

GUIDANCE SIGNS

AGSF-L

FAA LED Light Bar Airfield Guidance Sign



Compliance with Standards

FAA: L-858Y(L), L-858R(L), L-858L(L) and L-858B(L) AC 150/5345-44 (Current Edition) and the FAA Engineering Brief No. 67. ETL Certified.

Uses

FAA L-858Y(L)

Direction, Destination, and Boundary (Informational Sign)

FAA L-858R(L)

Mandatory Sign

FAA L-858L(L)

Runway/Taxiway Location Sign: These signs are designed to guide pilots to a particular point on the field, identify holding positions, identify taxiway and runway intersections, and prohibit aircraft entry into designated areas.

FAA L-858B(L)

Runway Distance Remaining Sign: The L-858B is used at 1,000-foot intervals adjacent to the runway edge in order to provide runway distance remaining information to pilots during takeoff and landing operations.

Construction

Corrosion-resistant sign construction requires minimal maintenance.

- Aluminum housing
- Acrylic sign legend panels
- Stainless steel hardware
- Retroreflective sheeting
- Translucent plastic panel dividers used between multi-module legend panels

Operating Conditions

Temperature -40 °F to +131 °F (-40 °C to +55 °C)
Humidity 0 to 100%
Wind

- ADB Safegate Mode 2 signs withstand wind velocities up to 200 mph
- ADB Safegate Mode 3 signs withstand wind velocities up to 300 mph

Features

- Unique LED Light Bar design maximizes energy efficiency
- Available Battery Tester provides for quick and easy testing of individual LED Light Bars
- Electrical design uses a minimal number of components which maximizes sign MTBF and greatly simplifies troubleshooting efforts.
- Virtually eliminates runway and taxiway shutdowns due to long-lasting LED light source
- Direct replacement for existing sign
- Creates a highly uniform distribution of light, eliminating hot spots and shadows
- Operates on ferroresonant or thyristor CCRs that are designed in compliance with FAA or IEC requirements
- Operates on all steps of a 3-step or 5-step CCR and on a 5.5 A CCR.
- Eliminates re-lamping expenses and reduces on-going maintenance costs
- Improved safety — low, regulated DC voltage inside sign
- Rugged lightning protection that complies with ANSI/IEEE C62.41-1991 Location Category C2 given in FAA Eng. Brief 67. Category C2 is defined as a 1.2/50µS – 8/20 µS combination wave, with a peak voltage of 10,000 Volts and a peak current of 5,000 A.

Sign Legends

Type	Purpose	Legend Color	Background Color
L-858Y	Direction, Destination & Boundary	Black	Yellow
L-858R	Mandatory Sign	White with Black Outline	Red
L-858L	Runway/Taxiway Location	Yellow	Black
L-858B	Runway Distance Remaining	White	Black

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Electrical Supply

Signs are internally lighted and are connected to a series circuit using the appropriately-sized 50 or 60 Hz L-830/L-831 isolation transformer.

Sign Load & Transformer Requirements

Sign Size	No. of Modules	Style 2: 3-Step LED Signs (4.8-6.6 A)			Style 3: 5-Step LED Signs (2.8-6.6 A)			Style 5: Single-Step LED Signs (5.5 A)		
		Transformer	Power Factor	VA Load (Volt Amp)	Transformer	Power Factor	VA Load (Volt Amp)	Transformer	Power Factor	VA Load (Volt Amp)
1	1	65 W	0.83	85	100 W	0.88	75	65 W	0.84	75
1	2	100 W	0.83	95	150 W	0.88	95	65 W	0.84	85
1	3	100 W	0.88	95	150 W	0.88	95	100 W	0.88	85
1	4	100 W	0.91	95	150 W	0.90	100	100 W	0.88	95
2	1	65 W	0.88	90	150 W	0.88	90	65 W	0.92	75
2	2	100 W	0.88	95	150 W	0.90	95	100 W	0.89	85
2	3	100 W	0.91	100	150 W	0.83	100	100 W	0.90	100
2	4	100 W	0.91	100	150 W	0.85	100	100 W	0.90	100
3	1	100 W	0.83	95	150 W	0.88	95	65 W	0.84	85
3	2	100 W	0.91	95	150 W	0.90	100	100 W	0.88	95
3	3	100 W	0.91	100	150 W	0.83	100	100 W	0.92	100
3	4	150 W	0.88	115	200 W	0.85	115	100 W	0.92	110
4	1	100 W	0.84	95	150 W	0.88	95	65 W	0.83	85
5	1	100 W	0.83	95	150 W	0.83	95	65 W	0.92	85

- The number for the total VA load imposed on the CCR represents the actual load imposed on the regulator and accounts for power factor and load imposed by the transformer.

L-858 Sign LED Retrofit Kits for ADB Safegate Signs

Application

A retrofit kit is available to convert any existing ADB Safegate tungsten-halogen or fluorescent sign to an LED light source. The same retrofit kit can be used to convert signs using LED light tubes (Part No. 48A0408 and 48A0409) to the new LED light bar design. The kit is available for all FAA Types: L-858Y, L-858R, L-858L and L-858B; all Sizes: Size 1 through 5; and all module lengths: up to 4 modules. Retrofitting a sign is fast and easy. It typically takes 20 minutes to retrofit a 2-module sign. The retrofit process converts the sign to the same type as an existing ADB Safegate ETL-Certified sign.

Reduced Maintenance costs

An LED sign virtually eliminates runway and taxiway shutdowns due to the long life LED light source. It eliminates re-lamping expenses and reduces on-going maintenance costs. The LED optical design also creates a highly uniform distribution of light, eliminating hot spots and shadows. Also, the sign provides for improved safety because there is only a low, regulated DC voltage inside sign.

Energy savings

An LED sign provides greatly reduced energy consumption compared to existing types of signs. See chart below for more information.

The LED sign operates on ferroresonant or thyristor CCRs that are designed in compliance with FAA requirements. The sign electronics

are designed to operate on 3-step, 5-step, and 1-step (5.5 A dedicated) series circuits.

See Sign Load & Transformer Requirements section for sign loading and optimum sign transformer size. Note that the existing larger size transformer, if present, can be reused.

See www.adbsafegate.com for Service Bulletin ALN158 with details on how to retrofit a sign to LED light bars.

LED Sign Retrofit Kit

Size

- 1 = Size 1
- 2 = Size 2
- 3 = Size 3
- 4 = Size 4
- 5 = Size 5

Number of Modules

- 1 = 1 module
- 2 = 2 modules
- 3 = 3 modules
- 4 = 4 modules

94A0628 - X X 0



LED and Halogen Sign Comparison Table

Sign Size	Style	No. of Modules	Isolation Transformer Size Required	LED Max. CCR VA Load ¹	Tungsten Halogen Max CCR VA Load ¹	Energy Savings
2, 3	Style 2 (3-step)	3	500 W for T-H 100 W for LED	100	340	71%
1	Style 3 (5-step)	4	500 W for T-H 150 W for LED	100	233	57%

Notes

¹ CCR Load includes both sign and isolation transformer load.

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Sign Dimensions and Weights

Sign Heights - Inches (Centimeters)						
Size No.	Type	Sign Face Height	Legend Height	Sign Style No.	Sign Class No.	Overall Mounting Height
1	L-858Y/R/L	18 (45.7)	12 (30.5)	2,3,5	1,2	29.7 (75.5)
2	L-858Y/R/L	24 (61)	15 (38.1)	2,3,5	1,2	35.7 (90.8)
3	L-858Y/R/L	30 (76.2)	18 (45.7)	2,3,5	1,2	41.7 (106)
4	L-858B	48 (122)	40 (101.6)	2,3,5	1,2	58.2 (147.8)
5	L-858B	30 (76.2)	25 (63.5)	2,3,5	1,2	41.7 (106)

Sign Lengths - Inches (Centimeters)				
Size No.	1 Module	2 Module	3 Module	4 Module
1	29.4 (75)	58.6 (149)	87.9 (223)	117.2 (298)
2	35.9 (91)	71.6 (182)	107.4 (273)	143.2 (364)
3	42.4 (108)	84.6 (215)	126.9 (323)	169.2 (430)
4	47.9 (122)	N/A	N/A	N/A
5	42.4 (108)	N/A	N/A	N/A

Packaging Dimensions (Height x Length x Depth) - Inches (Centimeters)				
Size No.	1 Module	2 Module	3 Module	4 Module
1	34 x 34 x 13 (87 x 86.4 x 33)	34 x 63 x 13 (87 x 160 x 33)	34 x 92 x 13 (87 x 234 x 33)	34 x 121 x 13 (87 x 307 x 33)
2	40 x 40 x 13 (102 x 102 x 33)	40 x 72 x 13 (102 x 193 x 33)	40 x 112 x 13 (102 x 285 x 33)	40 x 147 x 13 (102 x 374 x 33)
3	46 x 46 x 13 (117 x 117 x 33)	46 x 89 x 13 (117 x 226 x 33)	46 x 131 x 13 (117 x 333 x 33)	46 x 173 x 13 (117 x 440 x 33)
4	62 x 52 x 13 (158 x 132 x 33)	N/A	N/A	N/A
5	46 x 46 x 13 (117 x 117 x 33)	N/A	N/A	N/A

Packaging Weight (Estimated) - Pounds (Kilograms)				
Size No.	1 Module	2 Module	3 Module	4 Module
1	46 (21)	78 (35)	115 (52)	169 (77)
2	71 (32)	104 (47)	153 (70)	220 (100)
3	81 (37)	131 (60)	199 (90)	252 (114)
4	122 (56)	N/A	N/A	N/A
5	81 (37)	N/A	N/A	N/A

- Sign depth is 9.4 in (23.9 cm). See www.adbsafegate.com for additional installation information.
- Signs are shipped with L-823 cord set(s), frangible couplings, and floor flanges –ready for installation.

Ordering Code

S X X X - X X X 3 X X 0

Lamp Type

- R = LED (Mode 2)
- S = LED High Wind (Mode 3)¹

Sign Size

- 1 = Size 1
- 2 = Size 2
- 3 = Size 3
- 4 = Size 4
- 5 = Size 5

Module

- 1 = 1 Module
- 2 = 2 Module
- 3 = 3 Module
- 4 = 4 Module

Style

- 7 = LED Style 2, Style 3, and Style 5
- A = APS

Face

- 1 = Single
- 2 = Double

Total Number of Panels

- X = To be determined by the ADB Safegate Sales Department based on legend and module configurations.
- 3

Power

- 1 = Power through leg without ON/OFF switch
- 2 = Power through leg with ON/OFF switch
- 3 = Power through side without ON/OFF switch³
- 4 = Power through side with ON/OFF switch³
- 5 = Customer-provided entry without ON/OFF switch^{2,3}
- 6 = Customer-provided entry with ON/OFF switch^{2,3}
- 9 = Power through bottom without ON/OFF switch³
- A = Power through bottom with ON/OFF switch³

Tether

- 0 = No tether³
- 1 = One tether on one end of sign
- 2 = Two tethers, one on each end
- 3 = One tether per leg

Notes

- Customer to provide legend information and power connection side. It is important to match power cord exit location with legend side.
- ¹ High wind signs require four anchor bolts per floor flange except Size 1, which uses the standard 2-bolt foot.
- ² Cord set coiled up inside side. Customer provides entry hole.
- ³ Not ETL Certified.

LED Light Engine Tester

44A7264-1

Battery-powered tester is used during maintenance activities to separately test a single LED light bar. Uses four size D batteries and outputs 350 mA. Output is activated using a momentary switch.

STD Legend Panel Replacement 44A6084 - X X X 0

Size

- 1 = Size 1¹
- 2 = Size 2
- 3 = Size 3 and 5
- 4 = Size 4

Number of Modules

- 1 = 1 module
- 2 = 2 modules

Panel Type

- 1 = With legend (retroreflective)
- 2 = Black

Sign Type

- 0 = Standard

Notes:

- ¹ For size 1 standard and high-wind signs use 44A6084-XXX0 standard legend panels.

HW Legend Panel Replacement 44A7777 - X X X 1

Size

- 2 = Size 2
- 3 = Size 3 and 5
- 4 = Size 4

Number of Modules

- 1 = 1 module
- 2 = 2 modules

Panel Type

- 1 = With legend (retroreflective)
- 2 = Black

Sign Type

- 1 = High-Wind

Notes:

- For size 1 high-wind signs, use 44A6084-XXX0_standard legend panels.

Legend Panel Divider 44A6173 - X X X

Size

- 1 = Size 1
- 2 = Size 2
- 3 = Size 3 and 5

Paint Coverage

- A = Solid (black only)¹
- C = Clear (paint top only)

Paint Color

- R = Red
- Y = Yellow
- B = Black¹

Note:

- ¹ For option A (solid), customer must select option B (black). Option C (clear) can be paired with either red or yellow.