Visual Alignment Guidance System

Compliance to standards	**ICAO:** Annex 14, Volume II - Heliports, 4th Edition, 5.3.5
Application	**Visual Alignment Guidance System** Provides a combined signal of approach azimuth guidance and threshold identification. It will comprise of 2 Flashing Units (master and slave). The system is located symmetrically on both sides of the runway (or TLOF for heliport threshold). Depending of his position on the approach axis, the pilot will receive visual information of two “Flashes” supplied by the two “flashing” units of the system.
Features	Designed and built with simplicity and ease of maintenance in mind. High power LED technology Lightweight, low-energy and environment friendly lighting fitting. Extensive use of aluminium alloys reduces fitting weight and eases handling in the field.
Product Code	**AL - 087 - 02 - WH** Series Indicator (Airfield Lighting) **AL** Product Indicator **087** LEDs Number (2 LEDs) **02** LEDs Light Colour (cool white) **WH**

Description

Housing - Powder coated aluminium RAL 1004 (aviation yellow)
Dispenser - hardened glass
Cable gland - nickel plated brass
Fasteners - stainless steel

Light fixtures are provided with anti condensation valve. The system is equipped with focused LEDs and it can be remotely controlled, there are three brightness steps 10, 30, 100%.

There are 2 dry contacts, one for each unit. Between the units there is a 485 communication monitoring the synchronization and the status of the lamps. In case of failure both units will be turned OFF and the dry contact will change the status, indicating a failure, according ICAO Annex 14, vol. 2, Paragraph 5.3.5.18.

If the pilot is on the axis +/- 0.5°, the two Flashes are simultaneous or if the pilot is not on the axis within an angle comprise between -15 and +15°, the two "Flashes" will be seen delayed of a time between 0 and 330 ms (the further the aircraft is from the axis, the greater the delay). The delay between the two flashes produces a sequence effect which shows the direction of the axis.

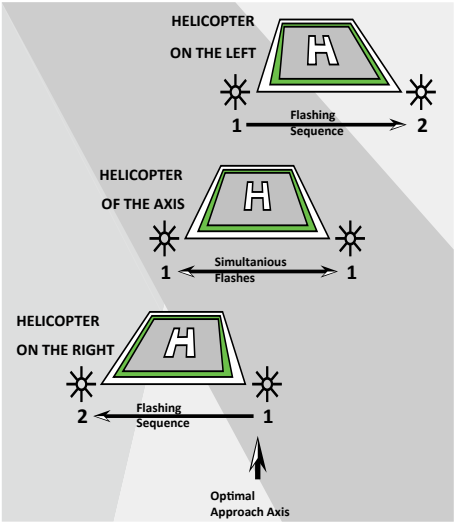
Operation Principal

The two light units of a SAGA system must be installed at 10 metres from the runway Edge symmetrically on both sides of the Runway threshold (for TLOF the two units must be installed as close as possible to the threshold edges). The Master unit must be installed on the right of the Threshold.

When the aircraft flies inside a 1° angular sector, centred on the approach axis, the pilot sees the two lights flashing simultaneously.

When the aircraft flies inside a 30° an-gular sector, centred on the approach axis and outside the previous one, the pilot sees the two lights flashing in a sequence with a variable delay 0 to 330 ms according to the position of the aircraft in the sector.

The further the aircraft isfrom the axis, the greater the delay. The delay between the two flashes, produces a sequence effect which shows the direction of the axis. The visual signal is not visible when the aircraft flies outside the 30° angular sector.



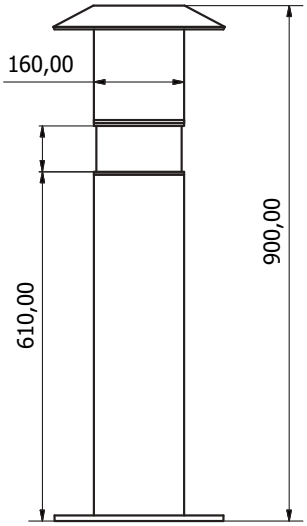
Environment

Temperature range: -200 to +500 (-500 to +500 with heating)
Degree of protection: IP 65
Ka tested: Salt mist in accordance with IEC 60068-2-11 and IEC 60068-2-25

As an option the units can be equipped with heating for cold and wet environment.

Mechanical Characteristics

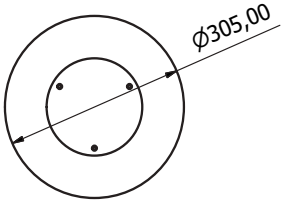
Height 900 mm
Maximum diameter 305 mm
Light axis origin 650 mm



Installation is made with frangible bolts according to ICAO Annex 14, Vol. 2, Paragraph 5.3.5.4 .

There is the possibility of rotating the light fixtures with +/-7.50.

The unit levelling is adjustable from the fastening system.

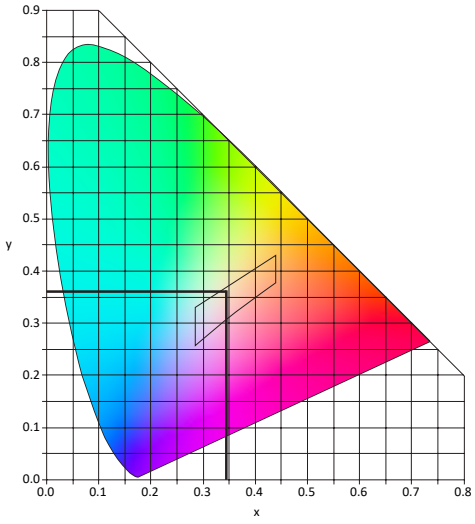


Electrical Characteristics

Power consumption maximum 25W/hour
Power supply 48V DC from controller - dimmable : 100% ,30%, 10%
110 VAC -230 VAC, 50/60Hz - non dimmable

Photometric Characteristics

The light colour emitted by the light fixture is white, with the trichromatic coordinates:



x=0,348
y=0,360
z=0,292

The measured trichromatic coordinates correspond to colour range requirements in:

ICAO Annex 14 - Aerodromes Vol.1, fig. A1-1-1b.
Colours for aeronautical ground lights (solid state lighting)

Light distribution:

- **10 in horizontal plane (Divergence of the "on track" sector) according to:**

ICAO Annex 14, vol. 2, Figure 5-13.

- **Light intensity average 40.000 cd, equal to or better than APAPI white intensity according to:**

ICAO Annex 14, Vol. 2, Paragraph 5.3.5.13

- **100 in vertical plane above 0**

Each unit generates a flash with a frequency of 1 Hz.

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