Dialight

Obstruction LED Solutions

High, Medium & Low Intensity Systems

FEBRUARY 2021

ETL VERIFIED

DIALIGHT IS THE INNOVATION AND MARKET LEADER IN
LED OBSTRUCTION SOLUTIONS
FOR MORE THAN 20 YEARS

SAFE

Dialight LED systems have Infrared (IR) LEDS for visibility by pilots utilizing Night Vision Goggles (NVGs) or Night Vision Imaging Systems (NVIS).

DIFFERENTIATED

Dialight offers the industry's most comprehensive, energy-efficient and reliable line of LED-based obstruction solution systems in the world. Our precision patented optics ensure maximum safety with minimal ground scatter for community-friendly illumination.

CONVENIENT

Dialight systems offer a small, light-weight flash head for ease of installation, while our low-maintenance fixtures virtually eliminate tower climbs and unplanned site visits for years, dramatically reducing maintenance costs and non-compliance risk.

INTELLIGENT

Dialight controlled LED Obstruction solutions can be seamlessly integrated into existing operation and control centers while providing additional valuable information, both locally and remotely.

TRUSTED

Every Dialight LED Obstruction system is fully certified and compliant with FAA, TC, ICAO, and international standards, for dependability and performance you can trust.
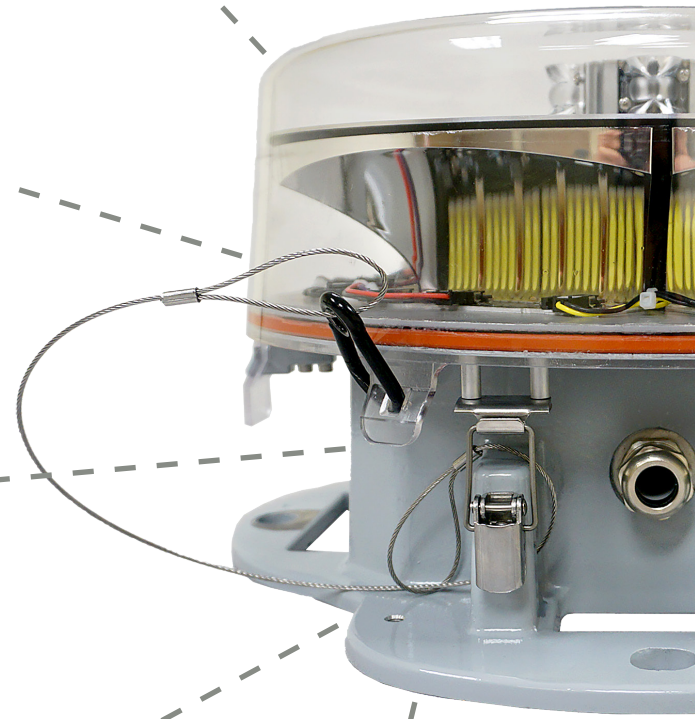
FEATURES & BENEFITS

- Compliant to FAA Infrared (IR) standards AC 150/5345-43J and EB 98

- 5 year warranty

- Resistant to shock and vibration

- High impact polycarbonate lens with UV, scratch and chemical resistant coating

- Reduction in tower climbs for lower maintenance costs / unplanned site visits

- Community friendly lighting system utilizing patented optics

Dialight's LED Technology Innovations Over the Years
First ever FAA certified LED obstruction lights with IR

Vigilant® LED Based L-864/L-856 High Intensity System

| 2011 | Current |

Vigilant® LED Based L-810 Red

| 1999 | Current |

Vigilant® LED Based L-864 Red Beacon

| 2001 | Current |

Vigilant® LED Based L-864/L-865 Flashing Dual (Red/White) System

| 2007 | Current |

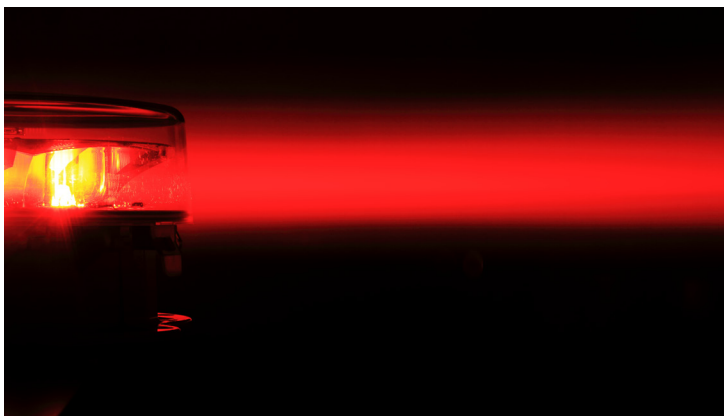| Dialight Timeline | First IR enabled LED product launched in 2011, nearly 10 years before FAA regulation |

| 1999	2001	2007	2011	2012	2013	2015	2020
• L810	• L864	• L864/ L865	• L856 • added IR to L810	• L864/ L856	• added IR to L864	• added IR to L864/L865	• FAA requires IR

Table of Contents

Patented Optics

Minimum ground scatter for a "community-friendly" lighting system

Dialight (LSE: DIA.L) is leading the energy efficient LED lighting revolution around the world for industrial and hazardous areas as well as for transportation and infrastructure applications. For 40 years we have 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.

Vigilant® LED High Intensity System L-864 / L-856
High Intensity (Red / White) System with Infrared (IR)
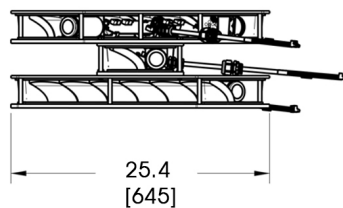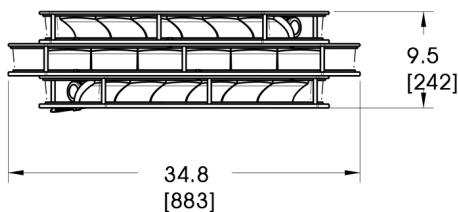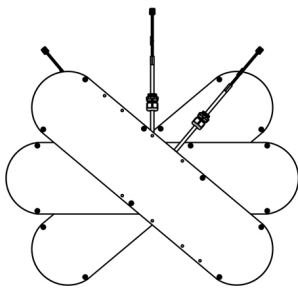
Certifications & Compliance

- FAA AC 150/5345 - 43J
- FAA EB No. 67D and 98
- IP66
- Transport Canada Standard 621
- ICAO Annex 14
- NEMA 4X

Features & Benefits

- 5 year warranty
- ETL verified to FAA standards
- IR wavelength at 850 nm
- Superior surge and lightning protection
- Controller can be mounted at the base of the structure
- IP66/NEMA 4X outdoor rated enclosures
- Low power consumption
- IP66 rated light fixtures
- Impact and vibration resistant
- Provision for padlock on the enclosure
- Patented optics for minimal down light/ground scatter
- Dry contacts for alarm monitoring/status
  - › Photocell alarm
  - › Sync alarm
  - › White mode alarm
  - › Red mode alarm
  - › Communication
  - › Operation mode (day/night)
  - › Power fail

9.5 [242]

34.8 [883]

25.4 [645]

Dimensions in inches [mm]

Technical Information:

Flash head weight:	63 lbs (30 kg)
Operating voltage:	208−277 VAC 50/60 Hz
Effective intensity:	White Day - 270,000 cd White Twilight - 20,000 cd White Night - 2,000 cd Red - 2,000 cd IR - 246 mW/sr
Wattage:	White Day - 220 W White Twilight - 40 W White Night - 30 W Red/IR - 33 W
Power factor:	> 0.9
Ambient temperature:	-40 °F to +131 °F (-40 °C to +55 °C)
Synchronization:	Multiple unit sync from single controller

All values typical unless otherwise stated (tolerance ± 10%)

US Patents: #7,281,821 | #9,423,086 | #9,581,309 (other patents pending)

Part Number	Description	Voltage	Certification/Compliance
D366-A57-270	Flash head (120°) and power supply	208−277 VAC	FAA / TC, ICAO
D366-A57-CTRAC	Base controller w/ display	208−277 VAC	FAA / TC, ICAO
D366-A57-CTRACN	Base controller w/ display and integrated INEM	208−277 VAC	FAA / TC, ICAO
D256-6000-PEC	Day/Twilight/Night photocell w/ enclosure and 3/4 inch conduit entry	−	FAA / TC, ICAO
D1CW-KIT-AOL	Aviation obstruction light (AOL) & power supply kit for FAA, Types C & F	208−277 VAC	FAA / TC, ICAO

Intertek verified FAA compliant system number D366A57SYS
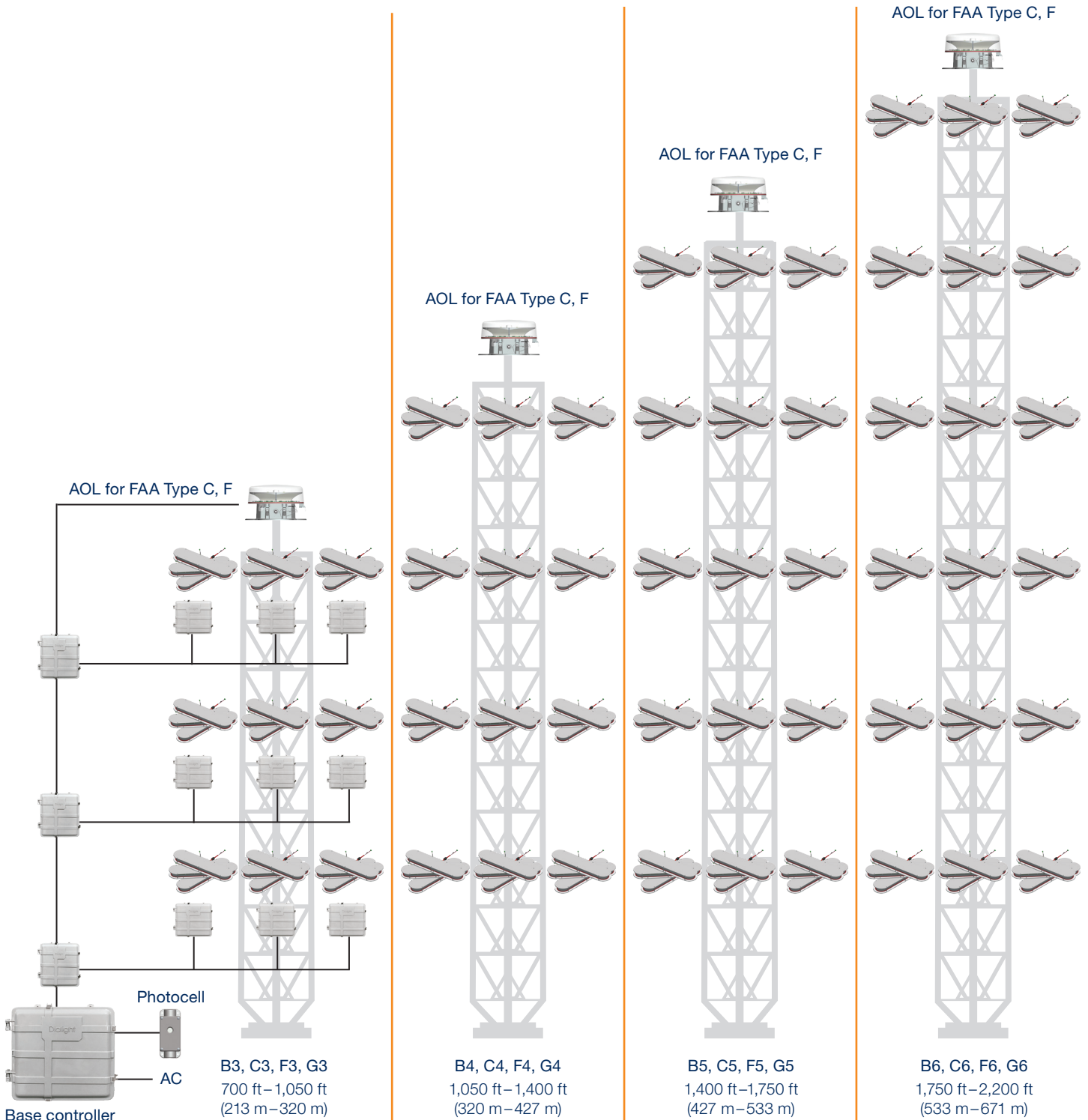Compliant to TC/ICAO

Vigilant® LED High Intensity System L-864 / L-856
High Intensity (Red / White) System with Infrared (IR)
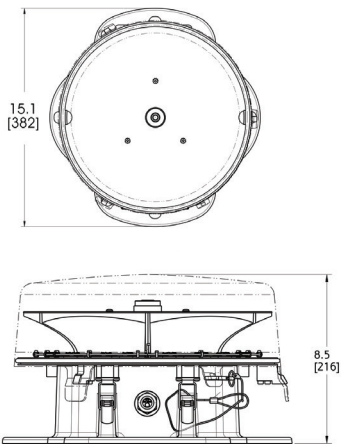### FAA Type B, C, F & G

Application

The Dialight Vigilant® High Intensity System is the first all LED L-864 / L-856 unit designed for the lighting of communication towers, chimneys, smoke stacks, broadcast towers and other tall obstructions to aerial navigation, as specified by the FAA and ICAO.

AOL for FAA Type C, F

AOL for FAA Type C, F

AOL for FAA Type C, F

AOL for FAA Type C, F

Photocell

AC

Base controller

B3, C3, F3, G3
700 ft−1,050 ft
(213 m−320 m)

B4, C4, F4, G4
1,050 ft−1,400 ft
(320 m−427 m)

B5, C5, F5, G5
1,400 ft−1,750 ft
(427 m−533 m)

B6, C6, F6, G6
1,750 ft−2,200 ft
(533 m−671 m)

Vigilant® LED Medium Intensity System L-864 / L-865

Medium Intensity (Red / White) System with Infrared (IR)

15.1 [382]

8.5 [216]

Dimensions in inches [mm]

.81 TYP [20.6]
R.34 TYP [8.6]
13.25 [336.6] BOLT CIRCLE
30° TYP
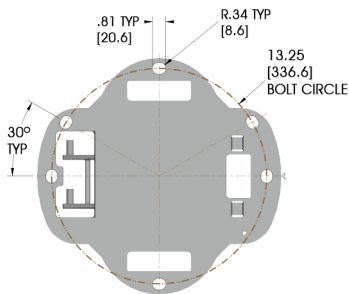
Flip top design for simple installation
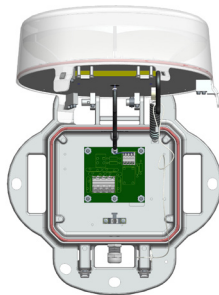
Certifications & Compliance

- FAA AC 150/5345 - 43J
- FAA EB No. 67D and 98
- IP66
- Transport Canada Standard 621
- ICAO Annex 14
- NEMA 4X

Features & Benefits

- 5 year warranty
- ETL verified to FAA standards
- IR wavelength at 850 nm
- Superior surge and lightning protection
- Patented optics for minimal down light / ground scatter
- Remote monitoring options available
- Integrated controller with LCD backlit display
- Universal 120–277 VAC input or 48 VDC input
- IP66/NEMA 4X outdoor rated enclosure
- Provisions for padlock on the enclosure

Cable

- Recommended UV rated 4 conductor cable with metal foil and braid. 14 AWG (2.08 mm^2) for lengths up to 680' (207 m) or 12 AWG (3.31 mm^2)for lengths above 680' (207 m).

- Complete kits available: D1, E1, E1+1, E2, D2, E2+1 and D2+1

Technical Information:

Flash head weight:	21 lbs (9.5 kg)
Operating voltage:	120-277 VAC 50/60 Hz or 48 VDC power factor corrected supply
Supply voltage ranges:	Nominal ± 10%
Effective intensity:	White Day - 20,000 cd
White Night- 2,000 cd
Red Night - 2,000 cd
IR - 246 mW/sr
Flash head power:	White Day - 36 W (system = 75 w)
White Night - 4 W (system = 10 w)
Red/IR Night - 15 W (system = 28 w)
Power factor:	> 0.9
Operating temperature:	-40 °F to +131 °F (-40 °C to +55 °C)
Synchronization:	Multiple unit sync from single controller

All values typical unless otherwise stated (tolerance ± 10%)

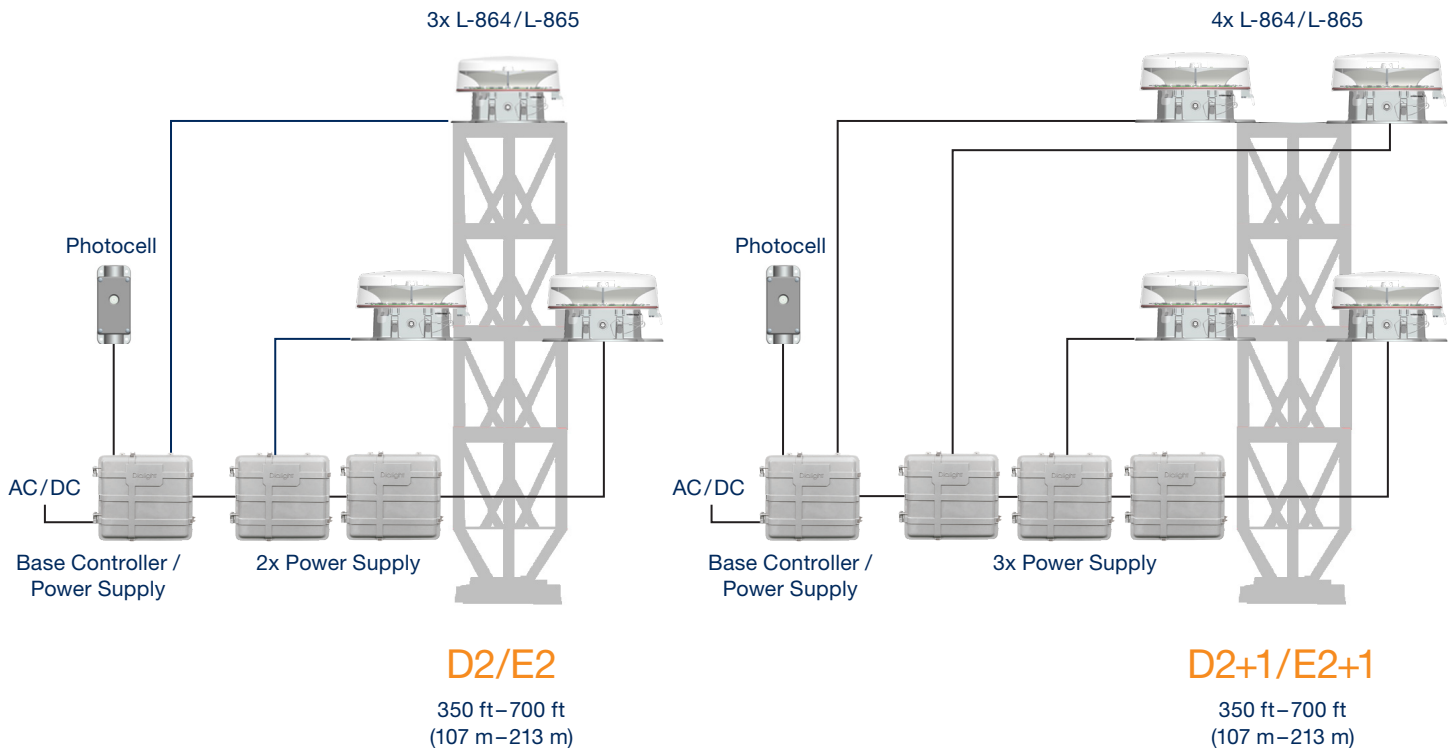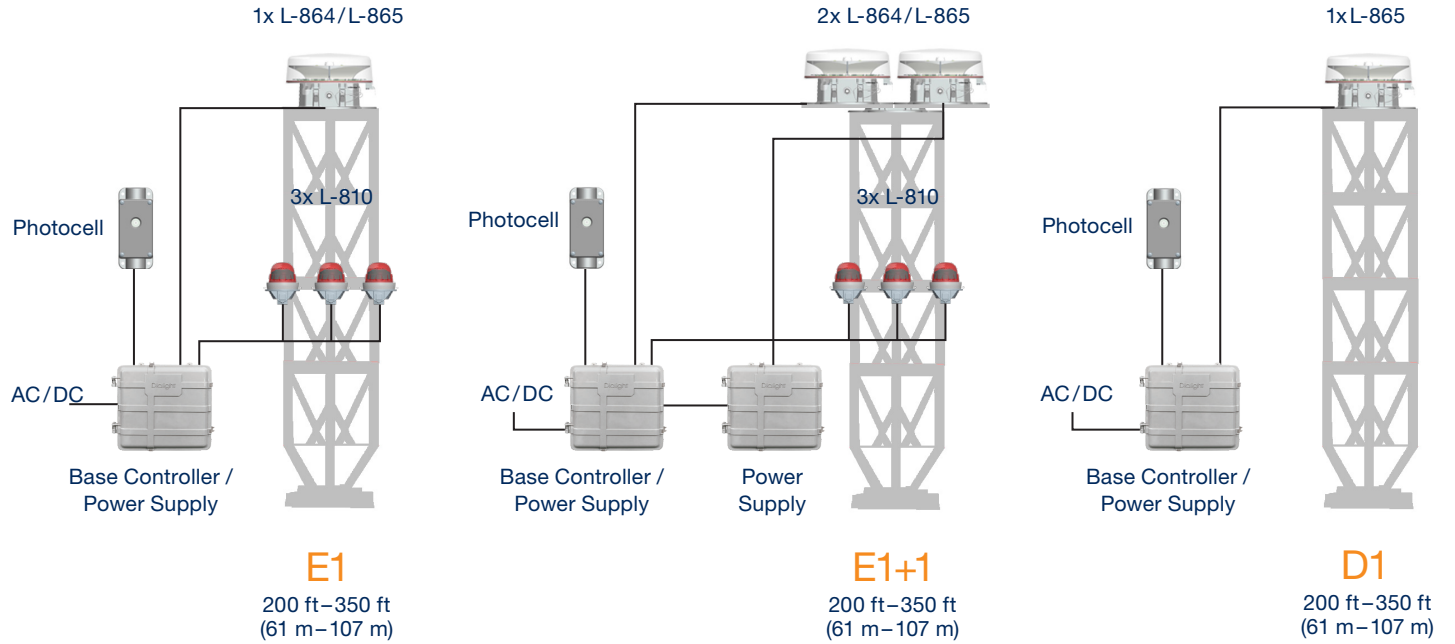US Patents: #7,208,881 | #7,568,821 | #7,604,380 | #7,777,424 | #9,423,086 | #9,476,548 | #9,581,309

Vigilant® LED Medium Intensity System L-864/L-865
Medium Intensity (Red/White) System with Infrared (IR)
FAA Type D & E

Application

Dialight's LED based obstruction system is ideal for D & E style FAA communication tower types and can be used to mark other structures as well. The operation of the lights is configurable and fully monitored. The side markers can be run in steady burn or flashing mode. The lights are ETL verified to the FAA requirements.

1x L-864/L-865
Photocell
3x L-810
AC/DC
Base Controller /
Power Supply

E1
200 ft–350 ft
(61 m–107 m)

2x L-864/L-865
Photocell
3x L-810
AC/DC
Base Controller /   Power
Power Supply   Supply

E1+1
200 ft–350 ft
(61 m–107 m)

1x L-865
Photocell
AC/DC
Base Controller /
Power Supply

D1
200 ft–350 ft
(61 m–107 m)

3x L-864/L-865
Photocell
AC/DC
Base Controller /   2x Power Supply
Power Supply

D2/E2
350 ft–700 ft
(107 m–213 m)

4x L-864/L-865
Photocell
AC/DC
Base Controller /   3x Power Supply
Power Supply

D2+1/E2+1
350 ft–700 ft
(107 m–213 m)

Vigilant® LED Medium Intensity System L-864 / L-865
Medium Intensity (Red / White) System with Infrared (IR)

LED Flash Head (L-864 / L-865)

Part Number	Description
D1CWFH409	Dual Red / White Medium Intensity Flash Head w/ IR

LED Side Markers L-810

Input	Part Number	Description
24-48 VDC	RTOCR28001	L-810 Low Intensity Side Marker w/ IR: DC Input

Controllers

Input	Part Number	Description
120-277 VAC	D1CWCTR409	Dual Red / White Medium Intensity Controller w/ IR: AC Input
48 VDC	D1CWCTR449	Dual Red / White Medium Intensity Controller w/ IR: DC Input

Power Supply

| Input	Part Number	Description
120-277 VAC	D1CWPS9409	Dual Red / White Medium Intensity Power Supply w/ IR: AC Input
48 VDC	D1CWPS9449	Dual Red / White Medium Intensity Power Supply w/ IR: DC Input

Photocell

Part Number	Description
D2566000PEC	Photocell: Single 3/4" NPT Entry

Cable

Tower Height	Description
up to 680 ft (207 m)	14 AWG (2.08 mm²) UV rated 4 conductor cable with metal foil and braid
above 680 ft (207 m)	12 AWG (3.31 mm²) UV rated 4 conductor cable with metal foil and braid

Intertek verified FAA compliant system numbers D1CW1x409SYS
Compliant to TC/ICAO

Vigilant® LED Based L-864
Medium Intensity (Red) Flash head with Infrared (IR)
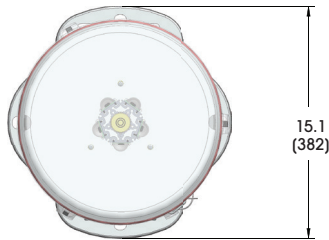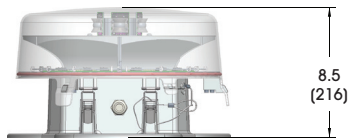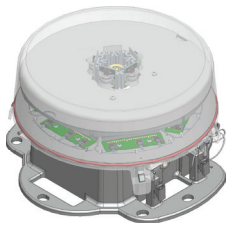
Certifications & Compliance

- FAA AC 150/5345 - 43J
- FAA EB No. 67D and 98
- IP66
- Transport Canada Standard 621
- ICAO Annex 14
- NEMA 4X

Features & Benefits

- 5 year warranty
- ETL verified to FAA standards
- IR wavelength at 850 nm
- Superior surge and lightning protection
- Patented optics for minimal down light/ground scatter
- IP66/NEMA 4X outdoor rated enclosures
- Remote monitoring options available
- Provisions for padlock on the enclosure
- 6kV of surge protection
- Shock and vibration resistant

8.5
(216)

15.1
(382)

Dimensions in inches [mm]

Technical Information:

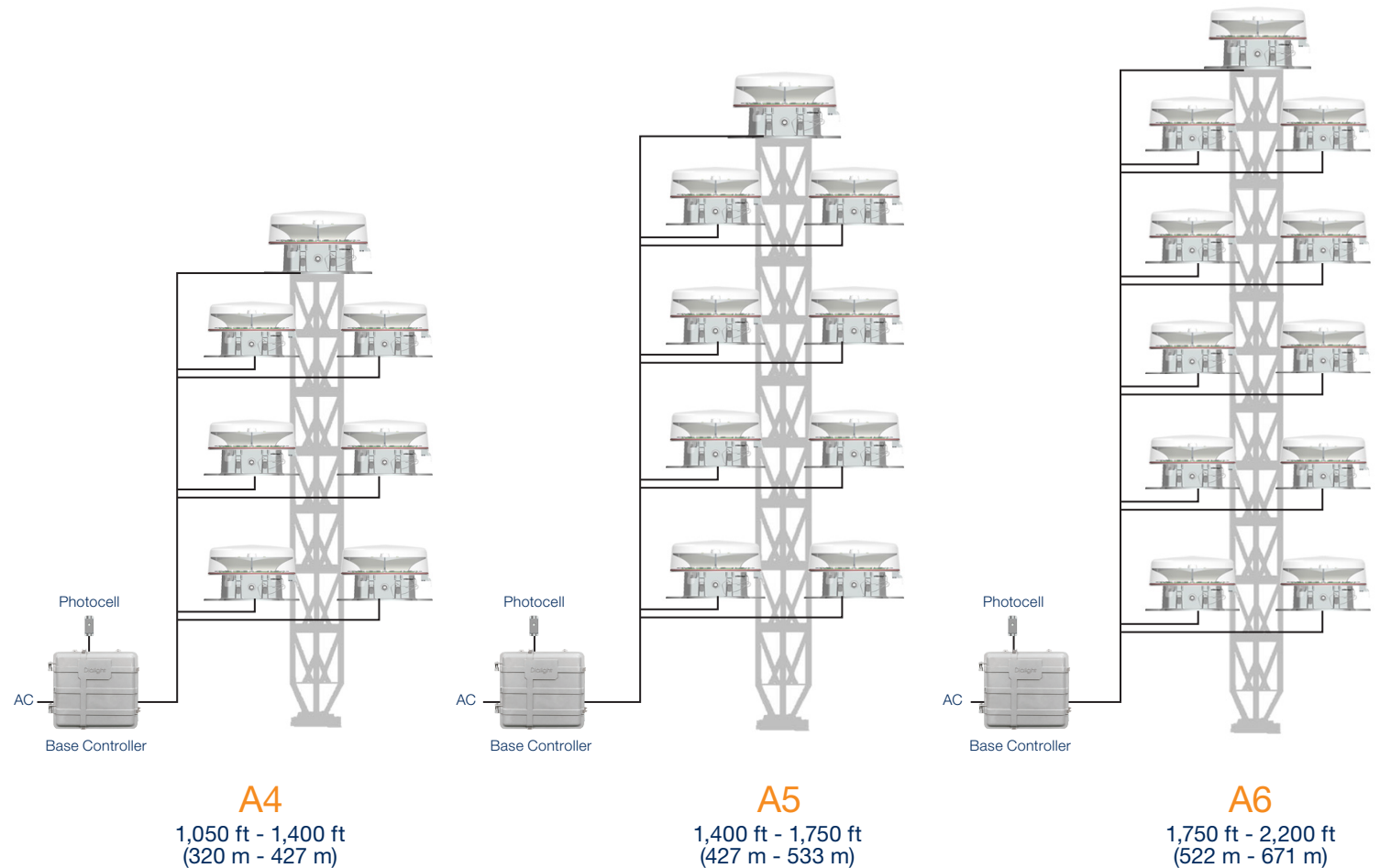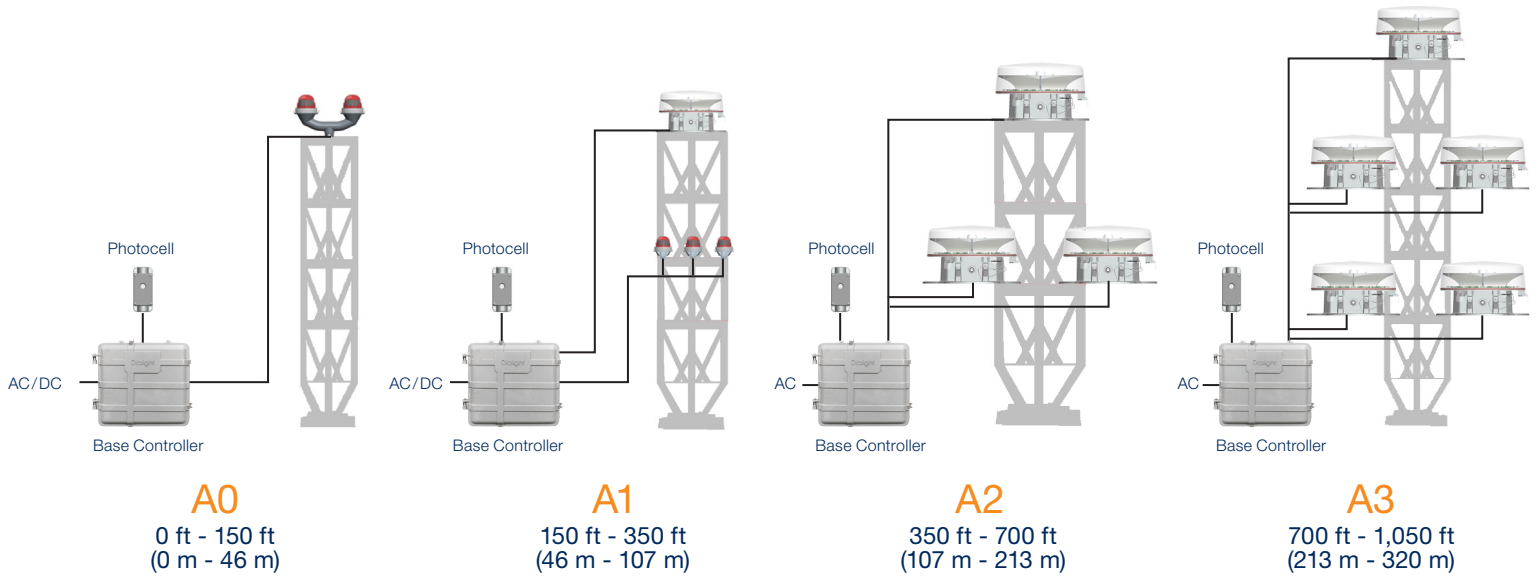|	
Flash head weight:	18 lbs (8.2 kg)
Flash rate:	20, 30, or 40 (±1%)
Effective intensity:	Red - 2,000 cd IR - 246 mW/sr
Wattage:	15.0 W (50% duty circle) - L864 3.0 W (50% duty circle) - L810 30 flashes per minute with 1.0 sec. on time
Operating temperature:	-40 °F to +131 °F (-40 °C to +55 °C)
Power factor:	> 0.9
All values typical unless otherwise stated (tolerance ±10%)	

US Patents: # 7,281,821 | #7,568,821 | #9,423,086 | #9,423,086 | #9,476,548 #9,581,309 (other patents pending)

Part Number	Description	Notes	Certification / Compliance
Standard Models			
D664R13001	L-864 Red Flash head with IR AC	120–240 VAC	FAA / TC, ICAO
D664R54001	L-864 Red Flash head with IR DC	24–48 VDC	FAA / TC, ICAO
RTOCR27001	L-810 Low Intensity Side Marker - single with IR	120–240 VAC	FAA / TC, ICAO
RTOCR27002	L-810 Low Intensity Side Marker - double with IR	120–240 VAC	FAA / TC, ICAO
RTOCR28001	L-810 Low Intensity Side Marker - single with IR	24–48 VDC	FAA / TC, ICAO
RTOCR28002	L-810 Low Intensity Side Marker - double with IR	24–48 VDC	FAA / TC, ICAO
Photocell			
D2566000PEC	Photocell: Single 3/4" NPT Entry	—	FAA / TC, ICAO
Controllers			
D6CB55CCTR	A0/A1 Red Controller (24-48 VDC)	2 outputs	FAA / TC, ICAO
D6CB77CCTR	A0/A1 Red Controller (AC system)	2 outputs	FAA / TC, ICAO
D6CE77CCTR	A1-A6 Red Controller (AC system)	12 outputs	FAA / TC, ICAO
D6CG77CCTR	A1-A6 Red Controller (AC system)	18 outputs	FAA / TC, ICAO

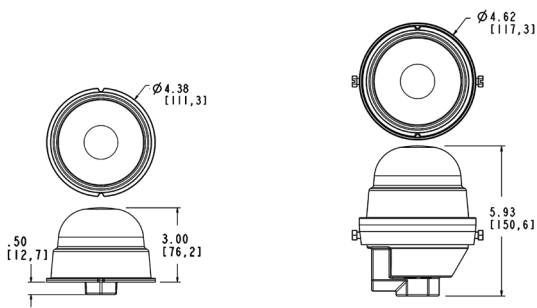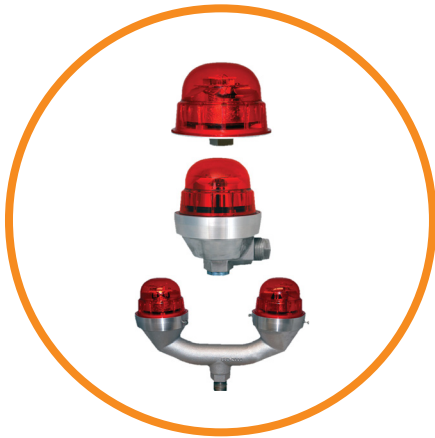Intertek verified FAA compliant system numbers D6Cxxx-SYS
Compliant to TC/ICAO

Vigilant® LED Based L-810 / L-864

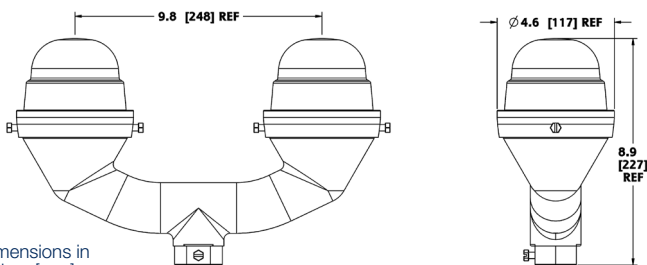## Red-Only Medium and Low Intensity Systems with Infrared (IR)

A0
0 ft - 150 ft
(0 m - 46 m)

A1
150 ft - 350 ft
(46 m - 107 m)

A2
350 ft - 700 ft
(107 m - 213 m)

A3
700 ft - 1,050 ft
(213 m - 320 m)

A4
1,050 ft - 1,400 ft
(320 m - 427 m)

A5
1,400 ft - 1,750 ft
(427 m - 533 m)

A6
1,750 ft - 2,200 ft
(522 m - 671 m)

Vigilant® LED Based L-810
Low Intensity (Red) RTO Side Marker with Infrared (IR)

Certifications & Compliance

- FAA AC 150/5345 - 43J
- FAA EB No. 67D and 98
- IP66
- Transport Canada Standard 621
- ICAO Annex 14
- NEMA 4X

Features & Benefits

- 5 Year Warranty
- ETL verified to FAA standards
- IR wavelength at 850 nm
- Superior surge and lightning protection
- Controllers available for all applications
- Compact, low power design
- Ideal for towers, stacks, wind turbines, buildings, etc.
- 360 degree coverage for each flash head
- Shock and vibration resistant
- Lighting kits available for standard towers

Retro-fit Unit   Single Fixture


Dimensions in inches [mm]

Dual Fixture

Technical Information:

Unit weight:	1.25 lbs (0.56 kg) (Retro unit)
	2.00 lbs (0.91 kg) (Single unit)
	4.60 lbs (2.09 kg) (Dual unit)
Supply voltage ranges:	Nominal ±10%
Effective intensity:	Red - 32 cd
	IR - 4 mW/sr
Wattage:	RTOCR27 (AC) = 6w steady burn
	RTOCR28 (DC) = 5.2w steady burn.
Power factor:	> 0.9 (All AC units)
Operating temperature:	-40 °F to +131 °F (-40 °C to +55 °C)
Input AC frequency:	50/60 Hz

All values typical unless otherwise stated (tolerance ± 10%)

US Patent #7,604,384 | # 9,423,086 | #9.423,086

Part Number	Description	Voltage	Certification / Compliance	Wattage
RTOCR27001	Single Fixture Red/Infrared (IR)	120−240 VAC	FAA / TC, ICAO	6.0
RTOCR28001	Single Fixture Red/Infrared (IR)	24–48 VDC	FAA / TC, ICAO	5.2
RTOCR27002	Dual Fixture Red/Infrared (IR)	120−240 VAC	FAA / TC, ICAO	12.0
RTOCR28002	Dual Fixture Red/Infrared (IR)	24–48 VDC	FAA / TC, ICAO	10.4
RTOCR27004	Single Side Marker Retro-fit Fixture Red/Infrared (IR)	120−240 VAC	FAA / TC, ICAO	6.0
RTOCR28004	Single Side Marker Retro-fit Fixture Red/Infrared (IR)	24–48 VDC	FAA / TC, ICAO	5.2

Vigilant® LED Based L-810
Low Intensity (Red) RTO Side Marker
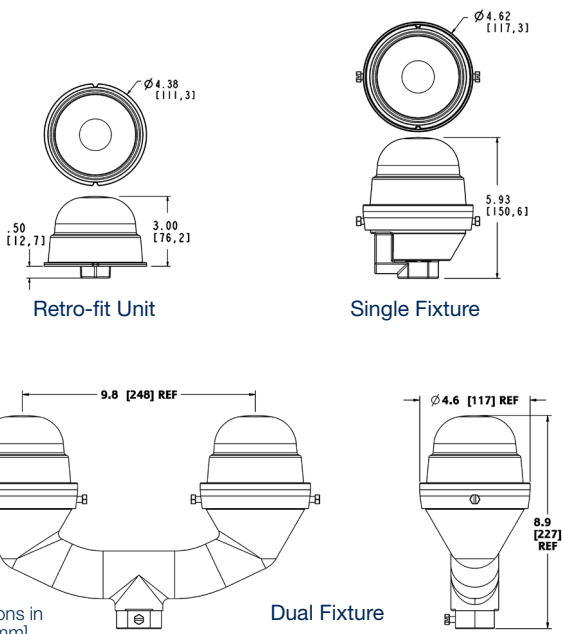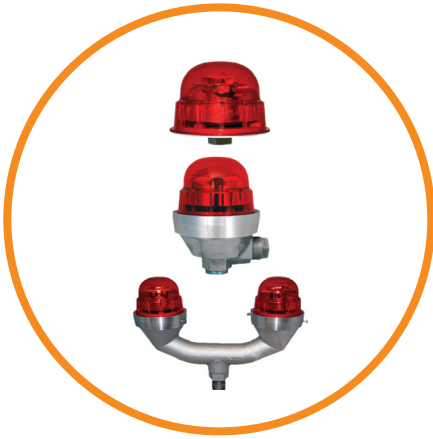
Certifications & Compliance

- FAA AC 150/5345 – 43H
- FAA EB No. 67D and 98
- IP66
- Transport Canada Standard 621
- ICAO Annex 14
- DGAC Mexico

Features & Benefits

- Superior surge and lightning protection
- Controllers available for all applications
- Compact, low power design
- Ideal for towers, stacks, wind turbines, buildings, etc.
- 360 degree coverage for each flash head
- Shock and vibration resistant
- Lighting kits available for standard towers

Retro-fit Unit

**Single Fixture**

Dual Fixture

Dimensions in inches [mm]

Technical Information:

Unit weight:	1.25 lbs (0.56 kg) (Retro unit)
	2.00 lbs (0.91 kg) (Single unit)
	4.60 lbs (2.09 kg) (Dual unit)
Supply voltage ranges:	Nominal ±10%
Power factor:	> 0.9 (All AC units)
Operating temperature:	-40 °F to +131 °F (-40 °C to +55 °C)
Input AC frequency:	50/60 Hz

All values typical unless otherwise stated (tolerance ± 10%)

US Patent #7,604,384 | # 9,423,086 | #9.423,086

Part Number	Description	Voltage	Certification / Compliance	Wattage
RTO1R07001	Single Fixture	120–240 VAC	FAA / TC, ICAO	6.5
RTO1R18001	Single Fixture - Low Power	12–48 VDC	FAA / TC, ICAO	1.5
RTO1R07002	Dual Fixture	120–240 VAC	FAA / TC, ICAO	13
RTO1R18002	Dual Fixture - Low Power	12–48 VDC	FAA / TC, ICAO	3
RTO1R07004	Single Side Marker Retro-fit Fixture	120–240 VAC	FAA / TC, ICAO	6.5
RTO1R18004	Single Side Marker Retro-fit Fixture - Low Power	12–48 VDC	FAA / TC, ICAO	1.5
RTO1R07001EU	Single Fixture	120–240 VAC	ICAO only, 32cd	6.5
RTO1R07002EU	Dual Fixture	120–240 VAC	ICAO only, 32cd	13
RTO1R07004EU	Single Side Marker Retro-fit Fixture	120–240 VAC	ICAO only, 32cd	6.5

Vigilant® LED Based L-810
Low Intensity (Red) Light
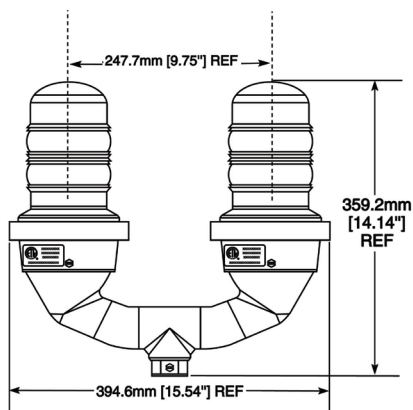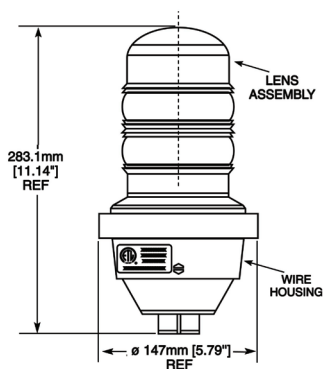
Compliance

- IP66
- Transport Canada Standard 621
- ICAO Annex 14
- CASA

Features & Benefits

- Superior surge and lightning protection
- Controllers available for all applications
- Ideal for towers, stacks, wind turbines, buildings, etc.
- 360 degree coverage for each flash head
- Shock and vibration resistant
- Lighting kits available for standard towers
- 6kV of surge protection

Dimensions in inches [mm]

Technical Information:

Unit weight:	7.14 lbs (3.23 kg) (Single unit)
	16.06 lbs (7.28 kg) (Dual unit)
Wattages:	15 W/120mA (120 VAC) ± 10%
	16 W/120mA (230 VAC-60 Hz) ± 15%
	16 W/(230 VAC - 50 Hz)
	24 W/2.0A (12 VDC - Standard)
	20 W/920mA (24 VDC)
	13 W/275mA (48 VDC)
Voltage amp:	44 VA (120 VAC) ± 10%
	67 VA (230 VAC) ± 15%
Operating temperature:	-67 °F to +131 °F (-55 °C to +55 °C)

All values typical unless otherwise stated (tolerance ± 10%)

US Patent #6,425,678 (other patents pending)

Part Number	Description	Voltage
860-1R01-001	Single Fixture	120 VAC
860-1R02-001	Single Fixture	230 VAC
860-1R03-001	Single Fixture	12 VDC
860-1R04-001	Single Fixture	48 VDC
860-1R05-001	Single Fixture	24 VDC
860-1R01-002	Dual Fixture	120 VAC
860-1R02-002	Dual Fixture	230 VAC
860-1R04-002	Dual Fixture	48 VDC
860-4R02-001-EU	Single Fixture	230 VAC
860-1R02-002-EU	Dual Fixture	230 VAC
860-6R01-001	Single Fixture	120 VAC
860-6R01-002	Dual Fixture	120 VAC

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