LED PAPI - SAMPLE SPECIFICATION

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

## ITEM L-125 INSTALLATION OF LED PRECISION APPROACH PATH INDICATOR DESCRIPTION

125-1.1 This item shall consist of furnishing and installing the LED Precision Approach Path Indicator (PAPI) 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 LED PAPI light units in operation as completed units to the satisfaction of the Engineer.

## EQUIPMENT AND MATERIALS

125-2.1 PAPI. The LED PAPI shall conform to the requirements of FAA Advisory Circular 150/ 5345-28 (latest revision), “Precision Approach Path Indicator Systems.” The LED PAPI shall be ETL certified. The LED PAPI shall be as manufactured by AIRPORT LIGHTING COMPANY ([www.airportlightingcompany.com](http://www.airportlightingcompany.com/)) or approved equal.

125-2.2 EQUIPMENT SUPPLIED. The LED PAPI system shall consist of the following classifications:

1. Type.

*{L-880(L) - System consisting of 4 Light Units*

# *or*

*L-881(L) - System consisting of 2 Light Units}*

1. Style.

*{Style A - Voltage powered*

# *or*

*Style B - Airfield series circuit powered}*

1. Class.

Class II - Operation down to -67F (-55C)

The system shall also include an Interconnection Cable Kit and one Instruction Manual (per system). The manufacturer shall also have a downloadable electronic version of the manual available on their web site

## 125-2.3 LED PAPI LIGHT UNIT

To ensure reduced energy consumption and reduced maintenance requirements, each PAPI Light Unit shall use a Light Emitting Diode (LED) assembly. To maximize optical efficiency, the optical system shall consist of a sealed optical chamber. The LED assembly and tilt sense circuitry shall be easily replaceable without requiring Light Unit re-calibration.

The optical lens shall be hardened against sandblasting and kept free of dew and frost by redundant digitally controlled heating elements.

The average intensity in red light will be at least 15,000 Cd for a horizontal beam spread of -6° to +6° and a vertical angle of 3.5° below transition. The transition sector will not exceed 3 minutes of arc over the full beam width.

Each Light Unit shall include a control board with associated tilt sensor electronics. The Light Unit shall have a visual display on the exterior that shows the actual Light Unit angle. The visual display shall also have the capability to display the horizontal (zero) setting of the Light Unit. Tilt sensors containing mercury shall not be used.

Each Light Unit shall be constructed as follows:

The Light Unit shall be made from folded aluminum sheet fully protected against corrosion. It shall be fully weatherproof. For ease of alignment, the PAPI Light Unit shall be mounted using only three mounting legs. Precision elevation adjustment shall be possible in less than 10 minutes per unit, making use of the visual display incorporated into each Light Unit.

*{125-2.4 STYLE A SYSTEM REQUIREMENTS. The Light Units shall not require a separate Master Control Cabinet. Input power to the Primary light unit shall be 100-240 VAC, 50/60Hz. For any system configuration, the input power required by the PAPI shall be 300 VA maximum. No external Master enclosure shall be required.*

*The intensity of the PAPI system shall be automatically selected (to high intensity during the day and low intensity at night) using a photocell connected to the Primary light unit.*

*{Powered from a continuous 50/60 Hz AC voltage source. Provides On/Off control through current sensing of the runway series circuit during nighttime operations. During daytime, light units are activated at the 100% step via control from the photocell (current sensing input is not used). Nighttime intensity is automatically set to 5% or 20% (field selectable).}*

*{Powered from a continuous 50/60 Hz AC voltage source. Provides On/Off control through current sensing of the runway series circuit. Turns on the light units anytime (Day or Night) when current greater than 2.8 A is present in the associated series circuit. When On, light units are activated at the 100% step via control from the photocell during daytime. Nighttime intensity is automatically set to 5% or 20% (field selectable).*

# *or*

*{125-2.4 STYLE B SYSTEM REQUIREMENTS. The Light Units shall be powered via the [3-step, 6,6A]* ***or*** *[5-step, 6.6A]* ***or*** *[5-step, 20A] airfield series circuit. Each LED PAPI Light Unit shall require only one [6.6A/6.6A]* ***or*** *[20A, 6.6A] 200W (maximum) isolation transformer.}*

## CONSTRUCTION METHODS

125-3.1 PLACING THE PAPI LIGHTS. The contractor shall furnish and install the LED PAPI system as specified in the proposal and shown in the plans. The LED PAPI shall be mounted *{on a concrete base}* at the location shown on the plans. The LED PAPI shall be vertically aligned according to the requirements in the plans using the aiming procedures detailed by the manufacturer. The tilt sensor shall be set on all Single Channel PAPI Light Units according to the manufacturer’s instructions.

125-3.2 TESTS. The 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 the functioning of each intensity control in both Remote and Local 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 one LED PAPI system, one Interconnection Cable Kit and one Instruction Manual 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 LED PAPI system 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 PAPI system, in Place—per each

END OF ITEM L-125