

# APPROACH LIGHTING

## PAPI-SC

### Single Channel Precision Approach Path Indicator

#### SINGLE CHANNEL



#### Compliance with Standards

**FAA:** L-880 / L-881 AC 150/5345-28 (Current Edition). ETL Certified.

**ICAO:** Annex 14, Vol. 1, para. 5.3.5.23 to 5.3.5.45

#### Uses

The PAPI system uses a one light channel unit to provide the pilot precise visual information, enabling the approach procedure to be performed with the utmost accuracy and safety.

The Type L-880 PAPI system consists of four light units located at the side of the runway adjacent to the origin of the glide path. The nominal glide slope angle is midway between the angular settings of the central pair of the four units. If an aircraft is on the correct approach path, the pilot will see two red and two white light indicators. If the aircraft approach is too high, an increased number of white light indicators will be seen. If the approach is too low, the pilot will note an increased number of red light indicators.

The Type L-881 PAPI system is identical to the L-880, except only two light units (instead of four) are used. The nominal glide slope is midway between the angular settings of the two units, and when the pilot is on or close to the correct approach path, the unit nearest the runway will be seen as red and the other unit as white.

The Style A system is for use with an AC voltage input. The Style B system is for use on 6.6 A or 20 A series circuits. An electronic in-clinometer assembly, which is a mercury-free product, is provided on each PAPI unit to de-energize all light units if the optical pattern of any light unit is raised between 0.5° and 1.0° or lowered between 0.25° and 0.5° with respect to the setting angle of the light unit.

#### Features

- Each PAPI light unit uses only three 105 W, 6.6 A lamps. These are the same lamps as used in F-Range in-pavement lights, decreasing spare parts requirements
- Lamp wattage is 315 W total, 21% less than traditional light units that use two 200 W lamps and 48% less than traditional light units that use three 200 W lamps.
- Very low wind resistance in the landing direction due to the light unit's very small shape
- One optical channel consisting of only 2 lenses and 1 filter provides a very sharp transition from red to white never exceeding three minutes of arc over the full beam width

- A unique digital display indicating the vertical angle is included in each unit. It eliminates the need to manually use an aiming device for routine verification of vertical angle setting, minimizing maintenance time. It also eliminates the need to use a separate aiming device during initial installation.
- Lenses protected from sandblast by a hardened front glass shield
- Long focal length makes adjustment in elevation easy, accurate and stable
- A tilt indicator and lamp failed indicators can be read from outside the PAPI unit without removing the top cover. This also allows quick troubleshooting, minimizing the maintenance effort needed to determine which light unit is tilted. The horizontal angle can also be displayed.
- Stable mounting on just 2 mounting legs reduces installation cost and is much easier to level compared to 3 or 4 leg light units
- Reduced maintenance. The unit is fully sealed and remains clean inside. Lamp, front glass, and red filter replacement does not require any tools.
- Colorimetric conformity maintained over the whole width of the red beam
- No water can accumulate on the cover, so reflections that could constitute a false optical signal are eliminated
- Use of only aluminum, stainless steel hardware and optical glass provide a high degree of corrosion resistance. For extreme environmental conditions, an optional stainless steel housing is available.
- For Style A systems, a photoelectric control on the Master control cabinet automatically provides full intensity during the day and a reduced intensity (5% or 20% of full intensity) at night. Both the full and reduced intensity light level can be field adjusted. A circuit breaker is provided to permit the input power to be de-energized for field maintenance.
- Only one PAPI light unit assembly is used on either a Style A or Style B system, minimizing spare part requirements
- Fixture uses a black light box with an international orange cover and stainless steel hardware.
- Operating temperature range -67 to +131 °F (-55 to +55 °C).

# APPROACH LIGHTING

## PAPI-SC

### Single Channel PAPI Ordering Code P A P □ / □ □ □

#### Style

A = PAPI A (Voltage powered)<sup>1,2</sup>

B = PAPI B (Current powered)

#### Type

2 = L-881 (2 Box)

4 = L-880 (4 Box)

#### Housing

0 = Aluminum Light Units (Standard)

1 = 316 Stainless Steel<sup>3</sup>

#### Interlock

0 = Without Interlock (PAPI A or B)

1 = With Interlock (PAPI A Only)<sup>4</sup>

#### Notes

- 1 L-881 input voltage is 208/220/240 VAC. L-880 input voltage is 240 VAC only.
- 2 Not ETL certified configuration.
- 3 For both the Style A and Style B PAPI, the light unit housing is stainless steel. For the Style A PAPI, the control box housing is also stainless steel.
- 4 Available only with the PAPI A. Interlock Relay Option provides ON/OFF control through current sensing of the runway series circuit during nighttime operations. During daytime, the PAPI is activated at the 100% step.

### Single Channel PAPI EMT Kit 9 4 A 0 6 1 6 / □

#### Type

2 = L-881 (2 Box)

4 = L-880 (4 Box)

### Single Channel PAPI Baffle Kit 9 4 A 0 5 7 0 / □ □ □

#### Type

2 = L-881 (2 Box)

4 = L-880 (4 Box)

#### Primary Obstruction Cut-Off (Left or Right Side)

1 = 0.0 to 3.3 Degrees

2 = 3.1 to 6.4 Degrees

3 = 6.3 to 10.0 Degrees

#### Secondary Obstruction Cut-Off

0 = No Secondary Obstruction

1 = 0.0 to 3.3 Degrees

2 = 3.1 to 6.4 Degrees

3 = 6.3 to 10.0 Degrees

#### Notes

- The Single Channel PAPI Baffle allows airports to modify the horizontal light beam coverage of the PAPI unit for obstacle avoidance in the approach area. See Service Bulletin ALN152 for field installation details.
- Cut-Off angle is the amount of light reduced from a full width beam of 10 degrees. Kit includes baffles for all light units.
- Baffles are interchangeable and can be installed to obstruct PAPI light on either LEFT or RIGHT side.

### Packaging

In cardboard box:

25.6 × 13 × 40.2 in (65 × 33 × 102 cm)

Net Weight:

44lb (20kg)

Gross Weight:

46lb (21kg)

### Installation

It is recommended that each light unit is installed on a level concrete foundation. Special care should be taken if the subsoil is known to be unstable.

The PAPI light units are installed using height adjustable mounting legs assembled with 2-inch EMT, frangible couplings, and a mounting flanges secured on the concrete foundation.



Fig. 1 Style A L-881 (2 Box) PAPI System

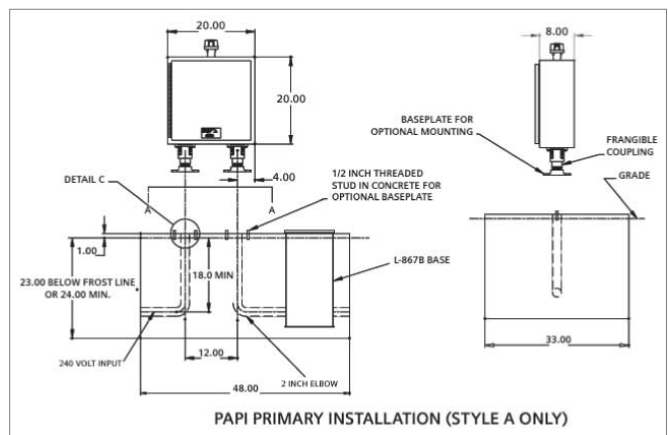


Fig. 2 Power Control Unit Installation (Style A Only)

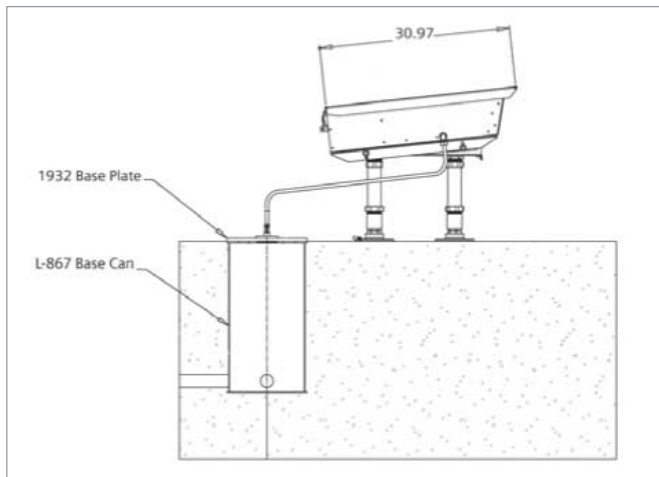


Fig. 3 Light Unit Installation

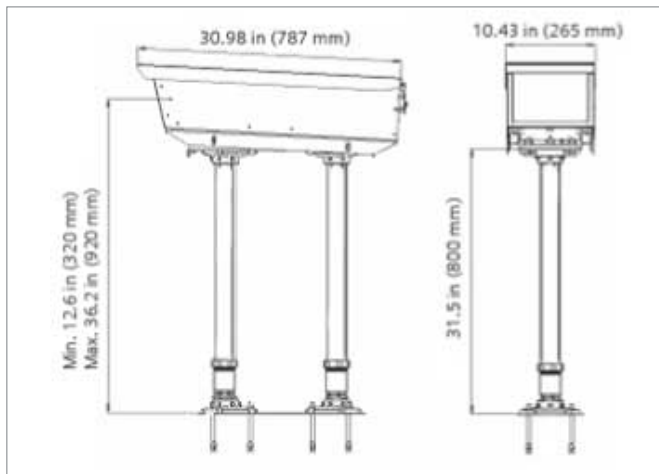


Fig. 4 Light Unit Dimensions

### Electrical Supply

Each Type A PAPI system is powered from a Control box. Each Type B PAPI light unit is powered with 6.6 A maximum via a 6.6A/6.6 A or 20 A/6.6 A 300 W isolation transformer. A field splice kit is supplied with each light unit to provide for external electrical connections between PAPI system components.

Style A <sup>1</sup>	
Input Voltage: 240 VAC, $\pm 10\%$ , 50/60 Hz L-880 (4-box) 3-lamps/light unit	1,700 VA max. <sup>2</sup>
Input Voltage: 208/220/240 VAC, $\pm 10\%$ , 50/60 Hz L-881 (2-box) 3-lamps/light unit	1,612 VA max. <sup>3</sup>
Style B <sup>4</sup>	
Three Lamps – 6.6 A through one 300 W isolation transformer (each light unit)	
L-880 (4-Box) – Total CCR Load:	1,448 VA max.
L-881 (2-Box) – Total CCR Load:	724 VA max.

#### Notes

- <sup>1</sup> As seen at input of Primary PAPI.
- <sup>2</sup> Limit on distance from Primary to first light unit is 30 ft (9.1 m).
- <sup>3</sup> Limit on distance from Primary to first light unit is 150 ft (45.7 m).
- <sup>4</sup> VA calculation includes PAPI light units and isolation transformers.