

## AIRSIDE SERVICES

# Mobile PAC<sup>2</sup> V5

## Photometric Airfield Calibration

The PAC<sup>2</sup>, by FB Technology, is a leading photometric airfield calibration system designed to provide airport maintenance staff with reliable, accurate photometric test data. This highly precise data allows staff to verify compliance to ICAO or FAA standards for runway, taxiway and approach lights, including inset and elevated.

### Compliance with Standards

Annex 14, Volume I, recommends regular light intensity measurements of airfield lighting installations at least twice a year with a Civil Aviation Certified device. As of October 2003, airports have to submit a compliancy report of their installations against the ICAO standards. (Amendment n°5 to Annex 14). In recent years, almost all Civil Aviation Authorities recommend photometric testing up to once a month for runway lighting.

These standards formalize the photometric requirements for an airfield lighting preventive maintenance program. Light intensity has to be monitored regularly to ensure that it meets ICAO safety standards.

### Standards for Photometric Testing

- FAA: AC 150/5340-26 (Current Version) Paragraph 4.1.12, recommends monthly inspection.
- T/C: Transport Canada AC No. 302-010 provides guidance for photometric measurement of airfield lighting

### Standards for Minimum Airfield Lighting Photometric Light Output

- ICAO Annex 14 deems a light unserviceable if main beam average is less than 50%
- Transport Canada AC No. 302-008 deems lights ineffective when light output is less than 50%
- Canada TP312 states a light is considered failed when average intensity falls below 50%
- FAA AC 150/5340-26 recommends use of a Mobile Photometric Measurement System to maintain the light output of 70% or greater at full intensity

### Optimize Maintenance Inventory

PAC is a mobile system for evaluating the light intensity of all inset and elevated lights. The test report provides the candela value of each light and identifies any defect requiring action to be taken. It also makes it possible to monitor lamp aging from previous runs so that all the results for a runway or taxiway can be compared.

This enables the airfield lighting department to plan its operations and manage its stocks as efficiently as possible. If the lamp is not defective although the system indicates a low intensity, the identification facility guides the search and thus optimizes maintenance operations.



*Mobile PAC can be used with any vehicle and installs easily with portable frame onto standard 2" trailer hitch.*



*PAC Light Sensor has sensors on front and back of the sensor strip requiring only a single test pass over the light fixtures cutting testing time by 50%.*



*PAC Mobile easily measures photometric data of Inpavement and runway elevated lights assuring compliance with FAA and ICAO standards.*

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### Operation of the PAC System

The system is installed on the back of any vehicle with a 2-inch trailer hitch. Measurements are made in real time as the vehicle travels over the lights at a speed up to 37 mph (60 km/h).

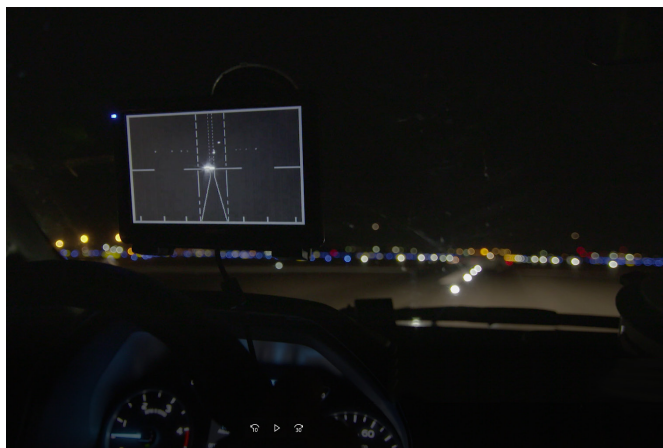
The luminous intensity detected by sensors placed in front and back of the sensors strip is uploaded into input/output modules that are networked to a programmable logical controller (PLC) installed inside the sensors strip.

The PLC allows for industrial grade data collection. Then the data are sent via Wi-Fi to a portable computer or tablet operated by the users inside the vehicle.

Up to 65,000 samples can be recorded for each light fixture with no limitation of number of fixtures (for a laptop computer with sufficient memory).

### Alignment Control

To ensure the best alignment, the driver looks at a video monitor fed by a camera fitted on the PAC sensors strip. Video images are sent to the monitor via Wi-Fi.



Real-time operator airfield fixture alignment using wifi video monitor mounted inside the vehicle

### Certification and Calibration

Each unit manufactured by FB Technology is calibrated using a NIST traceable reference light source for quality control. The PAC system has also been certified by the French Civil Aviation Technical Services (STAC) and the Italian Civil Aviation Authority (ENAC). In North America, the PAC system has been independently tested by Intertek to ensure accuracy and consistency.

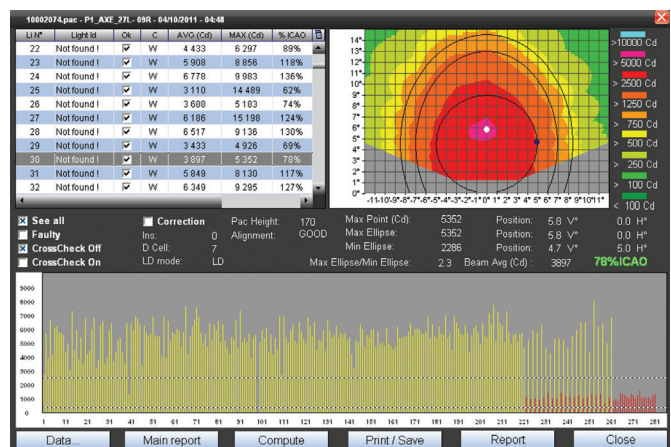
### Mobile PAC Equipment Overview

The system is supplied in a carrying case and includes:

1. The PAC sensors strip
2. The radar distance sensor
3. The PAC software installed on a laptop computer
4. Power supply cables - The battery cables connect to a power supply case, which connects to the sensor strip
5. Optional DGPS receiver and antenna



PAC sensors strip contains the PLC.



Typical report provided by the PAC system: Fitting Id., elevation, maximum and minimum average, isocandela diagram

### Operating Conditions

Operation by night: Yes  
Displacement speed: Up to 37 mph (60 km/h)  
Measurement range: Up to 30,000 candelas  
Weather condition: Dry or wet surface

### Warranty and Calibration

The system is supplied with a full 1-year warranty. After the warranty period, a maintenance contract is required to cover yearly calibration and software updates.



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### Installation

The system can be installed on any vehicle with a 2-inch hitch receiver. Customers can have this done by ADB SAFEGATE or they can do it themselves, in which case they must have the installation checked by an ADB SAFEGATE engineer. This can be done during the Training and Commissioning session.

The radar distance measuring device is connected to the sensors strip, and the sensors strip communicates via Wi-Fi to the laptop monitored by the operator inside the vehicle.



### Some references among our 100+ systems in operation worldwide

PAC Lab	
Belgium	Charleroi, Liège
China	Beijing Capital
Greece	Thessaloniki
France	Marseille
France / Switzerland / Germany	EuroAirport
Hong Kong	Chek Lap Kok
Kenya	Nairobi
Korea	Seoul Incheon
Lebanon	Beirut
Portugal	Lisboa, Faro, Porto, Acores
Singapore	Changi
Switzerland	Geneva
UK	Belfast

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PAC	
Belgium	Charleroi, Liège, Brussels
Cambodia	Phnom Penh
China	Beijing Capital, Changsha, Guangzhou, Shanghai, AGL contractor
Ecuat. Guinea	Montgomeyen
Finland	Helsinki, Rovaniemi, Oulu
France	Lyon St Exupery, Marseille, Nice, Paris Orly, Toulouse & two AGL contractors
Greece	Thessaloniki
Iceland	Keyflavik
India	AGL contractor
Ireland	Dublin, Cork, Shannon
Italy	Albenga, Bologna, Cuneo, Forli, Genova, Parma, Turino, Milan Malpensa, Milan Linate
Kenya	Nairobi
Lebanon	Beirut
Morocco	Casablanca, Marrakech, Oujda
Norway	Oslo Gardemoen and one AGL contractor
Romania	Bucarest
Sweden	Stockholm Arlanda, Goteborg/Malmö
Switzerland	Geneva
UK	Belfast and AGL contractor (ADB UK)
Korea	Seoul Incheon
Peru	CORPAC
Spain	AENA & three AGL contractors
UAE	AGL contractor
Hong Kong	Chek Lap Kok
Portugal	Lisboa
Singapore	Changi, Seletar
France / Switzerland / Germany	EuroAirport

Manufactured in Évry, France by FB Technology.



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Product specifications may be subject to change, and specifications listed here are not binding. Confirm current specifications at time of order.