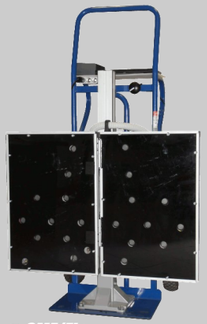
SMF/Fix Hand use Instrument

NEW

SMF/Fix is a brand new instrument created for performing ***outdoor or indoor*** measurements of airfield lighting fixtures. It is a hand use instrument that is able to reach infield lights that are not reachable by conventional mobile systems. It works without the requirement of a vehicle.



© SMF/Fix

SMF/Fix is easy to use as the operator is step-by-step assisted by the system software running on the on-board Tablet PC.

SMF/Fix can also test the photometric diagram and parameters of PAPI (Precision Approach Path Indicator) lights.

- **Light Measurement according to ICAO Annex 14 reference grid points**
- **Maximum, Average and Minimum beam intensity measurement**
- **Elevation and Azimuth angles measurement**
- **Light Colour measurement according to CIE 1931**
- **GPS SBAS based lights positioning**
- **Full automatic PDF reporting including lights position**

SMF/L Laboratory

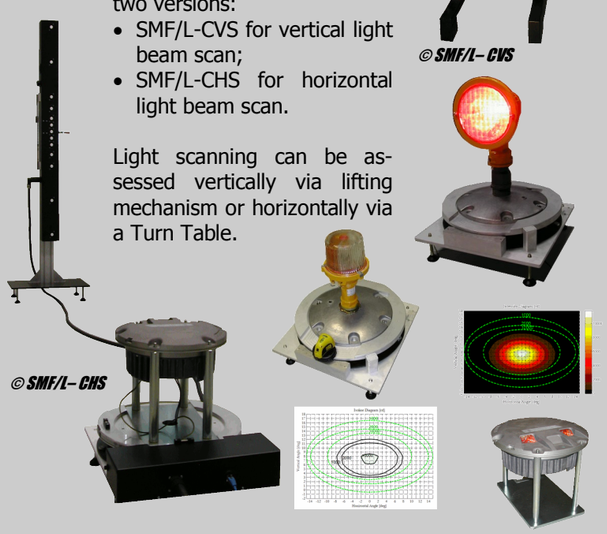
SMF/L - CHS and CVS

Lab systems have been introduced for ***indoor*** measurement of inset and elevated airfield lights according to ICAO Annex 14 requirements.

SMF/L is based on a 13 sensors bar and is offered in two versions:

- SMF/L-CVS for vertical light beam scan;
- SMF/L-CHS for horizontal light beam scan.

Light scanning can be assessed vertically via lifting mechanism or horizontally via a Turn Table.



© SMF/L-CVS

© SMF/L-CHS

SMF/Mobile

Patent RM2007A000099
ENAC - Italian CAA Certified

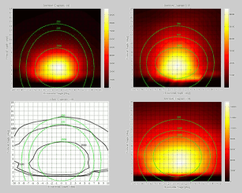
SMF/M is the fastest option to perform the measurement of the airfield lights while moving along runways and taxiways.
SMF/M can be easily installed on the front of any commercial vehicle suitable to operate in the airfields.

© SMF/Mobile

© SMF/Mobile

The bar of **SMF/M** includes 13 luxmeters, 1 colorimeter, high-speed and high-resolution electronics, a light source elevation/position detector aiming camera and GPS.
All communications are performed via LAN connection to system laptop.

- **Operating Speed up to 80 km/h**
- **High accuracy distance measuring**
- **GPS light identification**
- **LED lights supported**
- **1 colorimeter CIE 1931**
- **Accuracy : 5%**
- **PDF Reports**
- **Italian CAA Certification (ENAC APT-13A)**
- **Conforming ICAO Annex 14 recommendations**



SMF/PAPI

Patent RM2007A000679
ENAC - Italian CAA Certified

© SMF/PAPI

SMF/PAPI is a portable device able to determine via a fully automatic procedure all the alignment parameters of a ***PAPI*** unit. SMF/PAPI performs the measurements of elevation with the accuracy required by ICAO recommendations and can be used as a valid alternative to the flight-check.

SMF/PAPI is able to measure with an accuracy and precision better than +/-1' the following PAPI parameters:

- **Average transition elevation angle of single PAPI unit**
- **Average elevation angle (Glide Path) of the PAPI bar (A,B,C,D units)**
- **Horizontality of color transition of each beam**
- **Average horizontality of color transition of the PAPI unit**
- **Color transition divergence of the unit**
- **Color and intensity compliance according to ICAO Annex 14**
- **Aperture angle of the PAPI bar**
- **Photometric diagram of the unit**
- **Italian (ENAC APS-01), Spanish, Greek, Mexican CAA Certifications**

© SMF/PAPI

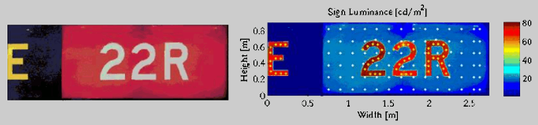
SMF/SIGN

SMF/SIGN is a new generation automatic system to perform fast and accurate measurement of any Taxiing Guidance Sign in the airfield or in laboratory. SMF/SIGN is based on a digital professional camera driven by an image analysis software running on a laptop.

© SMF/SIGN

Test output includes:

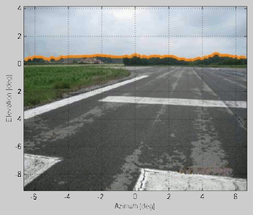
- False color image of the Sign luminance, with a resolution of 1 mm
- Color map image of ICAO admitted colors (white, red, yellow, black, green, orange), with 1 mm resolution
- Average Luminance for each Sign color, calculated both over the standard ICAO grid and on each pixel of the instrument camera
- Chromaticity for each color, on the grid and on each image pixel (CIE x, y)
- Luminance Ratio between adjacent points on the grid for each color.
- Luminance Ratio between maximum and minimum values points on the grid for each color.
- Luminance Ratio of red color to the white.
- Luminance factor (knowledge needed of the luminance of the illuminant standard source D65).
- Dimensional Ratio of characters fonts to the Sign.



SMF/ODS

NEW

SMF/ODS is a new device which operates teamed with SMF/PAPI to automatically determine the presence of obstacles penetrating the airport approach surface (AS). Operations are based on horizon scanning at the requested elevation, followed by the analysis of images taken in Short range (R ≤ 3000 m) or Long range (R ≤ 15000 m) and processed in real time.



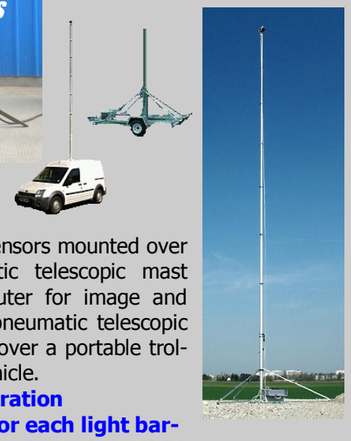
The image processing results is a curve that follows the contours of obstacles detected in the image, supplemented by additional information such as the elevation angle of obstacles and the azimuth angle with respect to the runway centerline axis or relative to a point of interest selected by the operator.
Obstacle detection resolution is 15 cm at a distance of 15 km.

© SMF/ODS

SMF/ALS

NEW

SMF/ALS is the new device able to evaluate Approach Lighting Systems (ALS) photometric performances, adopting a CCD sensor mounted on a dedicated aiming device and a special software routine.
SMF/ALS is able to detect the photometric parameters (light intensity, chromaticity and photometric diagrams) of simple and precision Approach Lighting Systems.
The instrument is composed by a video CCD camera, photometric and telemetric sensors mounted over a ruggedized pneumatic telescopic mast and a notebook computer for image and data elaboration. The pneumatic telescopic mast may be arranged over a portable trolley or mounted on a vehicle.



- **Single operator operation**
- **One to three tests for each light barrette (around 20 minutes) at night time**
- **Automatic test output for the photometric parameters of the barrette lights (intensity, chromaticity, photometric diagram).**

SMF/CLC

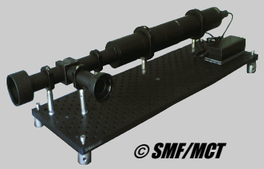
© SMF/CLC

SMF/CLC is the SMF/PAPI calibration tool based on a laser interferometric technology and on a dedicated software. SMF/CLC allows a systematic and repeatable calibration of the SMF/PAPI instrument.
Easy, automatic and fully documented procedure for customer direct use.

SMF/MCT

NEW

SMF/MCT is the SMF/Mobile calibration tool based on stable reference light source, a reference instrument and a special software. SMF/MCT allows a systematic and repeatable calibration of SMF/Mobile and SMF/L instruments.
Easy, automated and fully documented procedure for customer direct use.



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