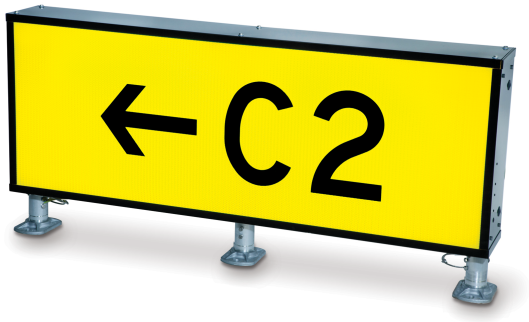
GUIDANCE SIGNS

AGSF-L

FAA LED Airfield Guidance Sign



Compliance with Standards

FAA: L-858Y(L), L-858R(L), L-858L(L), L-858H(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)

Informational Direction, Destination, and Boundary Signs - Black inscription on a yellow background. Designed to guide pilots to a particular point on the airfield by identifying runway exits, taxiway directions, taxiway intersections, taxiway ending, and inbound/ outbound destinations, boundaries.

FAA L-858R(L)

Mandatory Instruction Signs - White inscription with black outline on a red background. Designed to identify holding positions, runway intersections, and prohibit aircraft entry into designated areas.

FAA L-858L(L)

Runway and Taxiway Location Signs - Yellow inscription on a black background with a yellow border. Designed to identify taxiway and runway location on which the aircraft is located.

FAA L-858B(L)

Runway Distance Remaining Signs - White inscription on a black background. Designed to provide runway distance remaining information to pilots during takeoff and landing operations. Inscriptions are descending numerals used at 1,000-foot intervals adjacent to the runway edge.

FAA L-858H(L)

One-Half Runway Distance Remaining Signs - White inscription on a black background. Designed to identify the point on the runway where one-half the takeoff distance remains. For use with unpaved runways less than 3,000 feet in length.

Operating Conditions

Temperature	-40 to +131 °F (-40 to +55 °C)
Humidity	0 to 100%
Wind	Mode 2 signs withstand 200 mph (322 kph) Mode 3 signs withstand 300 mph (483 kph)

Features

- Long lasting LEDs virtually eliminate runway and taxiway shutdowns.
- LED technology virtually eliminates re-lamping and maintenance costs.
- Energy efficient custom designed LED light bars reduce operation utility cost.
- Robust design reduces maintenance cost and maximizes Mean Time Between Failures MTBF.
- Easy access to components for easy maintenance and troubleshooting.
- Uniform light distribution provides a more vibrant better-looking sign.
- Eliminates hot spots and shadows compared to halogen signs.
- Built-in shorted LED detection ensures safe illumination and compliance with FAA Engineering Brief No. 67D.
- Compatible with ferroresonant and thyristor CCRs in compliance with FAA and IEC requirements.
- Provides constant illumination on all CCR steps 2.8 - 6.6 A.
- Operates on all steps of a 3-step, 5-step, and 1-step CCRs.
- Regulated low-voltage DC electronics inside the sign for increased safety.
- Rugged lightning protection complies with FAA Engineering Brief No. 67D and ANSI/IEEE C62.41-1991 Location Category C2.
- Direct replacement for ADB Safegate AGSF series halogen signs.
- Continuous frame design provides fast installation with less mounting legs and less tethers.

Construction

Extremely durable and corrosion-resistant sign design requires minimal maintenance.

- Non-ferrous aluminum frame and mounting
- Stainless-steel hardware
- Impact resistant modified acrylic legend panels
- Retroreflective sheeting

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

		Style 2: 3-Step (4.8-6.6A)			Style 3: 5-Step (2.8-6.6A)			Style 5: 1-Step (5.5A)		
Size	**Module**	**Isolation Transformer**	**Power Factor**	**VA**	**Isolation Transformer**	**Power Factor**	**VA**	**Isolation Transformer**	**Power Factor**	**VA**
1	1	100 W	0.90	73	100 W	0.90	73	100 W	0.91	61
1	2	100 W	0.91	79	150 W	0.87	86	100 W	0.91	67
1	3	100 W	0.91	86	150 W	0.91	90	100 W	0.92	75
1	4	100 W	0.90	75	150 W	0.87	82	100 W	0.91	64
2	1	100 W	0.91	77	100 W	0.91	77	100 W	0.91	65
2	2	100 W	0.91	86	150 W	0.91	90	100 W	0.92	75
2	3	100 W	0.91	82	150 W	0.91	84	100 W	0.92	70
2	4	100 W	0.91	93	300 W	0.89	98	100 W	0.92	80
3	1	100 W	0.91	79	150 W	0.87	86	100 W	0.91	67
3	2	100 W	0.90	75	150 W	0.87	82	100 W	0.91	64
3	3	100 W	0.91	93	300 W	0.89	98	100 W	0.92	80
3	4	150 W	0.92	111	300 W	0.88	124	150 W	0.92	98
4	1	100 W	0.91	79	150 W	0.87	86	100 W	0.91	67
5	1	100 W	0.91	79	150 W	0.87	86	100 W	0.91	67

Note:

- VA values represent the actual load imposed on the regulator and accounts for power factor and isolation transformer load. The VA load and power factor is measured on the primary side of the isolation transformer.

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LED Retrofit Kits for Halogen and Fluorescent Signs

Application

A retrofit kit is available to convert any existing ADB Safegate AGSF-H tungsten-halogen or AGSF-F 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.

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

A 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

A LED sign provides greatly reduced energy consumption compared to halogen signs. For more information, see Table 1: LED and Halogen Sign Comparison Table.

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 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 Retrofit Kit

Size Modules

94A0628/ □□0

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

Modules
1 = 1 Module
2 = 2 Modules
3 = 3 Modules
4 = 4 Modules

Note: Retrofit kits for ADB Safegate AGSF-H tungsten-halogen and AGSF-F fluorescent signs only.

Table 1: LED and Halogen Sign Comparison Table

Size	Modules	Style	Transformer	VA	Energy Savings
1	4	Style 3 (5-step)	100 W (LED) 500 W (Halogen)	75 (LED) 233 (Halogen)	70%
2	3	Style 2 (3-step)	100 W (LED) 500 W (Halogen)	79 (LED) 340 (Halogen)	77%
3	3	Style 2 (3-step)	150 W (LED) 500 W (Halogen)	94 (LED) 340 (Halogen)	72%

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Sign Dimensions and Weights

Height - Inches (Centimeters)			
Size	**Sign Face Height**	**Legend Height**	**Overall Mounting Height**
1	18 (45.7)	12 (30.5)	27.3 (69.3)
2	24 (61)	15 (38.1)	33.3 (84.5)
3	30 (76.2)	18 (45.7)	39.3 (99.8)
4	48 (122)	40 (101.6)	55.7 (141.5)
5	30 (76.2)	25 (63.5)	39.3 (99.8)

Length - Inches (Centimeters)				
Size	**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	**1 Module**	**2 Module**	**3 Module**	**4 Module**
1	34 x 33 x 13 (87 x 84 x 33)	34 x 65 x 13 (87 x 165 x 33)	34 x 92 x 13 (87 x 234 x 33)	34 x 130 x 13 (87 x 330 x 33)
2	40 x 40 x 13 (102 x 102 x 33)	40 x 78 x 13 (102 x 198 x 33)	40 x 118 x 13 (102 x 300 x 33)	40 x 156 x 13 (102 x 396 x 33)
3	46 x 46 x 13 (117 x 117 x 33)	46 x 92 x 13 (117 x 234 x 33)	46 x 138 x 13 (117 x 351 x 33)	46 x 184 x 13 (117 x 467 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)								
	Mode 2				**Mode 3**			
Size	**1 Module**	**2 Module**	**3 Module**	**4 Module**	**1 Module**	**2 Module**	**3 Module**	**4 Module**
1	46 (21)	78 (35)	115 (52)	169 (77)	50 (23)	94 (43)	126 (57)	183 (83)
2	71 (32)	104 (47)	153 (70)	220 (100)	79 (36)	117 (53)	172 (78)	244 (111)
3	81 (37)	131 (60)	199 (90)	252 (114)	89 (40)	144 (65)	218 (99)	276 (125)
4	122 (56)	N/A	N/A	N/A	132 (60)	N/A	N/A	N/A
5	81 (37)	N/A	N/A	N/A	89 (40)	N/A	N/A	N/A

Note:

- Sign depth is 9.4 in (23.9 cm). See www.adbsafegate.com for additional installation information.
- Sign face height and legend height are specified as the FAA minimum requirements. Actual heights may vary within allowable tolerances.

AGSF-L

Ordering Code

Type
Size
Modules
Style
Face
Total Number of Panels
Fixed Digit
Power
Tether

S □□□ - □□□□□□1

Type
R = Standard (Mode 2)
S = High-Wind (Mode 3)

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

Modules
1 = 1 Module
2 = 2 Modules
3 = 3 Modules
4 = 4 Modules

Style
7 = Style 2, Style 3, 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.

Fixed Digit
3 = 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 switch[1]
4 = Power through side with ON/OFF switch[1]
5 = Customer-provided entry without ON/OFF switch[1,2]
6 = Customer-provided entry with ON/OFF switch[1,2]
9 = Power through bottom without ON/OFF switch[1]
A = Power through bottom with ON/OFF switch[1]

Tether
0 = No tether[1]
1 = One tether, one end of sign
2 = Two tethers, one on each end of sign
3 = Tether on all legs

Note: Customer to provide legend information and power connection side. It is important to match power cord exit location with legend side.

Legend Panel Replacement

Size
Modules
Panel Type
Sign Type

44A6084/ □□□□

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

Modules
1 = 1 Module
2 = 2 Modules

Panel Type
1 = With legend (retroreflective)
2 = Black

Sign Type
0 = Mode 2 and Mode 3

Legend Panel Divider

Size
Paint Coverage
Paint Color

44A6173/ □□□

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

Paint Coverage
A = Solid black[3]
C = Clear front (paint back side only)

Paint Color
R = Red
Y = Yellow
B = Black[3]

LED Light Engine Tester

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.

LED Light Engine Tester Ordering Code

LED Light Engine Tester	44A7264/1

1 Not ETL certified.
2 Cord set coiled up inside the sign. Customer provides entry.
3 For paint coverage (Solid black), paint color (Black) must be selected.