SMF/AFM (Apron Floodlights Measurement)

Vehicle mounted system for Apron floodlighting photometric measurement

- **Apron floodlighting Measurement according to ICAO/ EASA/FAA recommendations**
- **Simultaneous horizontal and vertical (radial) measurement**
- **S-BAS GPS for accurate single point measurement position identification**
- **Automatic reporting of measurements (PDF)**
- **Measured data exportable for user purposes**
- **Apron LED lights measurement supported**

The SMF/AFM is the instrument designed and manufactured by Argos Ingegneria for the photometric measurement of Apron Floodlighting Systems with reference to ICAO/EASA/FAA recommendations.

SMF/AFM comes from the integration of the latest technologies with the consolidated experience of Argos Ingegneria in worldwide AGL automatic photometric measurement and can be considered an add-on feature of SMF/Mobile, as shown in the figure on the top.

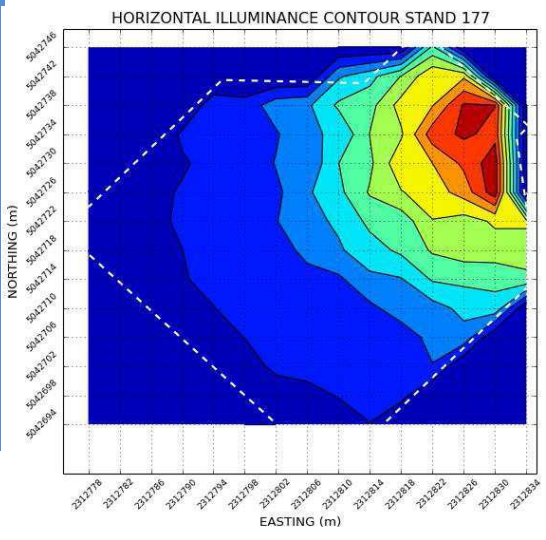
Should the instrument be requested only for illuminance apron measurement, a simplified configuration of SMF/Mobile will be supplied based on a shortest sensor bar (see the figure next here).

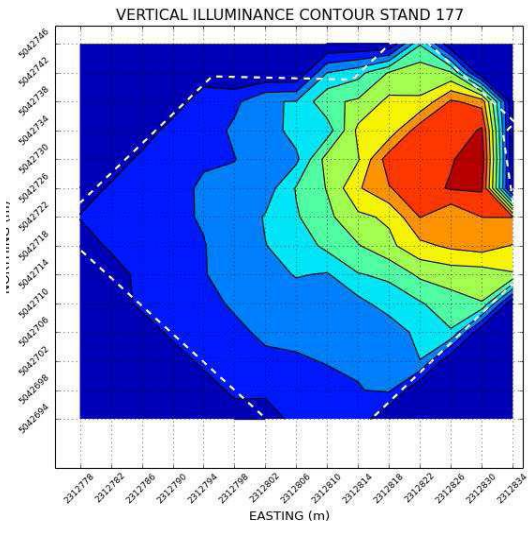
In accordance with regulations, the lighting survey of the aircraft apron provides for a measurement on the horizontal plane at a height of 0.2 m from the ground and one on the vertical plane, at a height of 2.0 m from the ground.

To carry out the measurement in a single run, a sensor bar is installed in horizontal position in front of the vehicle, while a 4 lux-meters array is installed on its roof to be compliant with measurement methods indicated by recommendations.

The Operator will drive the so equipped vehicle along the apron area, and then the stands. Each stand is divided in cells, each one typically 4 x 4 meters in size. During the scan of apron, system SW will verify that all the cells of each stand is correctly crossed by the vehicle.

At the end of the scan, the data samples are assigned to the relevant cell on the basis of data received from GPS system, and processed to determine the parameters of each stand. The electronics of SMF/AMC will allow to collect a large number of samples for a precise data analysis as well as to build accurate high resolution ISOLUX diagrams as stated in ICAO Aerodrome Design Manual Part Four - Edition 2021. At the end of service, a complete report will be issued.





DATABASE

The SMF/AMC system DB integrates and stores airport ACAD maps of Aprons , GPS Apron points position, measurement results, graphics tables, pictures and statistical data

REPORTING

The system provides a full and user configurable reporting capability in full compliance with ICAO/EASA/FAA graphics and data tables

DOCUMENTATION

SMF/AMC system comes with Operating & Maintenance Manual, Manufacturing Test Data Reports and Calibration certificates

TRAINING

A complete training course will cover deployment, operations and maintenance topics, allowing the customer to reach the full control of the system

DIAGNOSTIC

SMF/AMC features an automatic self- diagnostic subsystem to continuously check the instrument components

TECHNICAL SUPPORT

Argos technical support assists customers during the whole system lifetime

EFFICIENCY

System ready to be used in the field through:

- hand operated cart or
- standard vehicle without any permanent installation

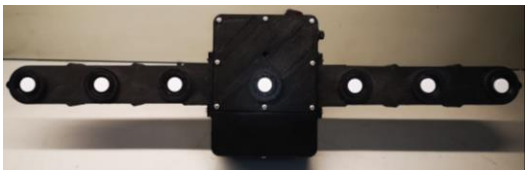
Rapid clearance from measurement areas for both solutions

SMF FAMILY COMPATIBILITY

SMF/AMC shares sensors technology, processing software and data base structure with Argos SMF photometric systems family

SMF/AFM Components & Software

SMF/AMC vertical and horizontal measuring comes with two array equipped with light intensity sensors. One head is installed in the position required for the horizontal illuminance measurement, the other one is installed in the position required for average vertical illuminance at 2 m height. Each head has its own data acquisition ADC electronics, power supply and interface to the system control box.



Horizontal Plane Measurement Array

Vertical Plane Measurement Array

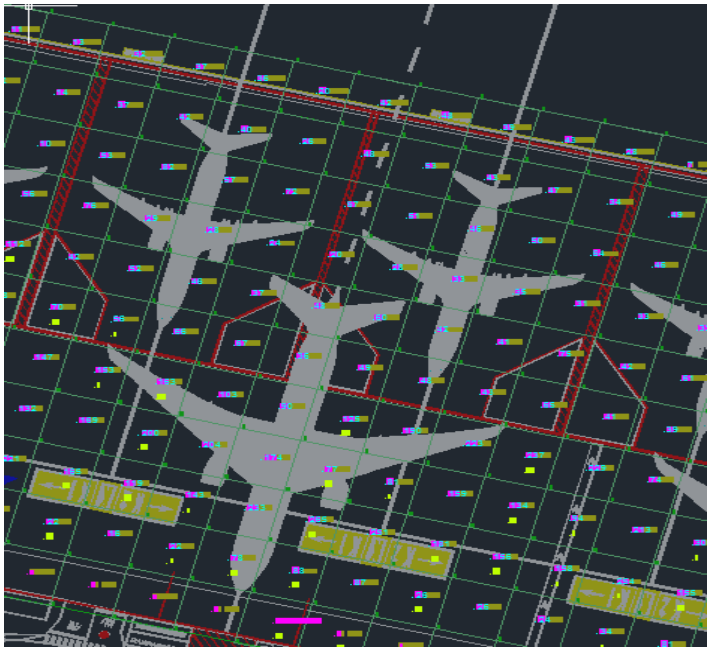
System Frame to fix the horizontal plane measurement array to the vehicle including mechanical adapters. Therefore system frame will be customized case by case according to the vehicle made available by the End User for the service.

DCB - Mobile Data Control Box, hosting the SBAS-GPS receiver station, connectors for horizontal and vertical sensor arrays, on board system laptop, system power supply and cable to vehicle 12 VDC power input.

On-board System Laptop running the system software under MS Windows 11 operating system, providing data processing and operator HMI. Laptop may be moved to the office area to analyze data, prepare, print and send measurements reports.

Specifications

- Vertical and horizontal plane measurement in a single run
- Intensity measurement (LUX) in both horizontal and vertical (radial) mode
- LED lights measurement
- SBAS-GPS receiver included
- Operating temperature: -20 to 55 °C
- Operating humidity : 95% no condensing
- Measuring Equipment Weight: < 10 Kg.
- ICAO and EASA compliance
- Accuracy : < 5 %
- Graphical and data tables reporting



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