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TECHNICAL DATASHEET · AIRPORT PORTABLE LIGHTING · COMPACT SOLAR-CHARGED LI/MI RUNWAY LIGHTS

Polaris V3 Low/Medium Intensity

EcoSolaris code **ECO-AL-3617**

Ordering code **AL-186/187/188/189/190/191-XX-XX**

Made in Romania Manufactured in the EU





Compact range of low- and medium-intensity portable runway lights with battery and four built-in solar panels, for non-precision approach airfields. It includes approach, edge, end, threshold, threshold wing-bar and combined threshold/end lights, with aluminium body, glass dome and IP67.

BUILT-IN SOLAR PANELS	APPROACH AUTONOMY (100/30/10/3/1%)
4×5 W	**9.6 / 32 / 96 / 320 / 960 h**
EDGE AUTONOMY (100/30/10/3/1%)	AUTONOMY CONDITIONS
19 / 63 / 190 / 630 / 1900 h	**new battery, 100% charged, 20 °C**

Price on request | **EcoSolaris technical support · Dubai**

Technical specifications

Range	AL-186-03-WH approach; AL-187-06-WH runway edge; AL-188-02-RE runway end; AL-189-03-GR threshold; AL-190-03-GR threshold wing-bar; AL-191-04-GR-RE threshold end
Approach – average LI (10%) / MI (30%)	white 2000 / 6000 cd (ICAO Annex 14 Vol. I, fig. A2-1)
Edge – average LI (10%) / MI (30%)	white 1000 / 3000 cd; yellow 400 / 1200 cd; red 150 / 450 cd (ICAO Annex 14 Vol. I, fig. A2-10)
Toe-in (REL)	3.5° for 45 m wide runways; 4.5° for 60 m wide runways
Maximum consumption at 100%	approach 15 W; edge 7.5 W; end 1.75 W; threshold 4 W; threshold end 3.75 W; wing-bar 4 W
Battery	lead-acid 12 V – 12 Ah or optional $LiFePO_4$ 12 V – 12 Ah
Built-in solar panels	4×5 W
Approach autonomy (100/30/10/3/1%)	9.6 / 32 / 96 / 320 / 960 h
Edge 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
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 °C to +55 °C
Degree of protection / humidity	IP67 / 0–100%
Weight (approach, edge)	9.3 kg

Features

- Four built-in 5 W solar panels (one per side) plus DC connector for external charging
- Steady light with 5 steps: 1%, 3%, 10%, 30%, 100%
- Local push-button control with 4 battery status LEDs
- Radio control via handheld remote (one-way) or base station and Polaris application (two-way; individual, groups, scenarios)
- ARCAL: 3 clicks = 10%, 5 clicks = 30%, 7 clicks = 100%
- Battery protection: LEDs off below 10.5 V, automatic disconnection below 10.2 V
- Aluminium body and hardened glass dome

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
- TP 312E – Aerodrome Standards and Recommended Practices
- FAA AC 150/5345-46F
- Part 139 (Aerodromes) Manual of Standards
- 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
- Cable gland: nickel-plated brass
- Fasteners: stainless steel
- Anti-condensation valve fitted

Configuration options

- Infrared (IR) LEDs, invisible to the naked eye, NVG (night-vision goggles) compatible: 1 or 2 IR LEDs added to the code
- Photocell sensor – automatic day/night switching
- One-way or two-way radio control (LoRa 868 MHz Europe / 915 MHz USA / optional 433 MHz)
- Built-in GPS
- ARCAL – pilot activation by microphone clicks
- Lead-acid or optional $LiFePO_4$ battery
- Drop-in charging racks for fast deployment
- External solar panel for semi-permanent deployment
- Mounting directly on the ground (no fasteners), on a base plate with frangible coupling, or on a ground screw with bushing and frangible coupling

Ordering code structure

AL - 186/187/188/189/190/191 - XX - XX

AL	Series indicator (airfield lighting)
186	Approach, white (03 LEDs)
187	Runway edge, WH/WH, WH/YE or WH/RE (06 LEDs)
188	Runway end, red (02 LEDs)
189	Threshold, green (03 LEDs)
190	Threshold wing-bar, green (03 LEDs)
191	Threshold end, green/red (04 LEDs)
XX	Number of LEDs; +1 or +2 with IR LEDs (e.g. AL-186-04-WH/IR, AL-186-05-WH/IR)
XX	Colour (WH, RE, GR, YE); toe-in -35 / -45 for edge lights (e.g. AL-187-06-WH/WH-35)

Compatible accessories

AL-232-AX	Fixing system for Polaris V3
AL-229-AX	Ground mounting screw
AL-165-AX	Polaris radio remote control

Applications

Non-precision or non-instrument airfields (no ILS) · **Temporary lighting during runway works** · **Emergency and back-up lighting when the fixed system fails** · **Permanent or semi-permanent solar-charged installations** · **Remote, military or temporary airstrips without mains power**