

RUNWAY LIGHTING

DRC / DTZ

LED Runway Centerline and Touchdown Zone Inset Light

STYLE 2, HIGH-INTENSITY



Compliance with Standards

ICAO: Runway Centerline: Annex 14, Vol. 1, par. 5.3.12 Touchdown Zone: Annex 14, Vol. 1, par. 5.3.13 RETILS: Annex 14, Vol. 1, par. 5.3.15

FAA: L- 850A(L) & L-850B(L) AC 150/5345-46 and FAA Engineering Brief No. 67. ETL certified

T/C: Runway Centerline: TP 312 par. 5.3.13. Touchdown Zone: TP 312 par. 5.3.14. RETILS: TP 312 par. 5.3.20.

NATO: STANAG 3316

Uses

ICAO & T/C

- Runway Centerline Light in CAT I, II and III
- Touchdown Zone Light in CAT II and III
- RETILS Light in CAT I, II and III

FAA L-850A(L)

- Runway Centerline on CAT I, II, and III runways

FAA L-850B(L)

- Touchdown Zone on CAT I, II, and III runways

Features

- The evolution of the most successful LED lights in the world, fully adapted to the characteristics of an LED lighting source.
- Very low energy consumption (typically 25 W for a single-plug bidirectional light, and 13 W per side for a dual-plug light, compared to 96 or 48 W for tungsten halogen lights).
- Greatly reduced maintenance: calculated MTBF of 56,000 hours at 6.6A.
- Increased traffic efficiency and availability of the runways thanks to the reduction of maintenance.
- Optimum and homogenous light distribution along the lights installed on the same runway.
- High discrimination between functions thanks to the saturated colors, crisp white light, their stability at the different brightness steps and under all viewing angles.
- Full compatibility with existing airfield lighting series circuits. No need to replace the CCRs, series transformers, or cables.
- Fully dimmable lights, respecting the response curve of traditional halogen lights. Operates on the full range of 2.8 A to 6.6 A.

- Installation on the same bases as 8 inch tungsten-halogen lights for a straightforward replacement.
- Substantial investment reduction for new installations, resulting from a lower installed load.
- Very low working temperature, ensuring longer component life.
- Rugged lightning protection complies with ANSI/IEEE C62.41-1991 Location Category C2 given in FAA Eng. Brief 67. Category C2 is defined as a 1.2/50 μ S – 8/20 μ S combination wave, with a peak voltage of 10,000 V and a peak current of 5,000 A.
- When turned on, light rise time is low. The light is perfectly adapted for any incursion protection system.
- Optional monitoring function of the individual light source. In case of a defect, the LED light automatically disconnects from the secondary side of the isolation transformer, resulting in an open circuit condition.
- Environment-friendly, precision-cast aluminium alloy top, intermediate and bottom covers.
- Corrosion-resistant stainless steel hardware. Use of Torx screws ensures ease of maintenance.

DRC/DTZ lights are part of a complete range of LED in-pavement lights, featuring innovative characteristics, as a leverage for:

Reliability

- Additional watertightness barriers, protecting both the electronics and the LEDs in case of accidental water ingress, along the prism or the gaskets as well as along the cables.
- Prisms of small dimensions installed in a deep optical channel with no negative window slope: optimal protection against rubber deposit, scratches and shocks.

Modularity

- High commonality of components between the various models. Stock management is easier.
- Field customization according to the application is straightforward: a light can be transformed into another model by swapping components.
- Same tools and same procedures to maintain the whole range, reducing the risk of mistakes and time loss.

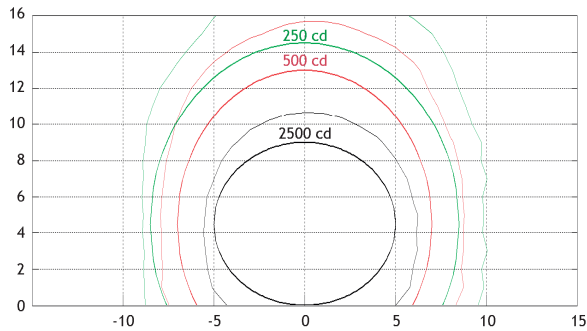
RUNWAY LIGHTING

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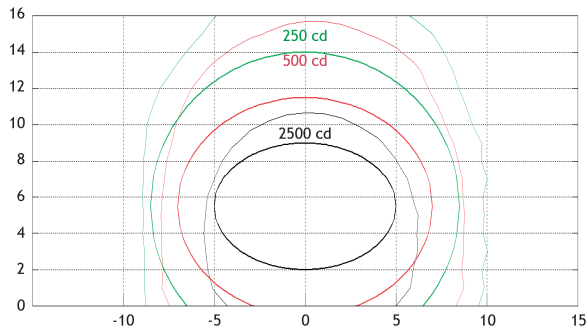
Photometric Performances

Application ICAO	Application FAA	Main beam aperture		Color	ICAO Main beam average intensity (cd) (typical value)	FAA Horizontal / Vertical average intensity (cd) (typical value)
		Horiz. (°)	Vert. (°)			
Runway Centerline	L-850A	-5 to +5	0 to 9	White	5,466	5,417 / 5,921
Runway Centerline	L-850A	-5 to +5	0 to 9	Red	1,678	1,670 / 1,782
Touchdown zone	L-850B	-5 to +5 (4° toe-in)	2 to 9	White	5,675	5,400 / 6,241
RETILS	N.A.	-5 to +5	0 to 9	Yellow	3,103	N.A.

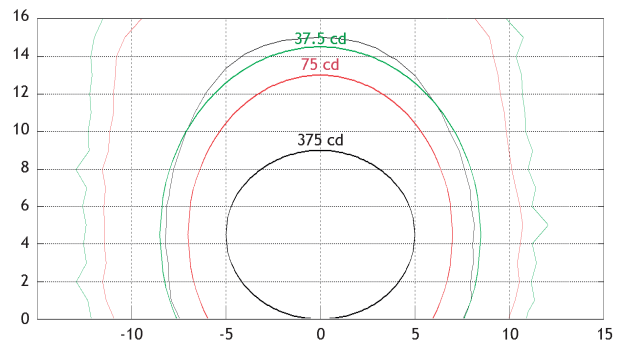
Photometric Curves



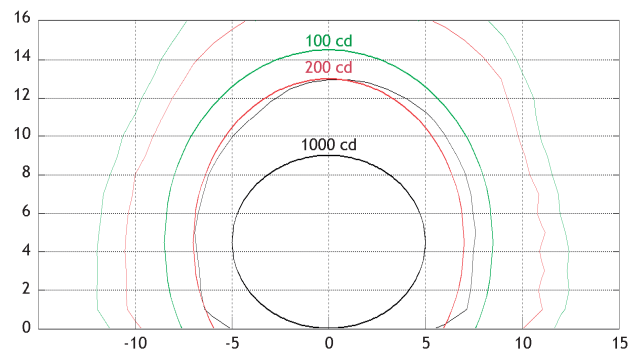
Photometry – ICAO runway centerline / FAA L-850A (white)



Photometry – ICAO touchdown zone / FAA L-850B (white)



Photometry – ICAO runway centerline / FAA L-850A (red)



Photometry – ICAO RETILS (yellow)

Additional photometric curves can be found in the Product Center on our website (www.adbsafegate.com) under the "Photometric Data" tab, or by contacting your local ADB SAFEGATE representative.

Ordering Code

D XX X X X X A X X X 00 0

AD=light

Application

RC = Runway Centerline

TZ = Touchdown zone

Cord Set Style and length

A = Standard version

(Style 6 plugs), 10" long¹

G = German Style 1 (2-pin), 10" long¹

F = French Style 1 (3-pin), 10" long¹

L = Style 6 (2-pin), 18" long (FAA)²

Cable and Connector

2 = 1 plug (2-pin)

3 = 2 plugs (2-pin)

4 = 1 plug (3-pin)

5 = 2 plugs (3-pin)

LED Color 1 – Left

W = White

R = Red

Y = Yellow³

N = Obscure / Blank (No light)

LED Color 2 – Right

W = White

R = Red

N = Obscure / Blank (No light)

Toe-in

0 = No toe-in

4 = Left toe-in

5 = Right toe-in

Dimensions

A = 8" diameter, 1/2" (12.7mm) protrusion

Power Supply and Monitoring

S = 6.6A - 50/60Hz series supply, w/out monitoring

M = 6.6A - 50/60Hz series supply, with monitoring

Standards

0 = ICAO, TP 312 and FAA

I = ICAO and TP 312 only³

Winter Options

0 = None

2 = Heavy-duty abrasion-resistant lens coating⁴

Fixed Digit

00

Version

0 = Original version

Notes

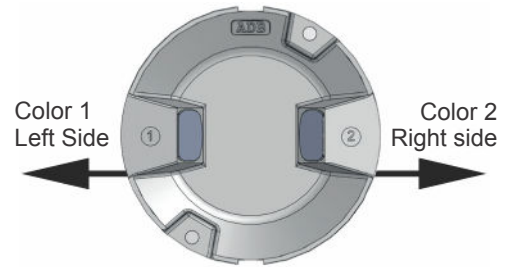
¹ 8" fixtures with 10" cord sets are for installation on shallow bases.

² Fixtures with 18" cord sets are for installation on deep base cans.

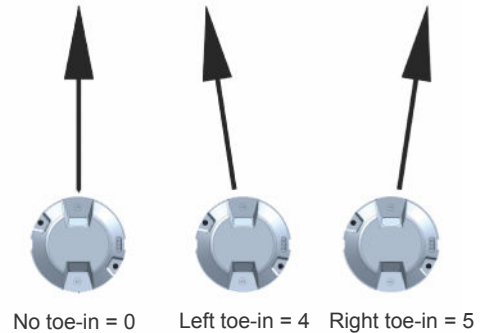
³ To be used for RETILS application.

⁴ Typically used for intensive winter service where sand is applied to runways and rotating brushes are used.

Toe-in Color Coding



DRC: Toe-in = 0



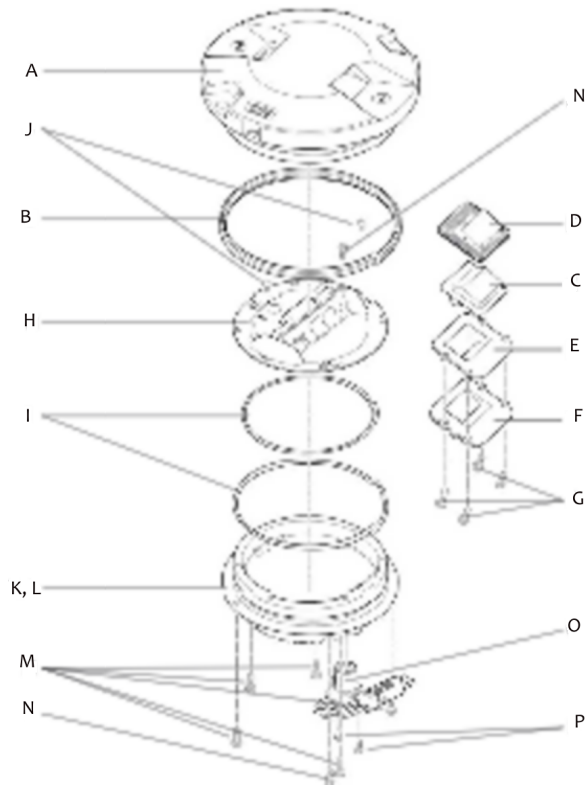
Maintenance Friendliness

- Maintenance-friendly: components subject to wear or damage like prisms and cables can easily be replaced. Neither sealing compounds nor resin are required.
- Innovative design of the cable entry, permitting replacement without the need to open the light. This eliminates the risk of water leakage due to a pinched cable.
- Reduced number of components for maintenance simplicity.
- Pressure-release plug for water-tightness testing of fixture after overhaul.

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Design



Construction

- A Aluminium alloy upper cover
- B Labyrinth gasket
- C Prism (1 or 2)
- D Prism gasket (1 or 2)
- E Prism protection plate
- F Prism bracket
- H Optical assy, including LEDs
- I O-ring gaskets
- K, L Aluminium alloy inner cover assy, with transformer(s) and printed circuit board
- N Pressure release plug with O-ring
- O Replaceable cable lead with molded FAA L-823 style 6 plug (1 or 2)

Installation

1) On a shallow base (Fig. 6).

The 8" dia. base is secured in the pavement by means of resin. Correct positioning and leveling are obtained with a jig with sighting telescope. Wires between the light and the series transformer are installed either in saw cuts in the pavement filled with resin or in pipes in the lower concrete layers. Mounting on existing or new, larger diameter bases is made possible by means of dedicated adapter rings.

2) On a FAA L-868B size B steel base (Fig. 7).

The 8" dia. light is mounted in an 8" to 12" dia. snow plow or adapter ring bolted onto the base. The 12" fixture is directly mounted without a separate ring. The bases are interconnected by means of conduits protecting the cables. See FAA AC 150/5340-30 for additional design guidance on deep base cans. The series transformer is installed under the light or in a separate pit. See data sheet A.05.120 or 2012 for more information on base cans.

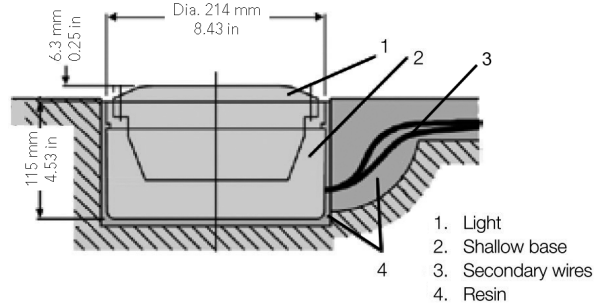


Fig. 6: Installation on 8" shallow base

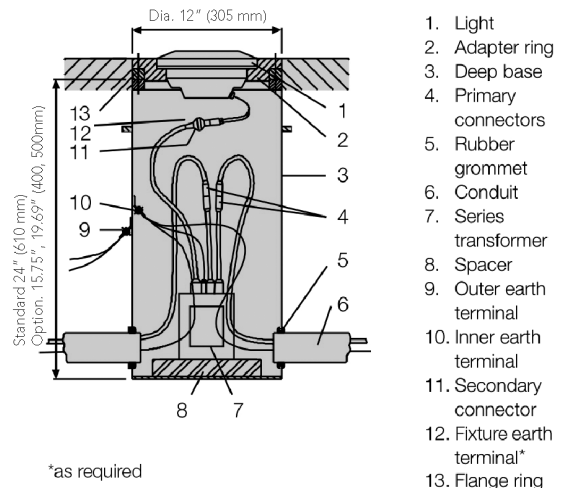


Fig. 7: Installation on FAA L-868 base

Dimensions

8" fixture:	
Outside diameter	202 mm (7.97 in)
Overall height	78.4 mm (3.1 in)
8" shallow base:	
Outside diameter	230 mm (9.06 in)
Depth	115 mm (4.53 in)

Packaging

8" fixture:	
In cardboard box	210 × 210 × 100 mm (8.27 × 8.27 × 3.94 in)
Weight with packing	3.9 kg (8.6 lb)
Weight without packing	3.7 kg (8.2 lb)
8" shallow base:	
In cardboard box	230 × 230 × 150 mm (9.06 × 9.06 × 5.91 in)
Weight with packing	2.8 kg (6.2 lb)
Weight without packing	2.6 kg (5.7 lb)

Electrical Supply

2.8A-6.6 A, through a 20/25 W isolation transformer. DRC / DTZ lights have been designed to work with any IEC or FAA compliant transformer up to 100 W without affecting the performances or the lifetime of the light or the transformer. However, using a non-matched transformer will reduce its efficiency.

See data sheet A.06.112 or 3033 for more details on recommended isolation transformers.

Fixture Type	Fixture Load	Isolation Transformer	Isol. XF Load	CCR Load
Bidirectional, 1 plug				
DRC	25 VA	20/25 W	9 VA	34 VA
Unidirectional or bidirectional, 2 plugs Load per side				
DRC / DTZ	13 VA	20/25 W	9 VA	22 VA