# SAMPLE SPECIFICATION SIGNATURE SERIES LED L-858(L) SIGN

*Note: Modify the items in italics according to your specific job requirements.*

# ITEM L-125 INSTALLATION OF LED L-858(L) SIGNS

## DESCRIPTION

125-1.1 This item shall consist of furnishing and installing the LED L-858(L) guidance signs in accordance with these specifications.

This item shall also include all wire and cable connections, the furnishing and installing of all necessary conduits and fittings and all necessary mounting structures. It shall also include the testing of the installation and all incidentals necessary to place the signs in operation as completed units to the satisfaction of the Engineer.

## EQUIPMENT AND MATERIALS

125-2.1 L-858(L). The LED L-858(L) signs shall conform to the requirements FAA Advisory Circular 150/5345-44 (current edition) “Specification for Runway and Taxiway Signs” and FAA LED “Engineering Brief No. 67” (current edition). The signs shall be ETL certified. The L-858(L) signs shall be as manufactured by AGM Airfield Guidancesign Manufacturers, Inc. ([www.agmsigns.com](http://www.agmsigns.com/)) or approved equal.

125-2.2 EQUIPMENT SUPPLIED. LED L-858(L) signs shall be supplied in the quantities specified in the plans *{with one (1) pre-attached tether per module}*. Each lot shipment shall include one Instruction Manual. The manufacturer shall also have a downloadable electronic version of the manual available on their web site.

125-2.3 L-858(L) SIGN. The Type L-858(L)R, L-858(L)Y, and L-858(L)L signs shall be

*{Size 1- 18 in. legend panel with a 12 in. legend.; Size 2- 24 in. legend panel with a 15 in. legend; Size 3- 30 in. legend panel with an 18 in. legend}.* Type L-858(L)B signs shall be *{Size 4- 48 in. legend panel with a 40 in. legend; Size 5- 30 in. legend panel with a 25 in. legend.}*

To ensure reduced energy and maintenance requirements, the L-858(L) sign light source shall utilize individual Light Emitting Diode (LED) light bar assemblies.

All FAA L-858 signs must maintain constant brightness at all CCR step settings. The sign shall impose a low load (VA) on 3-step, 5-step or 5.5A (1-step) constant current regulators using an internal LED power supply circuit contained on one module located inside the upper portion of the sign. To minimize spare parts requirements, the internal LED power supply circuit shall be the same for 3-step, 5-step or 5.5A (1-step) 50/60Hz series circuits. In addition, the design shall utilize only one PCB part number for all sign variations. To maximize maintenance personnel safety, there shall be no more than

240Vdc at any point inside the sign. In addition, the LED power supply circuit shall output a regulated DC current of 350mA maximum. *{The sign shall include an On/Off switch that bypasses the isolation transformer secondary current during maintenance activities.}* Isolation transformer secondary power wiring shall be routed *{through the sign leg} {through the side of the sign}*. The internal LED power supply circuit shall not require field calibration. The LED L-858(L) sign shall have an input Power Factor >0.91 to 0.96 depending on the sign size and number of modules as measured on the primary of the L-830 or L-831 isolation transformer. Both the fixture input maximum VA load and the maximum CCR load (which includes isolation transformer losses) shall be shown on the catalog sheet included with the submittal documents.

The electrical design of the sign shall insure conformance with FAA AC 150/5345-44, par. 3.2.5.7. This paragraph states: “The failure of any light source within a sign must not result in a potential miscommunication of the intended message to a pilot. If the failure of an internal lamp(s) in a sign causes a panel or any section of a panel to be dark or have an average luminance less than the minimum required in paragraph 3.2.5.6, sign operation must be automatically discontinued.”

To ensure maximum pilot visibility, the sign shall have either a flat or rounded, vertical or convex face and shall have illumination uniformity exceeding the FAA specification. The measured points on the panel are defined in AC 150/5345-44 par. 4.1.1.3.

Measurements must be made on a 3 in. grid over the entire face of the sign, with no measurement closer than 3 in. to the sign frame. The average of all measurements must be between 10 and 30 foot-Lamberts. The ratio between maximum and minimum luminance over the whole sign face must not exceed 5:1. Adjacent grid measurements must not exceed a 1.5:1 luminance ratio.

The sign shall not require the use of panel dividers on continuous messages. The sign shall use a bolted structure to provide for easy field repair/refurbishment and to reduce repair costs.

The signs shall be Mode 2 – able to withstand wind loads of 200 mph (322 kph) minimum. The sign floor flange shall have only two mounting holes to minimize installation cost and to use less anchor bolts. Floor Flanges shall be the same for use with Mode 2 and Mode 3 signs, and shall have 2 mounting holes.

*{Note: Flat panel Mode 3 signs are available to withstand wind loads of 300 mph (483 kph). Mode 3 is applicable only to special circumstances where the sign location poses an increased safety risk arising from jet blast.}*

## CONSTRUCTION METHODS

125-3.1 PLACING THE LED L-858(L) SIGNS. The contractor shall furnish and install each L-858(L) sign as specified in the proposal and shown in the plans. The LED L- 858(L) shall be mounted on *{concrete pads}* at the location shown on the plans. The sign

mounting surface must be flat and level to ensure that there are no undue stresses on sign panels.

125-3.2 TESTS. The sign system shall be fully tested by continuous operation for not less than 24 hours as a completed system prior to acceptance. The test shall include operating the constant current regulator *{in each step for a 3-step or 5-step circuit}* **or** *{on and off for a dedicated 5.5A circuit}* not less than 10 times at the beginning and end of the 24-hour test.

## METHOD OF MEASUREMENT

125-4.1 MEASUREMENT. The quantity of lights to be paid for under this item shall be for the quantity of LED L-858(L) signs (with tether) as shown on the plans and one Instruction Manual (per lot) installed and accepted as completed units, in place, ready for operation.

## BASIS FOR PAYMENT

125-5.1 PAYMENT. Payment will be made at the contract unit price for the completed total quantity of LED L-858(L) signs installed, in place by the Contractor, and accepted by the Engineer. This price shall be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

Payment will be made under:

Item L-125-5.1 LED L-858(L) system, in Place—per each

END OF ITEM L-125