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SMF/F

SMF/F – General description

The SMF/F is a self moving testing equipment able to be positioned in front of AGL fixtures, included also vertical signs, in order to perform the measurement of photometric parameters according to ICAO specifications.

SMF/F consists of a golf cart equipped with a special frame integrating all the devices necessary to allow a full automatic operation for the photometric measurement. The SMF/F system software running on the on-board PC will assist and drive the operator during each step of the measurement procedure.

Before to start the measurement session the operator will select the section of AGLS he wants to measure as defined during the AGL configuration phase allowed by the system software.

Once driven the cart in the proper position the operator will enter the ID of lamp and type of test and start the measurement.

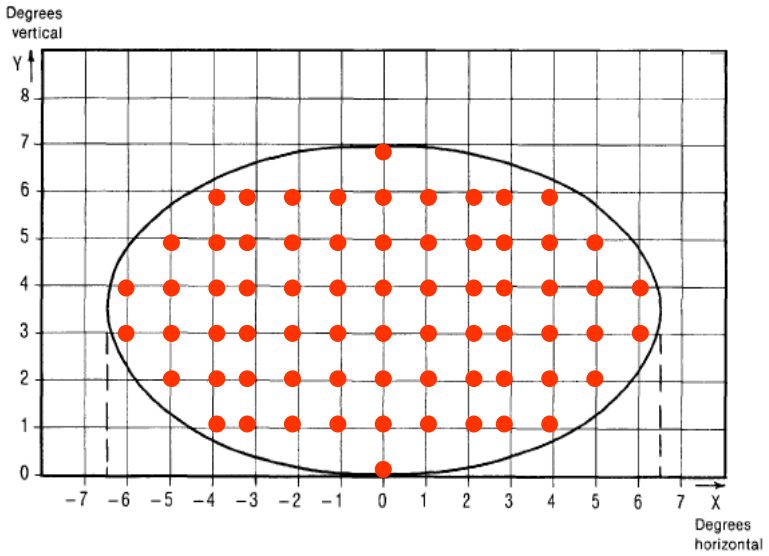
The results of measurement will be automatically inserted in the system data-base and displayed in the main system panel of application software.

SMF/F - OPERATION THEORY

The vertical scanning of lamp beam is performed according to the type of the lamp and ICAO recommendations.

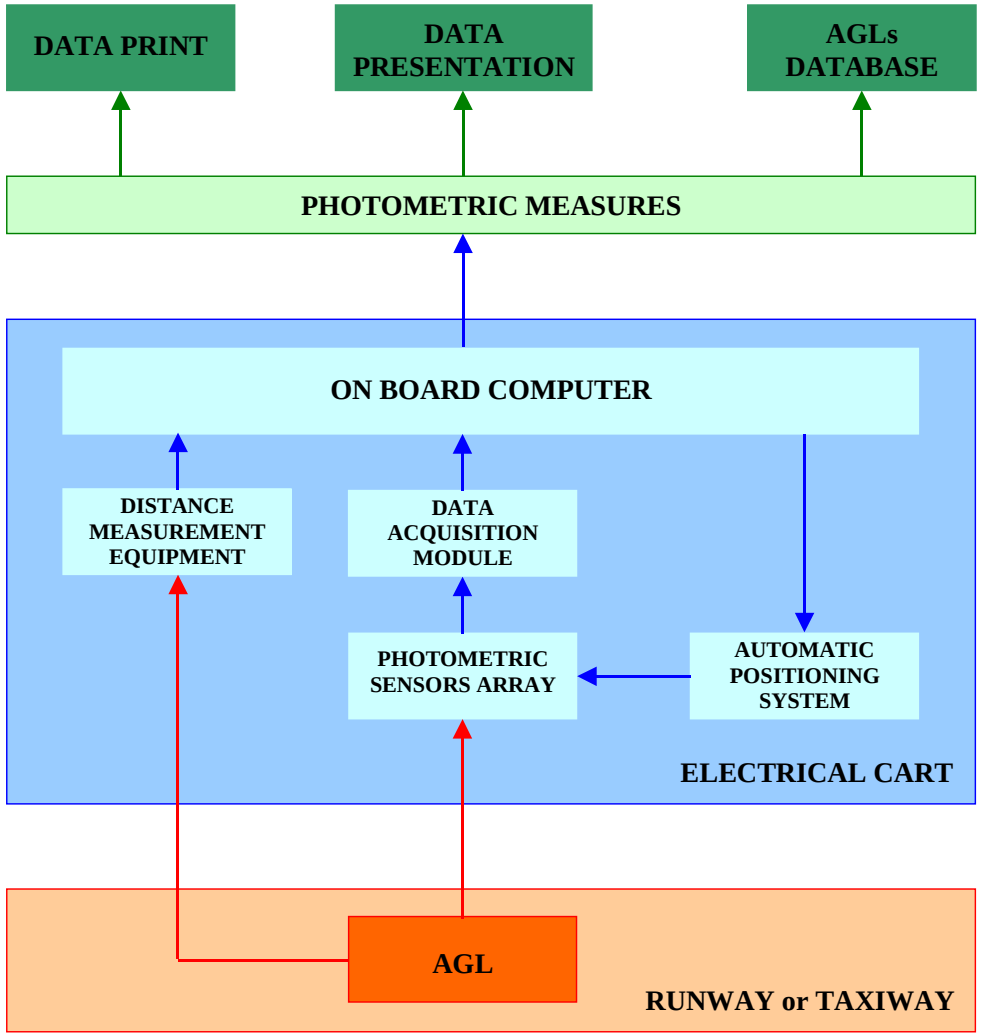
The bar is automatically moved at steps of 1° to accomplish the standard ICAO grid points (7 steps, see the figure below) or the extended grid (13 steps) in order to increase the sampling window.

In case of inset lamps the scanning starts from the ground while for the elevated ones a proper offset is applied according to the lamp type.



SMF/F – The 13 sensors array bar

SMF/F - Functional diagram



CPU	Mobile Intel Pentium IV, 2.0 GHz
RAM	256 Mb DDR RAM
HDD	160 Gb
Storage	DVD/CD-RW
Dispaly	15.1”
Comm	LAN/Modem 56 kbit/sec
OS	Windows XP Prof

SMF/F - Technical Description
Layout

On-board Mobile Computer

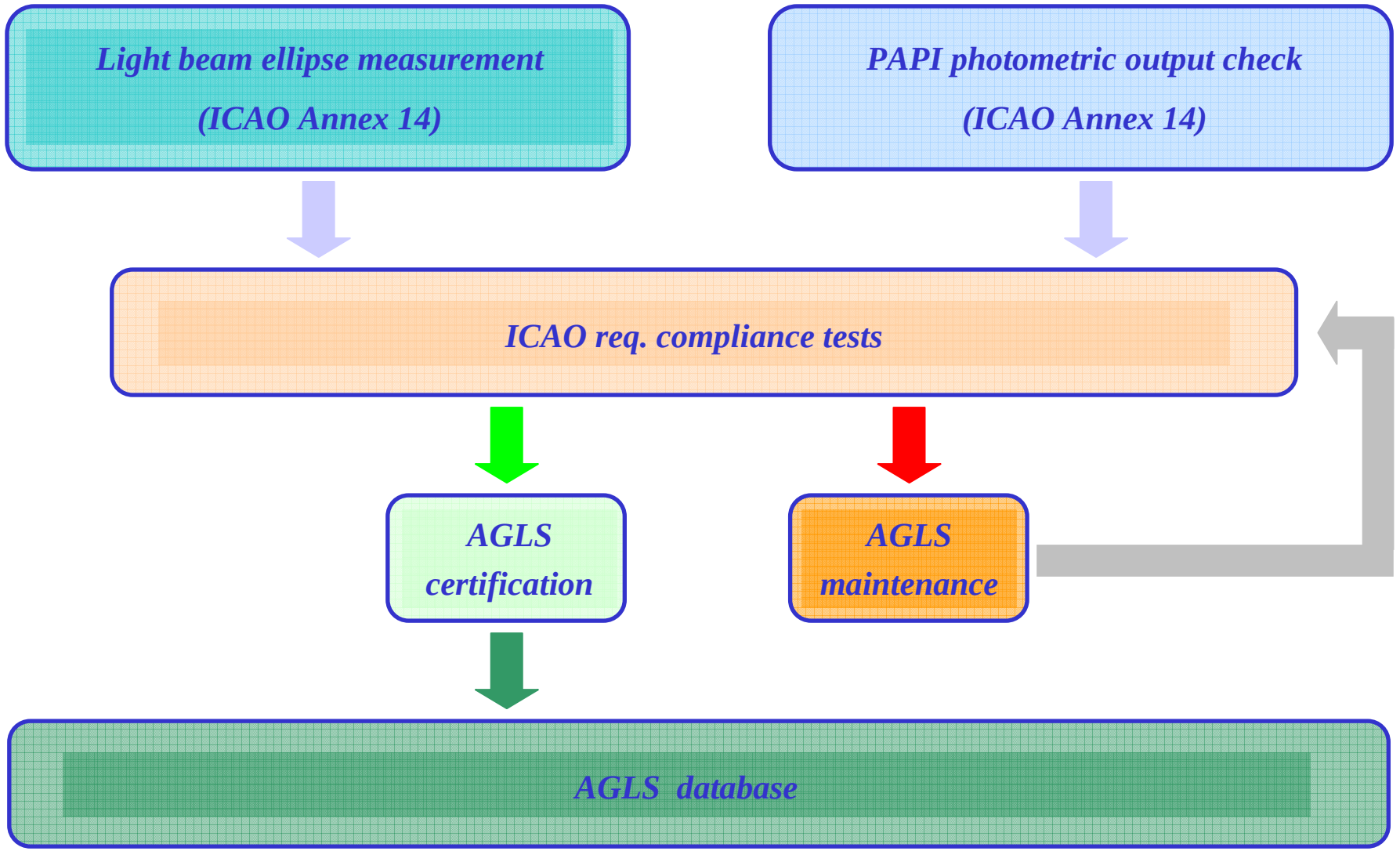
Cart-Lamp Distance Measurement System

Electrical Cart

Automated Positioning System

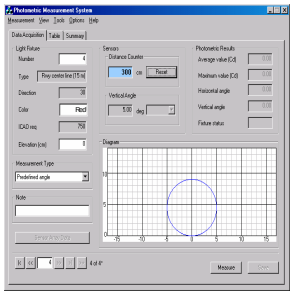
Photometric Sensors Array

SMF/F - What SMF/F allows to do



SMF/F - Main features

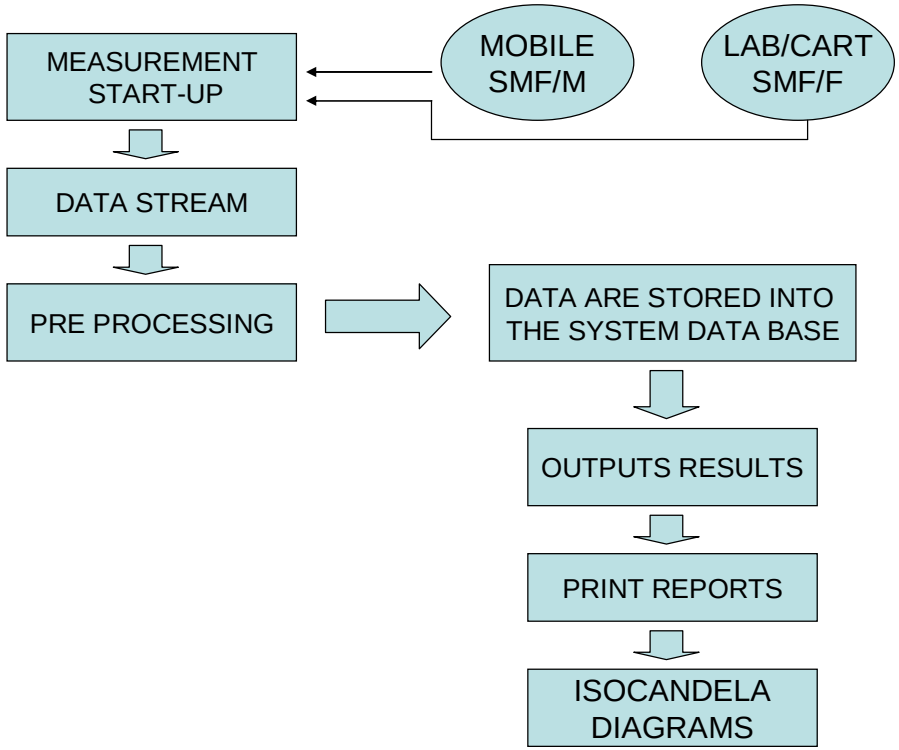
- 4 wheel battery operated vehicle
- Length: 260 cm; width: 110 cm;
- Weight: 600Kg
- Max speed: 50 Km/h
- Range capability: 100 Km
- Front lights for night operations
- Special capote to make the operator comfortable during operations
- Encoder for distance measuring
- 3 Laser pointers
- 13 sensors bar , 1 m length
- Vertical automatic bar positioning
- 1° horizontal aperture for each sensor at 3m
- 1° vertical resolution (single step)
- Accuracy : 5%
- Precision : 3%



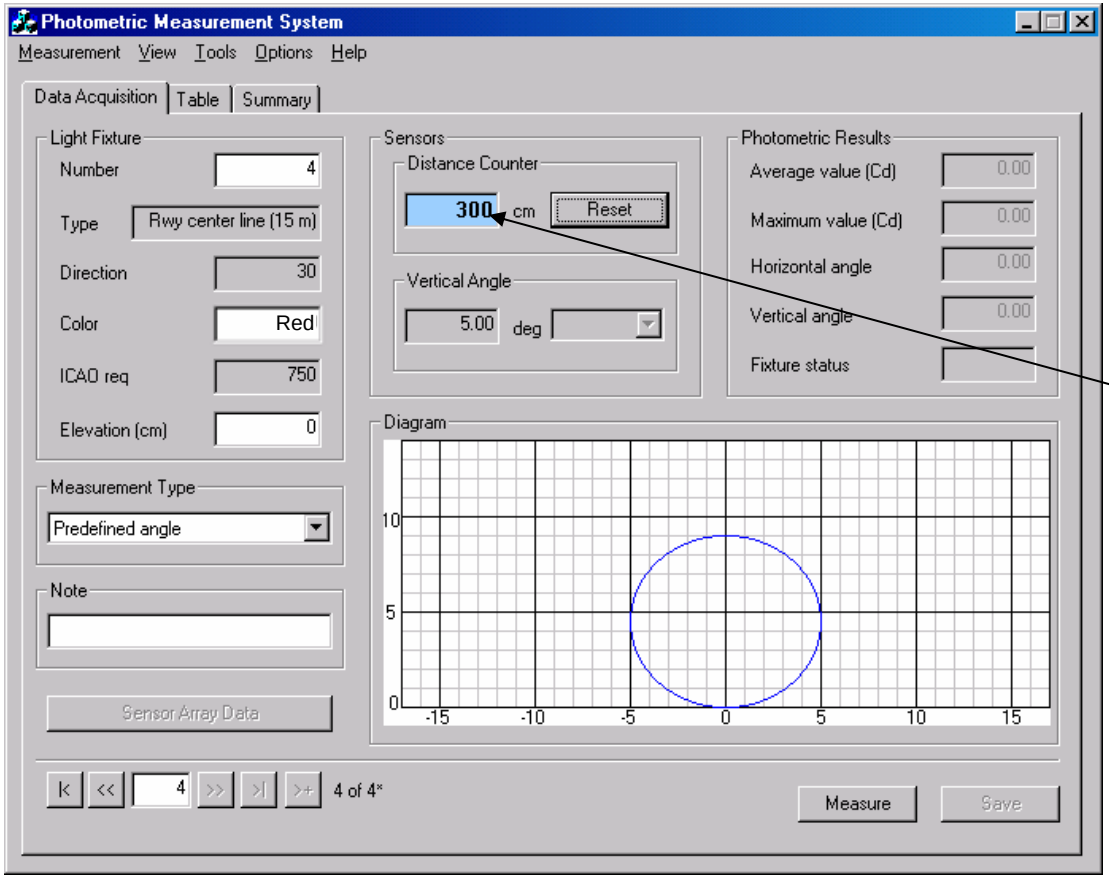
SMF SYSTEM SOFTWARE (PMS)

SMF – The PMS System Software Architecture

- **The PMS system software has been designed to operate for Mobile , Lab and Cart operations. It is therefore organised in two different modules:**
- **Mobile measurement module**
- **Lab/Cart measurement module with a common data base and analysis procedures module for Lab/Cart/Mobile**



SMF – PMS System Software – SMF/F & SMF/L

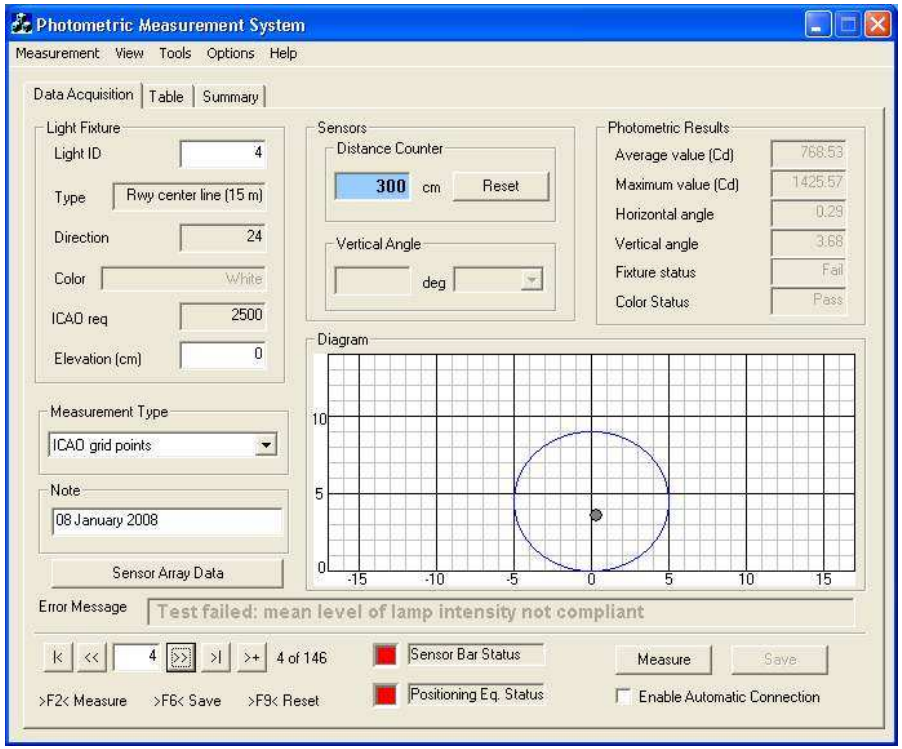


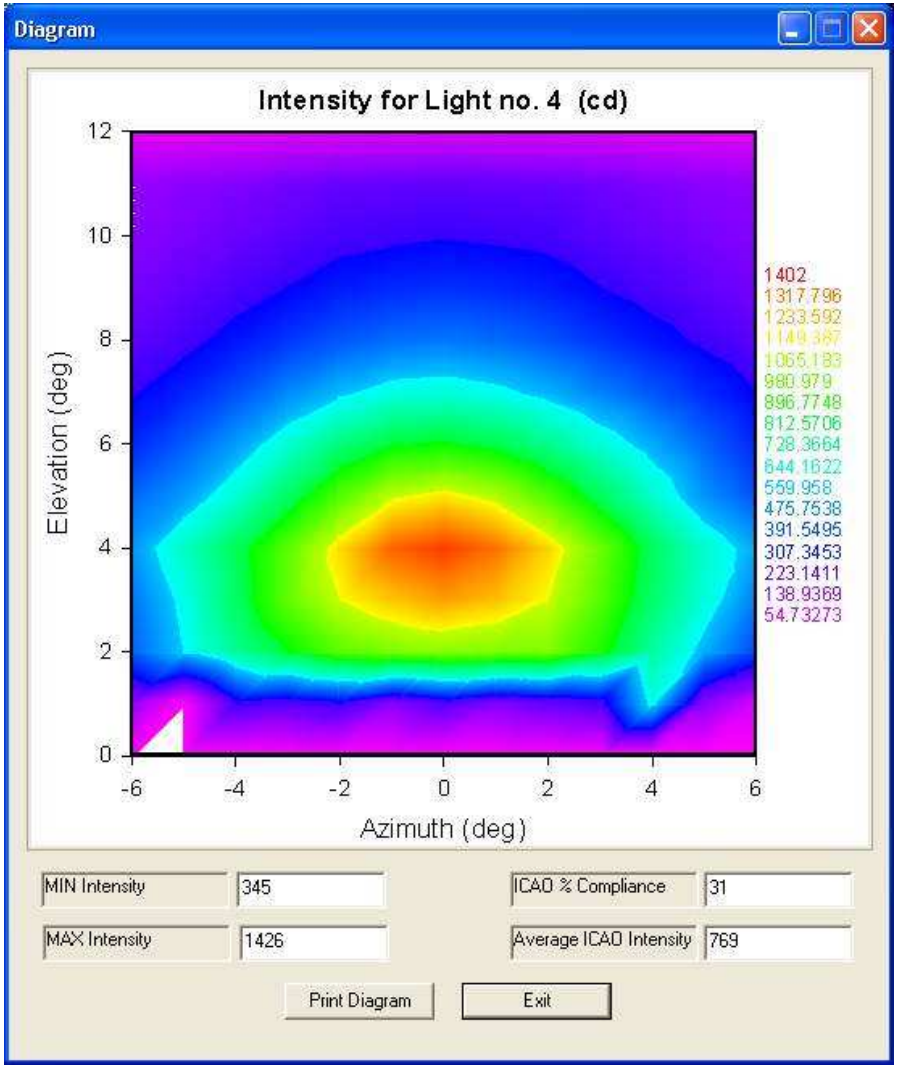
Distance Counter

Measurement operations of SMF/F are very close to SMF/Lab system ones. The only difference consists in the calculation of the distance between the machine and the fixture, that is performed according to the real position of the cart driven by the operator. In the Lab system the distance is always fixed to the value stated at moment of the installation.

SMF – PMS System Software - Reports

Functions for data analysis and reports are the same for SMF/M, SMF/F and SMF/L





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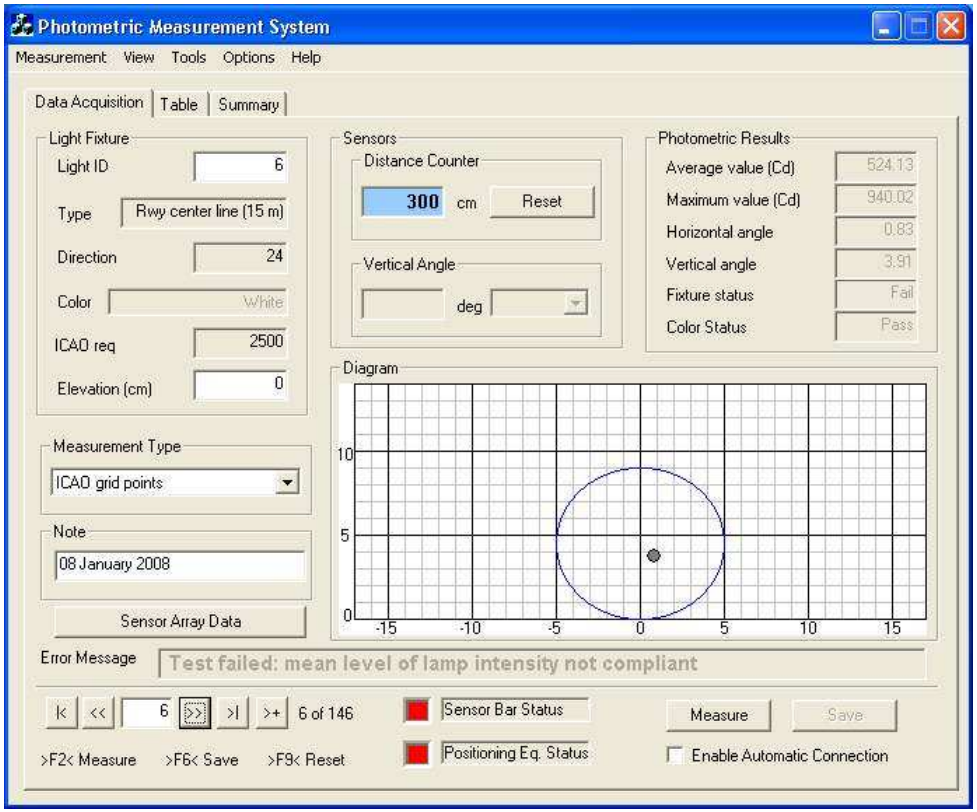
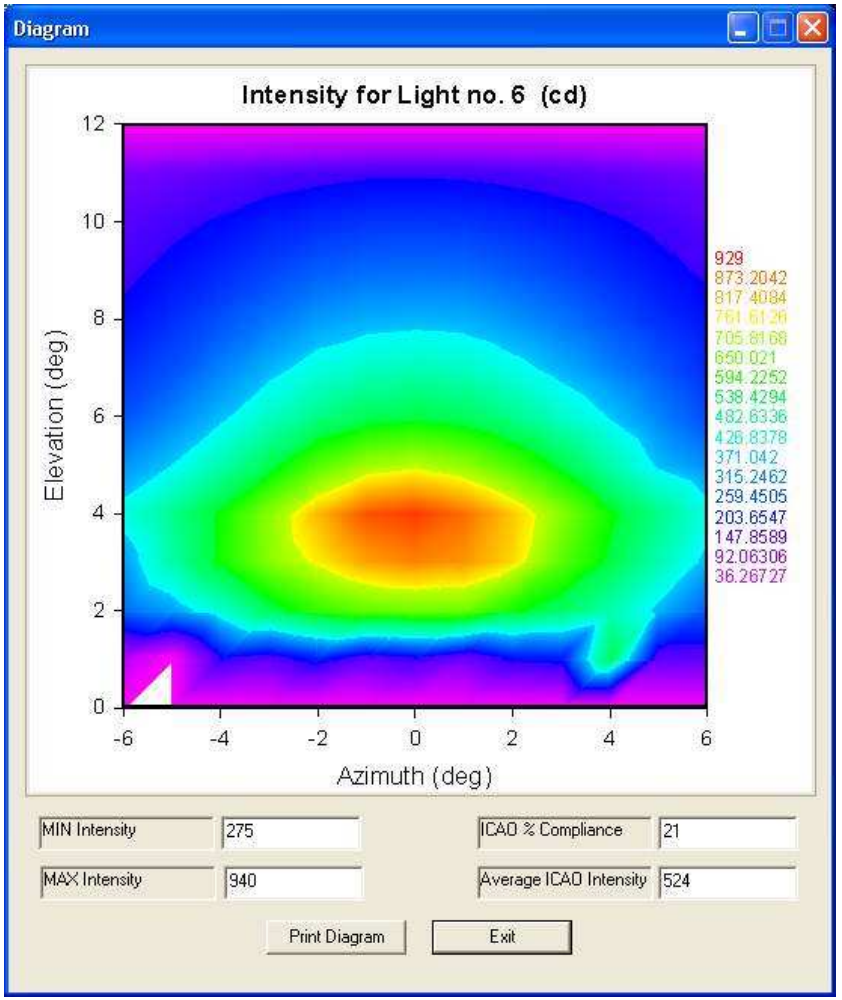
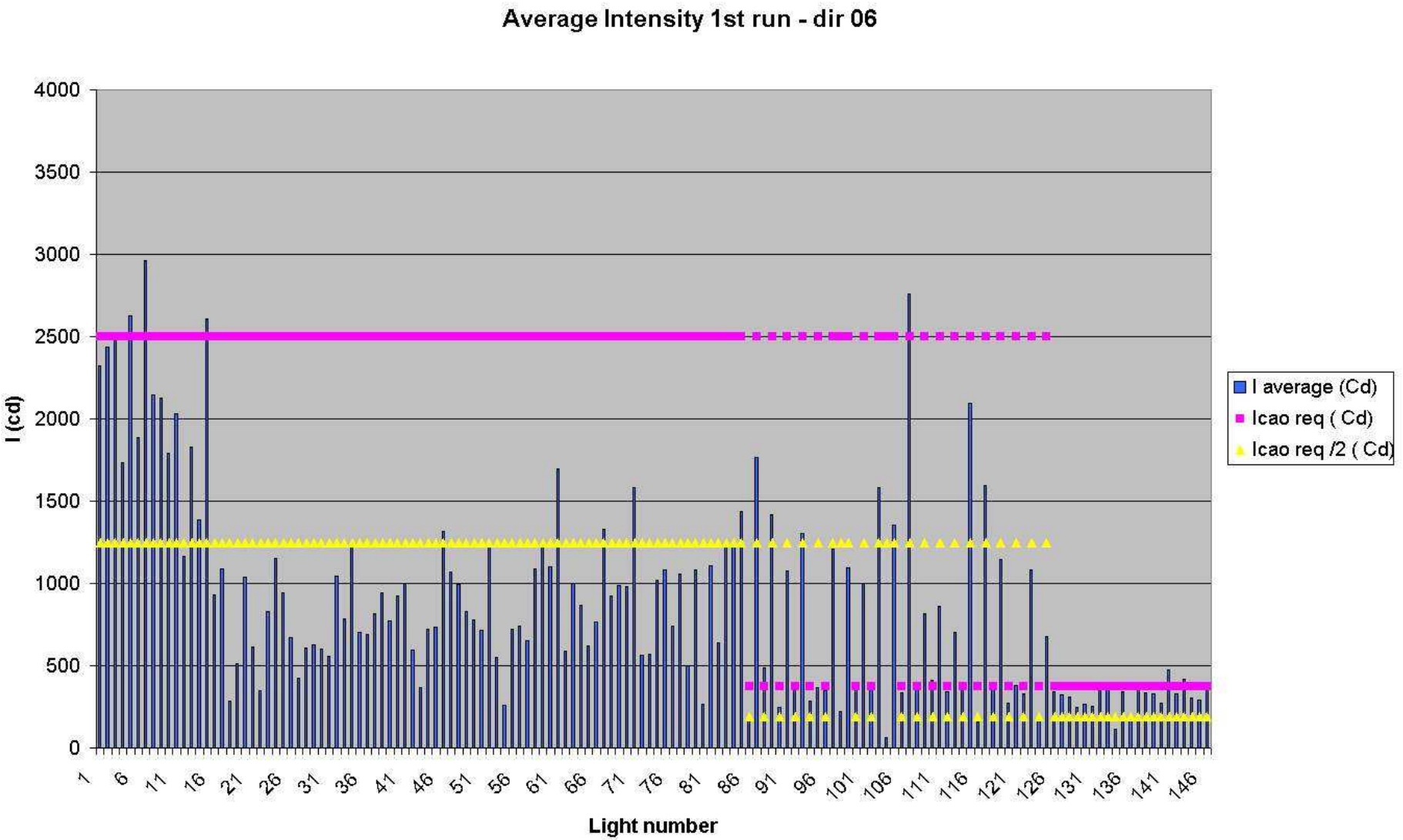
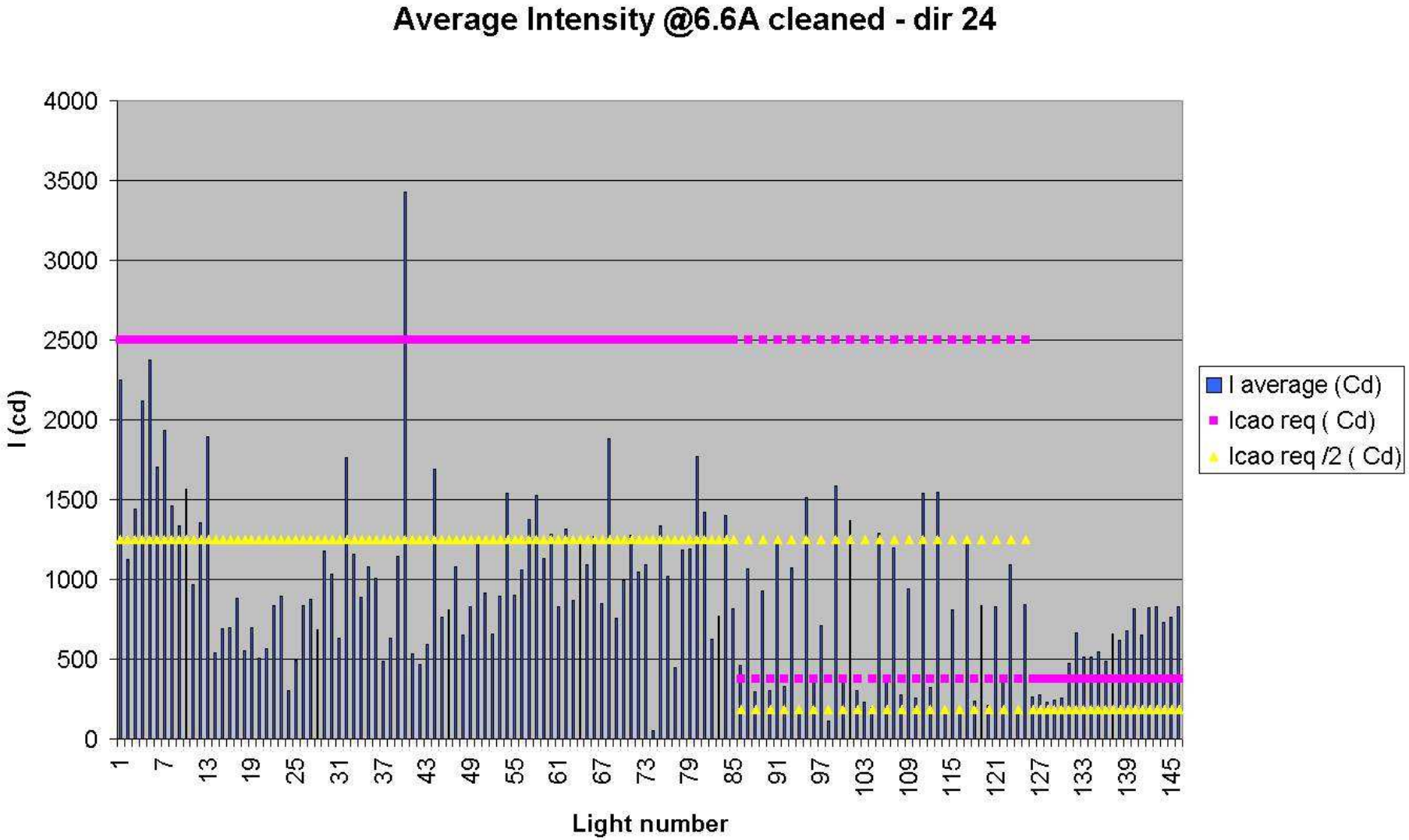




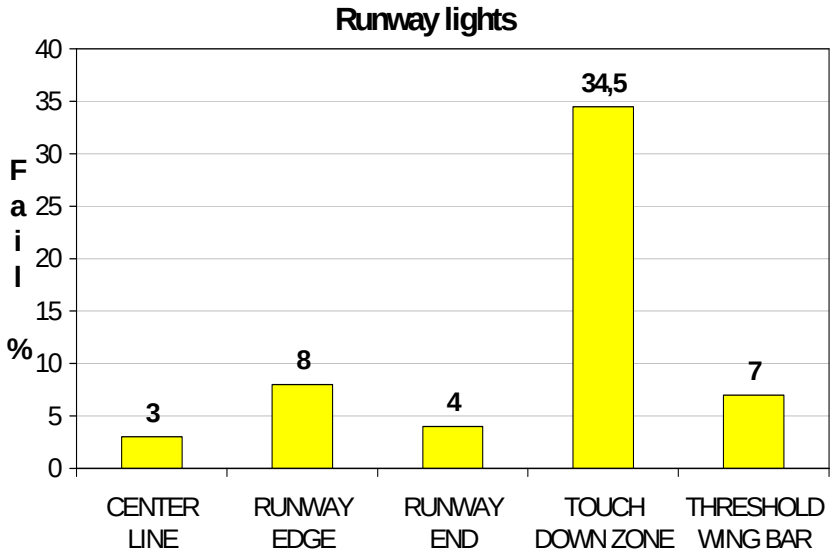
SMF – PMS System Software - AGLS Reports



SMF – PMS System Software - AGLS Reports



SMF – PMS System Software - AGLS Reports



	AVL	ICAO REQUIREMENT [cd]	Fail %
APP	APPROACH CENTER LINE	20000 (W), 5000 (R)	2
	APPROACH SIDE ROW	5000	24
	APPROACH CROSSBAR	20000	0
RWY	CENTER LINE	5000 (W), 750 (R)	3
	RUNWAY EDGE	10000 (W), 4000 (Y), 2500 (R)	8
	RUNWAY END	2500	4
	TOUCH DOWN ZONE	5000	34,5
	THRESHOLD WING BAR	10000	7
TWY	TWY - RWY INT.	200	10
	TAXIWAY	200	8
	TWY - RWY INT. STOP BAR	200	8,5