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TECHNICAL DATASHEET · AIRPORT PORTABLE LIGHTING · LI/MI RUNWAY LIGHTS

Polaris V1 Low/Medium Intensity

EcoSolaris code **ECO-AL-2936**

Ordering code **AL-168/169/170/171-XX-XX**

Made in Romania Manufactured in the EU





Range of battery-powered low-intensity (LI) and medium-intensity (MI) portable runway lights for non-precision or non-instrument airfields. Light distribution and colours follow ICAO Annex 14; low intensity corresponds to the 10% step and medium to the 30% step.

INTENSITY SUFFIX
-LI = low (10% step), -MI = medium (30% step)

MAXIMUM CONSUMPTION AT 100%
APH 15 W; REL 7.5 W; END 1.75 W

BATTERY
rechargeable lead-acid 12 V – 12 Ah

APH AUTONOMY (100/30/10/3/1%)
9.6 / 32 / 96 / 320 / 960 h

Price on request

EcoSolaris technical support · Dubai

Technical specifications

LI / MI range	threshold wing AL-112-03-GR 1000 / 3000 cd; runway end AL-139-02-RE 250 / 750 cd; approach AL-111-03-WH 2000 / 6000 cd; runway edge AL-113-06-WH 1000 / 3000 cd; threshold/end AL-114-04-GR-RE 1000 / 3000 cd and 250 / 750 cd
Intensity suffix	-LI = low (10% step), -MI = medium (30% step)
REL – average LI / MI	white 1000 / 3000 cd; yellow 400 / 1200 cd; red 150 / 450 cd (ICAO Annex 14 Vol. I, fig. A2-10)
Omnidirectional beam (REL, circling)	50 cd at all azimuths up to 15° vertical (ICAO Annex 14, 5.3.9.9)
Toe-in (REL)	3.5° for 45 m wide runways; 4.5° for 60 m wide runways
Maximum consumption at 100%	APH 15 W; REL 7.5 W; END 1.75 W
Battery	rechargeable lead-acid 12 V – 12 Ah
APH autonomy (100/30/10/3/1%)	9.6 / 32 / 96 / 320 / 960 h
REL autonomy (100/30/10/3/1%)	19 / 63 / 190 / 630 / 1900 h
END autonomy (100/30/10%)	82 / 270 / 820 h; at 1% and 3% at least twice the 10% value
Autonomy conditions	new battery, 100% charged, 20 °C
Solar panel	minimum 20 W, optional 30 or 40 W
Brightness steps	1%, 3%, 10%, 30%, 100%
LED lifespan	100 000 h
Radio	LoRa 868 MHz (Europe) / 915 MHz (USA) / optional 433 MHz, up to 10 km line of sight
Operating temperature	-20° to +55°
Degree of protection / humidity	IP65 / 0–100%
Dimensions	APH: 236.5 × 248 mm; REL: 240 × 248 mm (width × total height)
Weight (APH, REL)	5.9 kg

Features

- High-power LEDs, 100 000 h lifespan
- Steady light with 5 steps: 1%, 3%, 10%, 30%, 100%
- Local push-button control and 4-LED battery indicator
- Control via remote or base station and Polaris application (individual, groups, scenarios)
- Sensors: temperature, GPS, LED current and voltage, battery voltage, charging current, ambient light
- ARCAL: 3 clicks = 10%, 5 clicks = 30%, 7 clicks = 100%
- Battery disconnection for storage and transport with zero drain

Standards and compliance

- ICAO Annex 14, Volume I – Aerodromes
- IEC TS 61827 – electrical installations for lighting and beaconing of aerodromes; characteristics of inset and elevated luminaires for aerodromes and heliports
- Measured chromaticity within ICAO Annex 14 Vol. I, fig. A1-1b colour ranges (solid-state aeronautical ground lights)

Materials and construction

- Housing: UV-resistant polycarbonate, RAL 1004 (aviation yellow)
- Disperser: clear UV-resistant polycarbonate
- Cable gland: nickel-plated brass
- Fasteners: stainless steel
- Carrying handle: aluminium
- Anti-condensation valve fitted

Configuration options

- Infrared (IR) LEDs for NVG (night-vision goggles) compatibility
- Night-only operation with photocell
- One-way or two-way radio control (LoRa 868 / 915 MHz, optional 433 MHz)
- Built-in GPS
- ARCAL – pilot activation
- Solar panel: minimum 20 W, optional 30 or 40 W
- Charging: drop-in trays/racks (5/10/15/20 lights), DC port (external solar panel, individual charger 1/6/10 lights), AC port (cable, 220 V rack) or built-in solar panel
- Mounting directly on the ground, on a frangible support, or on a frangible support with solar panel

Ordering code structure

AL - XXX - XX - XX - LI/MI

AL	Series indicator (airfield lighting)
111	Approach (APH), white
112	Threshold wing (THR), green
113	Runway edge (REL), WH/WH, WH/YE or WH/RE
114	Threshold/end combined (THR-END), green/red
139	Runway end (END), red
XX	Number of LEDs (+1 when IR is added, e.g. AL-111-04-WH-IR)
XX	Colour: GR, RE, WH, YE; optional IR and toe-in 3.5 / 4.5 (e.g. AL-113-06-WH/YE-3,5)
LI / MI	Low / medium intensity

Compatible accessories

AL-123-AX	Polaris solar panel stand
AL-124-AX	Polaris base plate
AL-125-AX	Individual charger
AL-126-XX-AX	Charging rack
AL-141-AX	Polaris photovoltaic panel
AL-165-AX	Polaris radio remote control
AL-199-XX-AX	Individual charger for Polaris
AL-159-AX	Polaris base station
AL-173-AX	Tripod
AL-102-AX	Φ260 mm base plate

Applications

Non-precision or non-instrument airfields (no ILS)

Temporary lighting during runway works

Emergency and back-up lighting when the fixed system fails

Remote, military or temporary airstrips without mains power