacon

Dialight

SafeSite® LED Based L-864/L-865 Flashing Dual (White/Red) Strobe
CID2, CIID2
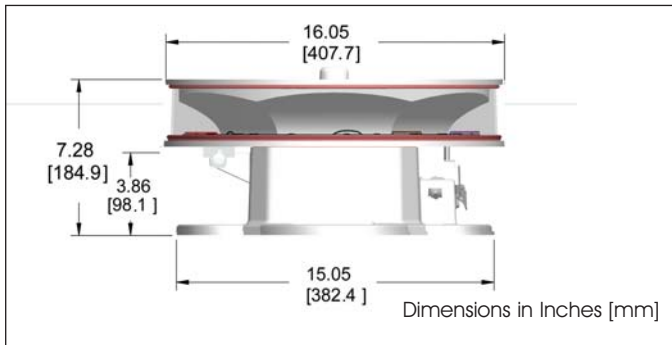
US Patents #7,208,881 #7,568,821 7,604,380 #7,777,424

16.05 [407.7]
7.28 [184.9]
3.86 [98.1]
15.05 [382.4]

Dimensions in Inches [mm]

Certifications & Ratings

- FAA Approved
  (Check FAA Website for current certification)
- Class I, Div 2, Groups A, B, C, D
- Class II, Div 2, Groups F, G
- UL1598
- UL8750
- CSA C22.2
- IP 66

Qualified By

- Intertek ETL
- CSA
- DGAC Mexico

Compliant to

- ICAO Annex 14, 5th Edition, July 2009
- ICAO Aerodromes Design Manual, Chapter 18
- Canadian Aviation Regulation CAR 621.19 (Transport Canada)

Application:

The all LED Dialight Vigilant® medium intensity white strobe and red beacon is designed for the lighting of communication towers, smoke stacks wind generators and other obstructions to aerial navigation, as specified by the FAA and FCC. The Dual L-864 / L-865 uses LED technology for light output from both the red beacon and white strobe.

Unlike conventional Xenon flashtube technology, little or no maintenance is required during its lifetime. Working voltages of less than 200VDC are significantly less than those of Xenon flashtube designs; therefore, this system represents an advance in safety. The Dialight Dual L-864 / L-865 LED beacon operates from a 48VDC supply. The power supply / control box can be located up to 550 ft away from the light engine, such as at the base of the tower.

Mechanical Information:

Unit Weight:	26 lbs
Operating Voltage:	Universal 120-240 VAC 50/60Hz power factor corrected supply (see below for options) 48V DC
Supply Voltage Ranges:	Nominal +/- 10%
Effective Intensity:	White Day 20,000 cd White Night 2,000 cd Red Night 2,000 cd
Wattage:	White Day 85W (Steady burn) White Night 35W (Steady burn) Red Night 25W (Steady burn)
Power Factor:	>0.9
Operating Temp:	-40ºF to +131ºF (-40ºC to +55ºC)
Synchronization:	Multiple unit sync from single controller (Operates with other manufacturers of GPS sync devices)

Tempurature Rating
Ambient Tempurature Range T5 Tempurature Code
-40 to +55°C

.810 [20.57] TYP
R. 340 [8.64] TYP
ø13.250 [336.55] BOLT CIRCLE
30 TYP
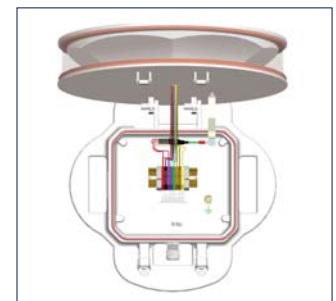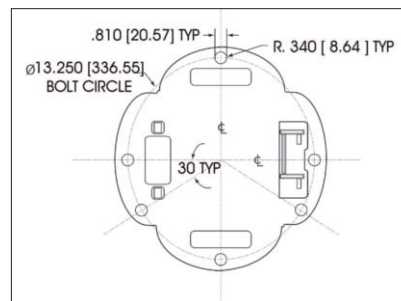
Flip top design for simple installation

Order Codes

Part Number	Color	Description	Voltage	Certification / Compliance
D1RW-B13-008	Red / White	Class I, Div 2	48V DC	FAA / Class I, Div 2
D1RW-S13-008	Red / White	Class II, Div 2	48V DC	FAA / Class 2, Div 2 (Pending)
D1RW-9004	Driver	Driver	120-240V AC/ 48V DC	

Dialight

US Patent # 6,425,678

SafeSite® L-810 Red LED Obstruction Lights
CID2, ATEX/IECEx - VAC versions
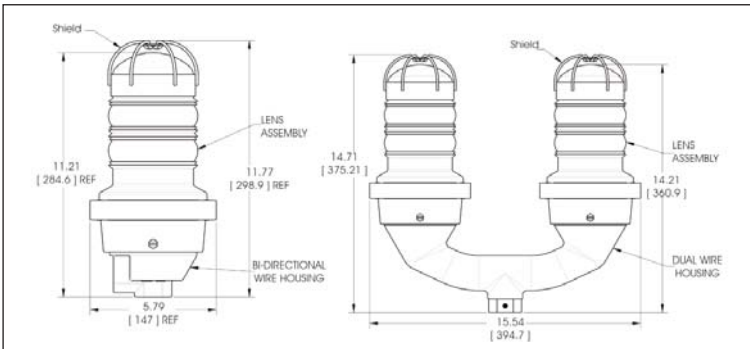
Application:
LED Based L-810 Red Obstruction light certified to meet both the rigorous FAA requirements for red LED obstruction lights for hazardous area lighting locations. It is available in 120VAC or 230VAC versions and can be ordered as single or dual units.

Certifications & Ratings:

- FAA Approved
  (Check FAA Website for current certification)
- Class I, Div 2, Groups A, B, C, D
- ATEX/IECEx Zone 2
- IECEx SIR 08.0018X
- Sira 06ATEX4372X
- UL1598
- UL844
- IP 65
- IP 66
- NEMA 4X

Compliant to:

- ICAO (Annex 14 - Fourth Edition, July 2004), DGAC Mexico
- Canadian Aviation Regulation CAR 621.9 (Transport Canada)

Features & Benefits:

- 5 year full performance warranty
- Uses 90% less energy than an incandescent
- Weather/corrosion resistant lamp assembly and housing
- Resistant to shock and vibration
- Available as single or dual unit
- Flash models available
- Withstand wind in excess of 150 mph (240 kph), salt fog

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) -+10%
	67 VA (230 VAC Units) -+15%
Input Power:	14.5 W (120 VAC Units)
	16.0 W (230 VAC Units)
Operating Temp:	-67°F to +131°F (-55°C to +55°C)

Material:

Housing:	Cast aluminum
Lens:	Glass
Accessories (Hardware):	Stainless steel

Tempurature Rating	
CID2 Ver	ATEX/IEXCEx Ver
Ambient Tempurature Range T4 Tempurature Code	Ambient Tempurature Range T4 Tempurature Code
-55 to +55°C	-55 to +55°C

Order Codes

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

*Steady Burn

Dialight

US Patent # 6,425,678

SafeSite® L-810 LED Steady Burn Colored Visual Signal Lights
CID2, ATEX/IECEx - VAC versions
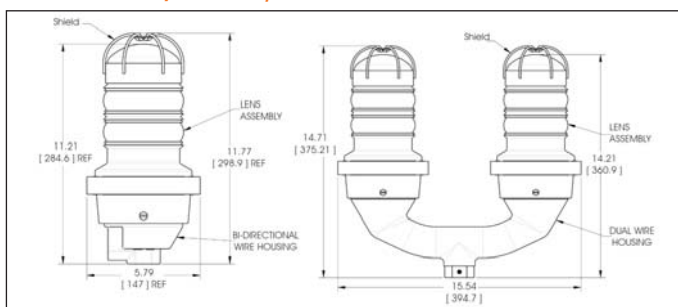
Certifications & Ratings:
- FAA AC No. 150/5345-43G
- Class I, Div 2, Groups A, B, C, D
- ATEX/IECEx Zone 2
- IECEx SIR 08.0018X
- Sira 06ATEX4372X
- UL1598
- UL844
- IP 65 /
- IP 66
- NEMA 4X

Compliant to:
- ICAO (Annex 14 - Fourth Edition, July 2004)
- Canadian Aviation Regulation CAR 621.9 (Transport Canada)
- DGAC Mexico

Features & Benefits:
- 5 year full performace warranty
- Uses 90% less energy than an incandescent
- Weather/corrosion resistant lamp assembly and housing
- Resistant to shock and vibration
- Available as a single or dual unit
- Unique optically designed lens to enhance LED operation and provide 360º visibility

Application:
Dialight's steady burn Colored L-810 LED Based 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.

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) -+10% 67 VA (230 VAC Units) -+15%
Input Power:	14.5 W (120 VAC Units) 16.0 W (230 VAC Units)
Operating Temp:	-67ºF to +131ºF (-55ºC to +55ºC)

Material:

Housing:	Cast aluminum
Lens:	Glass
Accessories (Hardware):	Stainless steel

Tempurature Rating	
Ambient Tempurature Range T4 Tempurature Code	Ambient Tempurature Range T3C Tempurature Code
-55 to +55°C	-55 to +65°C

Order Codes

Class I, Div 2				ATEX/IECEx	
Single Unit		**Dual Unit**		**Single Unit**	
860-2B01-001	Blue 120 VAC	860-2B01-002	Blue 120 VAC, Dual Unit	8609B02001	Blue 230 VAC
860-2G01-001	Green 120 VAC	860-2G01-002	Green 120 VAC, Dual Unit	8609G02001	Green 230 VAC
860-2Y01-001	Yellow 120 VAC	860-2Y01-002	Yellow 120 VAC, Dual Unit	8609Y02001	Yellow 230 VAC
860-2W01-001	White 120 VAC	860-2W01-002	White 120 VAC, Dual Unit	8609W02001	White 230 VAC
860-2B02-001	Blue 230 VAC	860-2B02-002	Blue 230 VAC, Dual Unit		
860-2G02-001	Green 230 VAC	860-2G02-002	Green 230 VAC, Dual Unit		
860-2Y02-001	Yellow 230 VAC	860-2Y02-002	Yellow 230 VAC , Dual Unit		
860-2W02-001	White 230 VAC	860-2W02-002	White 230 VAC, Dual Unit		

Dialight

US Patent # 6,425,678

SafeSite® FLS LED Flashing Visual Signal Lights
CID2 - VAC versions

Dimensions in Inches [mm]

Shield

LENS ASSEMBLY

11.21 [284.6] REF

11.77 [298.9] REF

BI-DIRECTIONAL WIRE HOUSING

5.79 [147] REF

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.

Mechanical Information:

Container Dimensions:	16" X 9" X 8" 406mm x 229mm x 203mm
Container Weight:	7.14 lbs (3.24 kg)
Mounting:	treaded 1" NPT and 3/4" NPT bottom hub for mounting

Electrical specifications:

Volt Amps:	44 VA (120 VAC Units) -+10% 67 VA (230 VAC Units) -+15%
Input Power:	14.5 W (120 VAC Units) 16.0 W (230 VAC Units)
Operating Temp:	-67ºF to +131ºF (-55ºC to +55ºC)

Material:

Housing:	Cast aluminum
Lens:	Glass
Accessories (Hardware):	Stainless steel

Tempurature Rating	
Ambient Tempurature Range T4 Tempurature Code	Ambient Tempurature Range T3C Tempurature Code
-55 to +55°C	-55 to +65°C

Certifications & Ratings

- Class I, Div 2, Groups A, B, C, D
- UL1598
- UL844
- IP 66
- NEMA 4X

Features & Benefits

- 5 year full performance warranty
- Uses 90% less energy than an incandescent
- Weather/corrosion resistant lamp assembly and housing
- Resistant to shock and vibration
- Available as a single unit
- Unique optically designed lens to enhance LED operation and provide 360º visibility

Order Codes

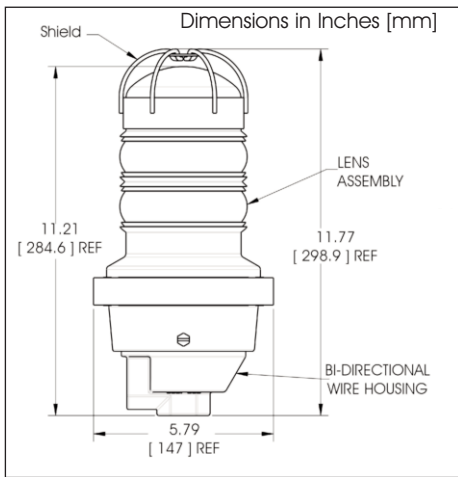| Class I, Div 2 - Single Units			
120 VAC Models		230 VAC Models	
FLS-2B01-001	Class I, Div 2 Blue 120 VAC	FLS-2B02-001	Class I, Div 2 Blue 230 VAC
FLS-2G01-001	Class I, Div 2 Green 120 VAC	FLS-2G02-001	Class I, Div 2 Green 230 VAC
FLS-2R01-001	Class I, Div 2 Red 120 VAC	FLS-2R02-001	Class I, Div 2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

US Patent # 6,425,678

SafeSite® FLS LED Flashing Visual Signal Lights
CID2 - DC Versions

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. The FLS series incorporates a 4 wire connection for incorporation into a DC supervised alarm systems.

Dimensions in Inches [mm]

Shield

LENS ASSEMBLY

11.21 [284.6] REF

11.77 [298.9] REF

BI-DIRECTIONAL WIRE HOUSING

5.79 [147] REF

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
Electrical specifications:	
Operating Voltage:	12-48 VDC (nom) -+ 10%
Input Power:	1.5 W
Operating Temp:	-40°C to +65°C
On/Off Time:	100:900ms
Material:	
Housing:	Powder coated cast aluminum
Lens:	Glass
Hardware:	Stainless steel
Included Accessories:	Threaded 3/4" NPT reducer Threaded 1" NPT plug Stainless steel cage

Certifications & Ratings:

• Class I, Div 2, Groups A, B, C, D
• UL844
• UL1598A
• UL1598
• IP 66
• NEMA 4X

Features & Benefits:

• 5 year full performance warranty
• Uses 90% less energy than an incandescent
• Weather/corrosion resistant lamp assembly and housing
• Resistant to shock and vibration
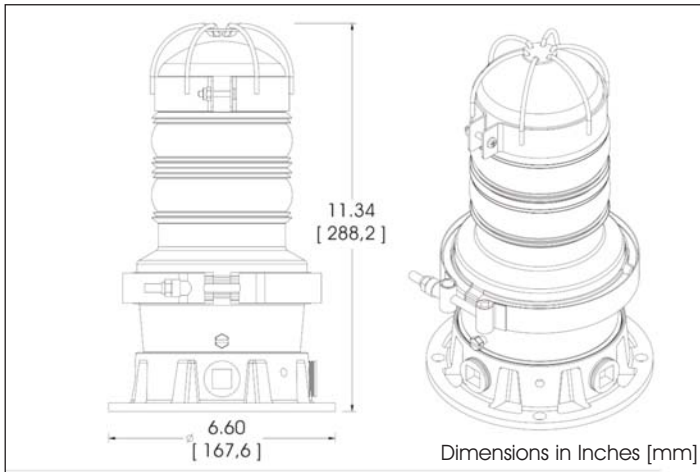• Unique optically designed lens to enhance LED operation and provide 360° visibility

Tempurature Rating	
Ambient Tempurature Range T4 Tempurature Code	Ambient Tempurature Range T3C Tempurature Code
-55 to +55°C	-55 to +65°C

Order Codes

Class I, Div 2 - Single Units	
FLS-2B09-001	Blue
FLS-2G09-001	Green
FLS-2Y09-001	Yellow
FLS-2R09-001	Red
FLS-2W09-001	White

SafeSite® FLS LED Flashing Signal Lights w/ Flat Base Junction Box
CID2 - VAC Versions

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 flashing signal against level surfaces such as walls, ceilings and platforms.

Dimensions:

11.34 [288,2]

6.60 [167,6]

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:	-67°F to +131°F (-55°C to +55°C)

Material:

Housing:	Cast aluminum
Lens:	Glass
Accessories (Hardware):	Stainless steel

Certifications & Ratings:

- Class I, Div 2, Groups A, B, C, D
- UL1598
- UL844
- IP65
- IP66
- NEMA 4X

Tempurature Rating	
Ambient Tempurature Range T4 Tempurature Code	Ambient Tempurature Range T3C Tempurature Code
-55 to +55°C	-55 to +65°C

Features & Benefits:

- 5 year full performance warranty
- Uses 90% less energy than an incandescent
- Weather/corrosion resistant lamp assembly and housing
- Resistant to shock and vibration
- Unique optically designed lens to enhance LED operation and provide 360° visibility

Order Codes

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

SafeSite® L-810 LED Visual Signal Lights w/ Flat Base Junction Box
CID2 - VAC versions

Dimensions in Inches [mm]

11.34 [288,2]

6.60 [167,6]

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.

Certifications & Ratings:
- Class I, Div 2, Groups A, B, C, D
- UL1598
- UL844
- IP 65
- IP 66
- NEMA 4X

Features & Benefits:
- 5 year full performance warranty
- Uses 90% less energy than an incandescent
- Weather/corrosion resistant lamp assembly and housing
- Resistant to shock and vibration
- Unique optically designed lens to enhance LED operation and provide 360° visibility

| 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:	
Operating Voltage:	120V AC -+10% Tolerance
Volt Amps:	44 VA (120 VAC Units)
Input Power:	14.5 W (120 VAC Units)
Operating Temp:	-67°F to +131°F (-55°C to +55°C)
Material:	
Housing:	Cast aluminum
Lens:	Glass
Accessories (Hardware):	Stainless steel

Tempurature Rating	
Ambient Tempurature Range T4 Tempurature Code	Ambient Tempurature Range T3C Tempurature Code
-55 to +55°C	-55 to +65°C

Order Codes

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

Vigilant® FAA Obstruction Lights
for General Aviation Obstruction Applications
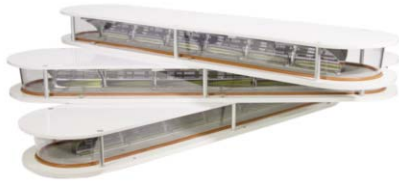
Vigilant® LED Based L-856 / L-864 High Intensity (White/Red) Strobe

The Dialight Vigilant® High Intensity Red/White Strobe is the first all LED L-856 / L-864 unit designed for the lighting of communication towers, smoke stacks, broadcast towers and other tall obstructions to aerial navigation, as specified by the FAA. A high intensity system consists of 3 flash heads, 3 power supplies per level and 1 controller for the entire system. The flash heads will be placed on up to six levels of the structure for a maximum of 18 synchronized flash heads for a single tower. The 3 flash heads will provide 360 degrees of coverage.

Vigilant® LED Based L-864 / L-856 Medium Intensity (White/Red) Strobe

The Dialight Vigilant L-864 / L-865 LED Based Dual Red/White Beacon is designed for the lighting of communication towers, smoke stacks, wind generators and other obstructions to aerial navigation, as specified by the FAA and FCC.

Vigilant® L-864 LED Based Red Medium Intensity Beacon

The Dialight Vigilant Series L-864 LED based medium intensity red beacon utilizes state-of-the-art optical design to achieve the most compact, efficient, FAA compliant L-864 device in the market.

Vigilant® L-810 RTO Red LED Obstruction Lights

Utilizing a unique optical, electrical and mechanical design, Dialight's Vigilant Series L-810 RTO Red LED Obstruction Light is the most universal, compact and efficient obstruction light in the world. Specified by the FAA.

Vigilant® L-810 Red LED Obstruction Lights

Designed for steady burning, Dialight's Vigilant Series L-810 Red LED Obstruction Light is used to mark any obstacle that may present a hazard to aircraft navigation. Specified by the FAA.

SafeSite® Series LED Based Signaling
for Hazardous Locations