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TECHNICAL DATASHEET · AIRPORT PORTABLE LIGHTING · HIGH-INTENSITY (HI) RUNWAY LIGHTS

Polaris V1 High Intensity

EcoSolaris code **ECO-AL-2869**

Ordering code **AL-167/168/169/170/171-XX-XX**

Made in Romania Manufactured in the EU



Range of battery-powered high-intensity portable runway lights with ICAO Annex 14 light distribution and colours. It covers threshold, runway end, approach, runway edge and combined threshold/end lights for temporary, emergency or back-up lighting.

END – AVERAGE MAIN BEAM AT 100%
red 2500 cd (ICAO Annex 14 Vol. I, fig. A2-8)

MAXIMUM CONSUMPTION AT 100%
REL 15 W; THR-END 7.5 W; END 3.5 W

BATTERY
rechargeable lead-acid 12 V – 12 Ah

REL AUTONOMY (100/30/10/3/1%)
10 / 30 / 100 / 300 / 1000 h

Price on request

EcoSolaris technical support · Dubai

Technical specifications

Range (code – function – intensity)	AL-162-06-GR-HI threshold wing (THR) 10 000 cd; AL-163-02-RE-HI runway end (END) 2500 cd; AL-164-10-WH-HI approach (APH) 20 000 cd; AL-165-07-WH-HI runway edge (REL) 10 000 cd; AL-166-05-GR-RE-HI threshold/end (THR-END) 10 000 cd / 2500 cd
REL – average main beam at 100%	white 10 000 cd; yellow 4000 cd; red 1500 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
END – average main beam at 100%	red 2500 cd (ICAO Annex 14 Vol. I, fig. A2-8)
Maximum consumption at 100%	REL 15 W; THR-END 7.5 W; END 3.5 W
Battery	rechargeable lead-acid 12 V – 12 Ah
REL autonomy (100/30/10/3/1%)	10 / 30 / 100 / 300 / 1000 h
END autonomy (100/30/10/3/1%)	41 / 130 / 410 / 1300 / 4100 h
THR-END autonomy (100/30/10/3/1%)	19 / 60 / 190 / 600 / 1900 h
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	-55° to +55°
Degree of protection / humidity	IP68 / 0–100%
Dimensions (REL, END)	width 236.5 mm, total height 277.5 mm
Weight (REL, END)	6.5 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: powder-coated aluminium, RAL 1004 (aviation yellow)
- Disperser: hardened glass
- Casing: 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

AL	Series indicator (airfield lighting)
162	Threshold wing (THR), green
163	Runway end (END), red
164	Approach (APH), white
165	Runway edge (REL), WH/WH, WH/YE or WH/RE
166	Threshold/end combined (THR-END), green/red
XX	Number of LEDs (+1 when IR is added, e.g. AL-163-03-RE-IR)
XX	Colour: GR green, RE red, WH white, YE yellow; optional IR and toe-in 3.5 / 4.5 (e.g. AL-165-07-WH/YE-3,5)

Compatible accessories

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

Applications

Temporary lighting during runway works

Emergency and back-up lighting when the fixed system fails

Precision-approach airports requiring high-intensity lights

Remote, military or temporary airstrips without mains power