

# SMF/M

## AGL Mobile Photometric Instrument Characteristics

### DATABASE

The system DB stores information of Airports, fixture's models and parameters, GPS light position, measurement results, graphics tables, pictures and statistical data

### REPORTING

The system provides a full and user configurable reporting capability such as:

- Isocandela Diagrams
- Maintenance and repair reports
- Lights performances bar charts
- ICAO/EASA/FAA compliance data tables

### DOCUMENTATION

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

### TRAINING

A complete training course will cover all the installation, operating, reporting and maintenance topics, allowing the customer to reach the full control of the system

### DIAGNOSTIC

SMF/M 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

Fast installation on commercial and industrial vehicles. Rapid clearance of runway with Stand-by and Resuming functions for interrupted measurements

### TURNKEY SOLUTIONS

Universal Mechanical Frame  
No special Vehicle required  
Automatic database filling procedure for light fixtures positioning and identification



**SMF/M standard configuration**

SMF/M is a world class system for the photometric measurement of Airfield Ground Lighting system designed to operate under ICAO/EASA/FAA recommendations.



**Trailer configuration (SMF/MT)**

System is based on the latest technologies and features optoelectronic sensors for light and color detection, a SBAS GPS/ D-GPS GPS for accurate light position identification and real time image processors for daylight operations.

SMF/M is equipped with 17 LUX sensors distributed over the measurement bar in order to reach the best distance/resolution ratio with respect to light beam spread.

Both vehicle and trailer configuration support forward and backward measurement modes, as well as vertical bar set-up for fast measurement of inset and elevated transversal light arrays, such as stop-bars, threshold, end and approach.

- Light Measurement according to ICAO/ EASA/FAA recommendations
- Maximum, Average and Minimum light beam intensity, Elevation and Azimuth (TOE-IN) angles measurement
- Light Colour measurement according to CIE 1931 (ICAO Annex 14, 7<sup>th</sup> Ed. 2016)
- LED lights measurement supported
- Accurate SBAS GPS/D-GPS based light identification
- Measuring speed up to 70 Km/h
- Automatic user defined measurement reporting (PDF)
- Measured data exportable for user purposes
- Apron floodlighting measurement
- Installation compatible with any kind of vehicle
- Trailer configuration available (SMF/MT)
- Vertical bar set-up for transverse lights
- Indoor operations integrating the computer controlled turntable and software of SMF/L

For a safe and efficient driving, Operator is assisted by a monitor showing the relative position of the bar against the lights stream under measurement, while an acoustic tone will give an alert should the bar go close to borders of the allowed corridor. The high speed ADC electronics of SMF/M allow to collect a large number of samples and to build accurate high resolution ISOCANDELA diagrams.

The SMF/M system database allows to save measurement data sets of several airports. A powerful report generator is able to provide PDF tables, graphics and data according to selections defined by the user.

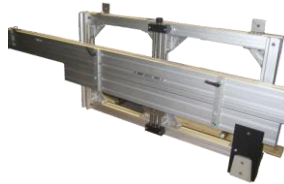


**Apron measurement set-up**



The measuring bar hosts 17 light intensity sensors, 1 CIE 1931 color sensor, 1 light position and range detection optoelectronic sensor (S2), 3 supports for the Wi-Fi camera. Bar is connected to DCB through the Master Cable.

The main system aluminum frame, with bidirectional sliding arm. The frame hosts the measurement bar and is fitted to the front side of hosting vehicle, or trailer, through a suitable mechanical interface. The system frame has a bar lift mechanism to set the height of the bar to the proper value according to measurement. The bar can be lifted up to 1 m height.



The high resolution odometer for accurate distance measurement. It's provided with a robust cable to be connected to DCB box.



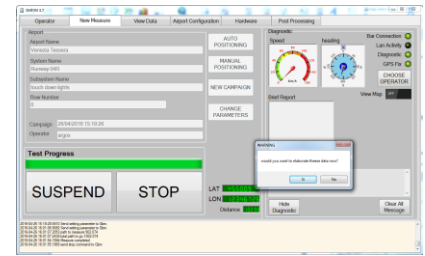
DCB - Mobile Data Control Box, hosting the embedded processing computer running the system software under MS Windows 10 operating system, the D-GPS receiver station, connectors to sensor bar, odometer, on board system touch-screen display, system power supply and cable to vehicle 12 VDC power input.



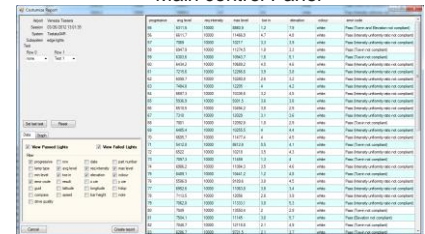
Driving Video Assistance system, made of Wi-Fi CCD camera and Wi-Fi connected on-board monitor. Wi-Fi camera is powered by the main sensor bar (12 VDC). It's provided with a separate antenna for the best communication with the on-board monitor.



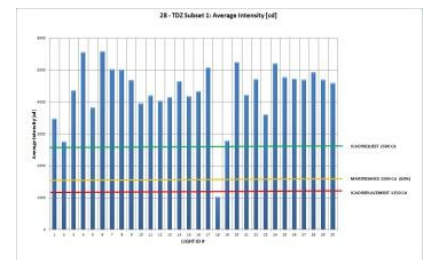
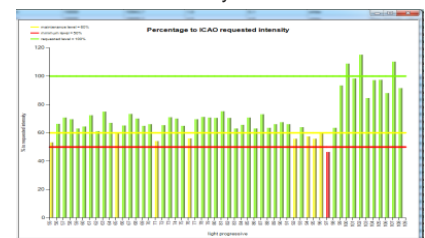
On-board System HMI through wide Touch Screen Tablet PC. Tablet PC may be moved to the office area to analyze data, prepare, print and send measurements reports.



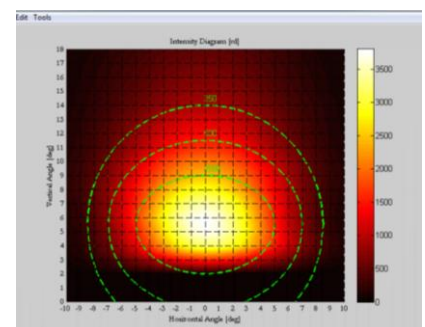
Main control Panel



Analytic data



Graphical data presentation



ISOCANDELA diagrams

## Specifications

- Measurement speed up to 70 Km/h
- Day and twilight operation available in option
- High accuracy odometer with resolution better than 2 mm
- 16 bit high speed A/D conversion
- SBAS/LAS GPS integrated receiver
- Sensitivity: 0.25 Lux
- Accuracy: < 5%
- Repeatability: < 5%
- Operating Temperature: -20°C / 55°C

## References

Italy, Bangladesh, Cameroun, China, Canada, Croatia, Denmark, Egypt, Estonia, Germany, Greece, Indonesia, Korea, Lithuania, Malta, Poland, Romania, Russian Federation, Senegal, Spain, Taiwan, Thailand, Turkey, U.A.E.

**Certifications:** ENAC (Italian Civil Aviation Authority) Certification according to ENAC APS-02 Technical Standard  
China Civil Aviation Authority Certification, Bureau Veritas, RINA