www.advancedsolarsolution.com

ECO-FRIENDLY SOLUTION FOR AIRPORTS AND HELIPORTS

Solution

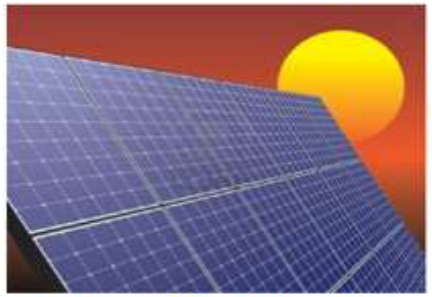
AIRPORT LIGHTS

HELIPORT LIGHTS

WINDSOCK

OBSTRUCTION LIGHTS

GLIDE PATH INDICATOR



SOLAR ENERGY, RENEWABLE AND LOW COST WITH ZERO ENVIRONMENTAL IMPACT

SOLUTION /SYSTEMS AND PRODUCTS)
POWERED BY SOLAR ENERGY

- MULTIPLICITY OF SOLUTIONS
- SIMPLICITY OF INSTALLATION (NO EXCAVATION AND WIRING)
- HIGH RELIABILITY
- INTEGRATED MONITORING AND CONTROL FACILITY
- LOW MAINTENANCE COSTS

ADVANTAGES & BENEFITS OF SOLAR

1. Lower costs compared to traditional systems (inset light)
- No cable duct, no CCR, no artifact required
- No power generator, no UPS
- Lower costs to modify and / or update the configuration

2. Simple installation
- No specialized installation personnel needed
- Wireless light control, no physical connection

3. Ease of use
- Reduced maintenance
- No high voltage problem
- Minimum or no wiring

ADVANTAGES & BENEFITS OF SOLAR

4. Quickness of Exercise
- Portable or emergency airfields
- Permanent and / or temporary installations
- Relocability of the system

5. Green technology
- No electricity consumption
- Powered by renewable energy

6. Standardization
- Commercial type consumables

WIRE TRADITIONAL SOLUTION

HELIPAD

+

CABLEDUCT

+

LIGHTS

+

CCR

+

GENERATOR

+

UPS

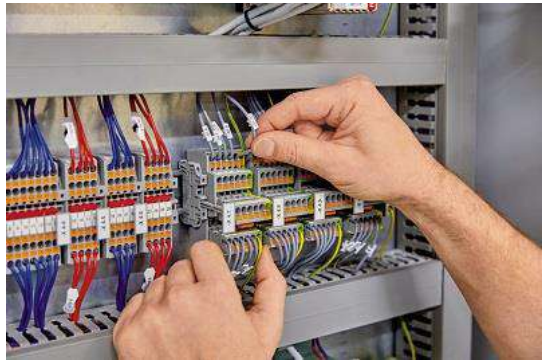
+

LIGHTS INSTALL

+

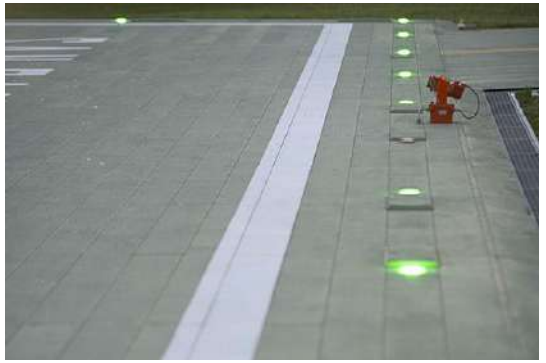
CABLES INSTALL

+



WIRING

+



SWITCHING ON

SOLAR SOLUTION

HELIPAD

CABLEDUCT

+

LIGHTS

CCR

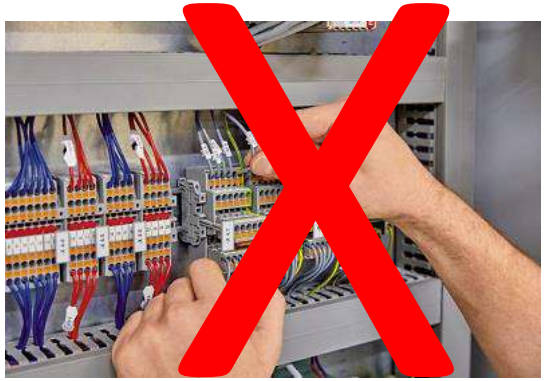
GENERATOR

UPS

+

LIGHTS INSTALL

CABLES INSTALL



WIRING

+

SWITCHING ON

+

SMS

ABOUT US

Advanced Solar Solution Network (ASSN) has been founded by Gloss with the aim to provide integrated wireless solutions based on the use of the solar energy power, for aeronautical applications, such as airport and heliport visual aids, obstruction lights and video surveillance systems.

For the implementation of the ASSN systems, Gloss has acquired the design rights of the SCB light manufactured by Biofly Srl.

GLOSS is a consultancy company founded by a group of experts with extensive experience in the field of Civil and Military integrated mission-critical systems.

The competence of Gloss ranges on all areas of the business, from sales, to marketing, program management, hardware and software design.

Gloss cooperates with various Italian and foreign companies operating in several field of activity: *Air Traffic Management, Airports, Vessel Traffic Management, Lighting Systems and Logistics Services.*

SILAS – H

(Solar Illumination Aeronautical System)

Heliport Version

SILAS System

- **SILAS (Solar Illumination Aeronautical System)** satisfies the need to provide small airports or heliports with a low cost system to improve the flight safety in bad weather conditions or to extend the operational working hours also during night time and in case of low visibility.
- **SILAS** is an integrated system very easy to install, not requiring any site preparation, and maybe configured with various light typologies, to satisfy the different operational requirements of heliports and airports.

SILAS System

- The **SILAS** system is based on the SCB lights, which in the standard configuration does not require external power supply, being connected to a battery charged from solar panels.
- The system may operate also in mixed working mode (solar/external power); in this configuration the lights are connected to the external power, via a dedicated plug. Then, in case of power loss the system will continue to operate via the battery powered by the solar cells, without the need of external UPS or power generator.

SILAS-H is an integrated system optimized for the need of all heliport configurations:

- Heliport
- Helipads
- Helicopter rescue pitches
- Temporary helipads


Ospedale di Cremona


Cremona


Aeroporto di Olbia

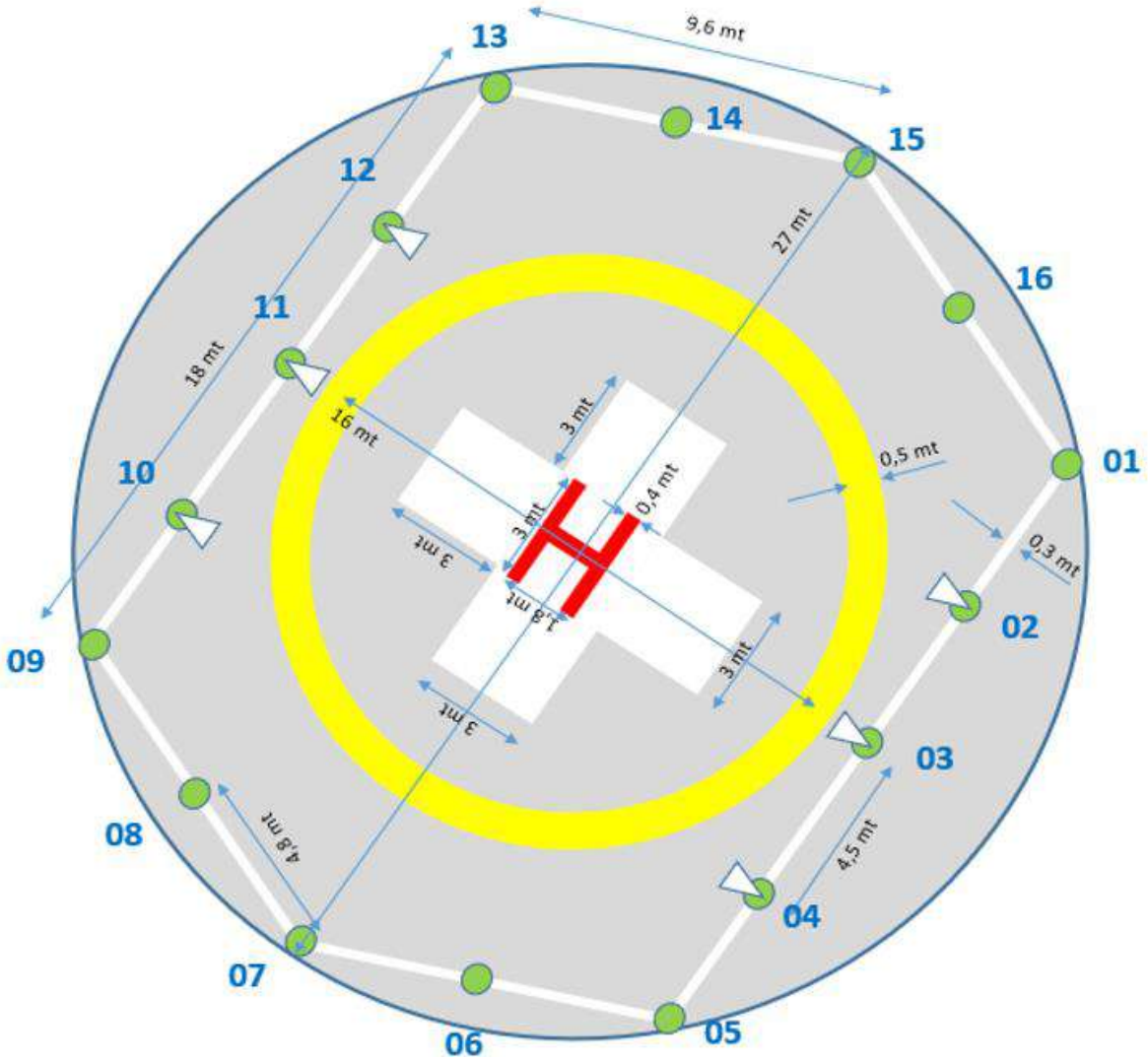
SILAS-H – Main Features

- Easy to be used, installed and rilocated
- Solar powered without external energy
- Flexible: all kind of fixed and temporary heliports and helipads
- Complete solution: FATO, TLOF, area illumination, solar wind sock, obstruction light, remote control
- Wireless monitoring and control
- Reliability: High quality components to withstand adverse environmental conditions
- Low life cicle cost
- Very low emission
- Conformity to the international standards: FAA, ICAO Annex 14, ENAC, Italian Air Force

SILAS-H - Components

- SCB light in various configurations (TLOF, FATO, Taxiway, Obstruction)
- Light Control Unit (LCU)
- Remote Control Panel (RCP)
- Solar powered wind sock
- Video surveillance system
- Solar Powered Glide Path Indicator (GPI)
- Beacon

HELIPORT TYPICAL LAYOUT



SILAS-H –SCB Light

Lights are available in different configuration (*omnidirectional* or *directional*) and color (green, white, red and blue) to fit the heliport operational requirements:

- **FATO** (Final Approach and Take-Off area light)
- **TLOF** (Touchdown and Lift-Off area light)
- **TLOF + Flood Lighting**
- **Taxiway Edge Light**

Military / tactical versions, with infrared LED (IRL), are also available.

SILAS-H – SCB Light

ITEM	DESCRIPTION
Battery	Sealed, 12V, 9 Ah
Solar Panels	Q.ty 4, power 3 W, irradiation of 1000W/m2 , inclined for greater absorption
LED Lamps	Omnidirectional: White, Green, Yellow, Blu, Red Directional: White
LED Lamp expected life	50.000 h at maximum intensity
Autonomy	24 h (minimal with one LED at the highest intensity)
Mechanical structure	Structure in aeronautical aluminum alloy with frangibility points, resistant to corrosion, Yellow color RAL 1023
Dome	In transparent polycarbonate
Interface	Zigbee
Waterproofing	Conforms to the IP67 standard
Operating temperature	-20°C - +50°C
Dimension	290 x 290 x 240 mm
Weight	Kg 7
Utility	Power on and reset buttons
Ground fixing	with frangible fixing kit
Auxiliary recharge	Socket for charging from external power supply

SILAS-H – LCU

The SILAS-H system is managed via the Light Control Unit (**LCU**), which allows the following functions:

- Manual switching on-off of all system lights;
- Selection of the intensity level (*low, medium, high*);
- Swtching on-off by means of a dedicated SMS, through a dedicated SIM card;
- System status presentation

The LCU can also be installed outdoor, since it is assembled in a IP67 case.

The LCU can also be powered by solar panel.

SILAS-H – RCP

The RCP (Remote Control Panel) allows the operator to monitor the status of the system and to switch on/off the lights of the heliports.

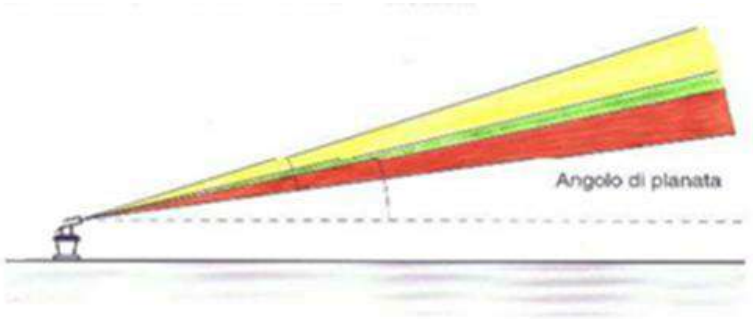
The RCP provides the status of the system via LED lights and with a buzzer sound in case of critical failure.

SILAS-H – Windsock

- Water-repellent and color-fast nylon sock
- Weather and corrosion-resistant iron construction coated by polyurethane paint;
- Revolving sock frame;
- White directional LED light;
- Red Obstruction LED Light
- Power via the Solar Kit
- Two versions available for heliports:
  - On the ground: frangible mast, height 400 cm or 560 cm and sock length 240 cm;
  - In elevation: non frangible mast, height 300 cm and sock length 120 cm.

SILAS-H – Glide Path Indicator

- Light radiator, with a beam of 3 colors (red, green, amber)
- Powered and controlled via the Solar Kit
- It emits a pyramidal light beam divided in three contiguous sectors of different colors



SILAS-H – Solar Kit

- Scope: Integration of the GPI and of the wind sock into the SILAS System
- Composed of:
  - Solar Panel, placed on a special metal support structure and fixed to the ground;
  - Solar Controller, including:
    - Battery;
    - Charge regulator;
    - Electonic circuits to interface with the LCU (Light Control Unit) via Zigbee communication

SILAS-H - Installations

Cremona - Hospital

Rome - S. Camillo Hospital

Olbia – Costa Smeralda Heliport

Viterbo - Belcolle

Rome – Cumpus Biomedico Hospital

Ponza Island Heliport

Certifications

ENAC
ENTE NAZIONALE PER L'AVIAZIONE CIVILE
ITALIAN CIVIL AVIATION AUTHORITY

ENAC
Protocollo del 24/06/2013
0075365/CIA

Airport Infrastructures Director

Spett.le *Biofly S.r.l.*
Via Pontina Km 34
00040 Ardea – (RM)

SUBJECT: Portable and semipermanent device model SCB (SMART CONTROLLED BIOFLY LIGHT) for runway and taxiway lighting. – STATEMENT OF CONFORMITY.

- Having regard to following reference regulation:
  - ICAO – Annex 14 – Volume 1 and 2;
  - ENAC – Regulation for the construction and management of airports – Ch.6;
  - ENAC – Regulation for the construction and management of heliports – Ch.5;
  - ENAC – Attachment to the Circolar APT 13/A – (*Manual of Acceptance criteria Visual Aids);*
  - ENAC – APT 28 – Aerodrome devices acceptance criteria;
  - FAA – Advisory Circular – Specification for Portable runway and Taxiway Lights - AC N°: 5345/150-50B - April 5, 2012.

- Having regard to Technical Operational Standard ENAC APS-04 – 1st Edition of 2013;

- Having regard to following manufacturers documents:
  - Measure of the Photometric values of the emission spectrum by "Ocem/Argos";
  - Technical laboratory tests inside Biofly and/or at the outside Institute "Giordano";
  - Technical operation tests inside Biofly and/or outside on the selected airport;
  - Evaluation about design technical parameters and related datasheet of Biofly;
  - Compliance ENAC.

- Whereas SCB device fulfills previous regulatory references;
- Whereas both laboratory and field tests issued a positive outcome.
- ENAC hereby states that the following device:

Article	Description
SCB RTIL	Runway Threshold Identification Light
SCB REL	Runway Edge Light
SCB RTE	Runway Threshold and End Light
SCB TEL	Taxiway Edge Light
SCB TLOF	Touchdown Lift-off Area Light
SCB FATO	Final Approach Take-off Area Light

complies with Technical Operational Standard ENAC APS-04 – 1st Edition of 2013.

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ENAC CERTIFICATION

Aeronautica Militare
Comando Logistico
1ª Divisione - Centro Sperimentale Volo

Pratica di Mare, 8.4.2013
PoC: Magg. SAGLIOCCA - 6053106

Al: COMANDO LOGISTICO
Stato Maggiore
= ROMA =

Allegati: 1

Prot. n. M_D ARM017 5313 /2013
RM017-RSV.0.4 /D.03.03

OGGETTO: Valutazione del sistema luci pista SCB Eco Light della ditta Biofly

Riferimento: M_DARM003. 145639 del 31/12/12

1. Con il foglio a riferimento il Comando Logistico A.M. ha richiesto allo scrivente CSV la valutazione di un sistema di luci pista della ditta Biofly S.r.l., denominato SCB (*Smart Controlled Biofly*) *Eco Light*, in grado di equipaggiare aeroporti ed eliporti con piste asfaltate o in erba prive di illuminazione permanente.
2. Il dipendente Reparto Sperimentale Volo ha pertanto condotto, nel periodo febbraio-marzo u.s., un'attività di sperimentazione volta a definire le caratteristiche logistiche ed operative del sistema ai fini di un'eventuale applicazione in campo militare.
   Dalle prove effettuate, e dettagliate nella nota tecnica in allegato, è emerso che il sistema in oggetto presenta ottime potenzialità per un eventuale impiego operativo.
3. Tanto si rappresenta rimanendo a disposizione per ogni eventuale ulteriore informazione in merito.

IL COMANDANTE
(Gen. D.A. Fabio MOLTENI)

CSV CERTIFICATION

THANKS FOR
YOUR ATTENTION