



SP-401H SOLAR RUNWAY APPROACH LIGHT

HIGH INTENSITY



		Compliance: ICAO Annex 14 Vol. I (7th. Edition, July 2016)
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FEATURES

- Applicable for IFR Runways (CAT I, II, III)
- Controlled via wireless mesh type network
- Operates on solar energy
- Hybrid version available: solar + 230 VAC / 6.6A

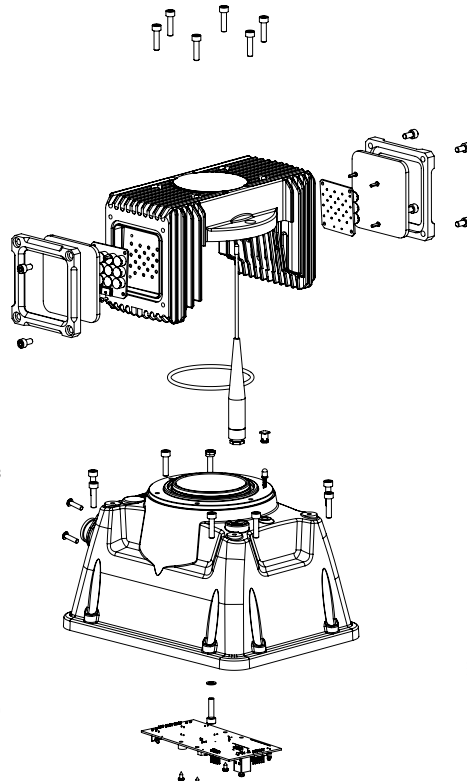
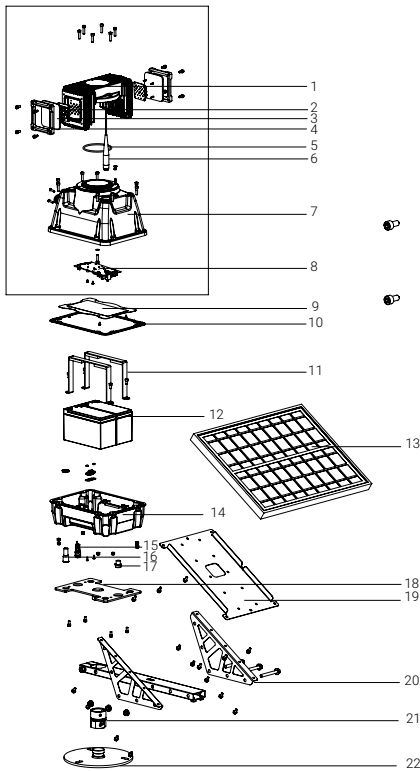
APPLICATION

Unidirectional optics; designed for permanent usage on Precision Approach Runways (CAT I, II, III) in regions without access to electricity.

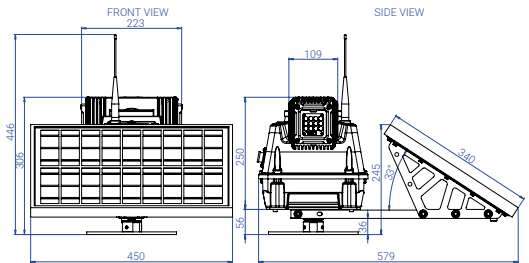
TECHNICAL SPECIFICATIONS

Optics	
<ul style="list-style-type: none"> • 16.000 cd light output (tested by accredited laboratory) • Unidirectional type • LED lifespan: 100.000 hrs • Maximum power consumption: 45 W • Color: white • User-replaceable 	
Battery	
Standard battery	<ul style="list-style-type: none"> • 2x built-in batteries, user-replaceable, air transportable • Autonomy: 280 hrs (minimum intensity) • Total capacity: 216W (2x9Ah/12V) • Deep-cycle VRLA, 12V/9Ah (available worldwide) • Lifespan: 1.200 cycles (designed for 4-5 years)
Cyclon battery (Arctic Pack)	<ul style="list-style-type: none"> • 1x built-in battery, user-replaceable, air transportable • Autonomy: 100 hrs (minimum intensity) • Total capacity: 120W (10Ah/12V) • Lifespan: 300 cycles (designed for 10-15 years)
Solar Power Supply	
<ul style="list-style-type: none"> • 20W solar panel, separately installed • Polycrystalline type (optional: monocrystalline) • Lifespan: 15 years • MPPT-Temp / Built-in inverter 12-36V/2A 	
Control & Monitoring	
<ul style="list-style-type: none"> • Wireless mesh type network • Operating frequency: 868 MHz (optional 2.4GHz or 433 Mhz) • Operating range: up to 1.5 km, relayed (each light is a repeater) • Operating Modes: <ul style="list-style-type: none"> Steady / Flashing / Dusk till dawn Visible / Infrared (optional) / Visible + Infrared (optional) • Activation options: <ul style="list-style-type: none"> Via ALCMS Computer Interface (requires UR-201) Via UR-201 Control & Monitoring Unit Via UR-101 Handheld Controller 	
Casing & Components	
<ul style="list-style-type: none"> • Materials <ul style="list-style-type: none"> Optical head: aluminum, glass covered by antireflective layer Casing: Lexan polycarbonate, UV-stabilized, color: aviation yellow Mounting: galvanized steel (optional: marine grade stainless steel) Frangible mounting: aluminum (tested by accredited laboratory) • Detachable antenna • Pressure stabilizing valve, transportation fuse • Battery level indicator • Carrying handle (optional) • Casing lifespan: 15 years • Dimensions (LxWxH): 579 mm x 450 mm x 306 mm • Weight: 14,1 kg 	
Safety & Reliability	
<ul style="list-style-type: none"> • Five levels of protection against system failure • Secondary power supply: backup battery • Real-time monitoring via ALCMS (Airfield Lighting Control and Monitoring System) • Emergency ON/OFF button 	
Environmental Conditions	
<ul style="list-style-type: none"> • Temperature range: -20 to 50 °C (-4 to 122 °F) Optional: -40 to 80 °C (-40 to 176 °F) • Ingress protection: IP-67 (tested by accredited laboratory) • Jet Blast Resistance: 480 kph (tested by accredited laboratory) 	
Compliance	
Photometric & Chromaticity	ICAO, Annex 14th, Volume I, 7th Edition dated July 2016, clause 5.3.9.10, Figure A2-10 & clause 5.3.1.11, Figure A2-11, Appendix 1, Figure A1-1b
Jet Blast Resistance	ICAO, Annex 14th, Volume I, 8th Edition dated July 2018. Doc 9157, Part 6, clause 3.2.2 & clause 4.9.1 FAA AC 150/5345-50B dated September 2007, clause 3.2.2
Frangibility	ICAO Doc 9157 AN901 Aerodrome Design Manual Part 6, 1st Edition dated 2006, clause 4.9 ICAO, Annex 14th, Volume I, 8th Edition dated July 2018, clause 5.3.1.3 FAA AC 150-5345-46E clause 3.4.2.1 FAA AC 150/5220-23, clause 3.2
Secondary Power Supply	ICAO, Annex 14th, Volume I, 7th Edition dated July 2016, clause 8.1.8 - 8.1.9 & clause 8.1.11
CE Declaration of Conformity	2014/53/EU RED Directive, clauses 3.1a, 3.1b, 3.2 2011/65/EU ROHS Directive, clause 4.1
Accredited Laboratory Testing	
Photometric & Chromaticity	Intertek Laboratory
Jet Blast Resistance	Warsaw Institute of Aviation The Laboratory of Aerodynamics
Frangibility	Laborex Research Laboratory
Ingress Protection	EMAG Institute of Innovative Technologies
Electromagnetic Compatibility	Military Institute of Armament Technology

TECHNICAL DRAWING



1. Aluminum radiator
2. LED optics
3. Front glass
4. Protective frame
5. O-ring under the aluminum dome
6. Radio antenna for wireless control & monitoring
7. Casing upper part
8. Micro-computer with integrated radio transceiver
9. Protective plate
10. Rubber gasket
11. Battery holder
12. 2 x batteries built-in, VRLA type 12V/9Ah
13. 20W Solar panel with standard optimal inclination
14. Casing bottom part
15. Emergency ON/OFF button
16. Transportation fuse
17. Pressure stabilizing valve
18. Mounting plate
19. Holding frame for solar panel
20. Holder for solar panel frame
21. Frangible mounting
22. Base plate



PHOTOMETRIC PERFORMANCE

White																									SP-401 HIGH INTENSITY RUNWAY EDGE LIGHT 60 M (WHITE DIRECTION)																																						
TEST AREA																				REQUIRED				RESULTS																																							
AREA 1 (BLUE PART)																				MIN. 5000 CD				MIN. 6306,29 CD																																							
AREA 2 (YELLOW PART)																				MIN. 1000 CD				AVG. 11981,9 CD																																							
AREA 3 (PINK PART)																				MIN. 500 CD				MIN. 4278,58 CD																																							
12°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4164	4216	4242	4253	4234	4194	4135	-	-	-																																	
11,5°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3930	4124	4314	4496	4661	4813	4937	5039	5112	5150	5165	5141	5087	5007	4894	4757	4599																										
11°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3811	4032	4244	4472	4686	4897	5092	5278	5429	5544	5635	5676	5693	5662	5603	5508	5379	5222	5034																								
10,5°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3840	4083	4333	4582	4837	5091	5345	5570	5785	5957	6102	6203	6253	6267	6237	6163	6058	5905	5726	5510																							
10°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3573	3840	4102	4376	4659	4941	5243	5539	5830	6080	6329	6531	6694	6813	6875	6892	6853	6766	6635	6456	6243	5991																					
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6,5°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3487	3811	4193	4576	4972	5428	5924	6468	7055	7692	8430	9258	10153	11045	11916	12637	13207	13609	13820	13876	13753	13438	12972	12298	11503	10614	9766	8956	8221	7523	6903	6357	5801	5318	4867	4451	4067	3714	3394	-	-		
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5°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3343	3691	4053	4481	4914	5354	5890	6455	7080	7779	8588	9608	10790	12057	13172	14152	14910	15476	15836	16007	16046	15951	15684	15254	14598	13739	12634	11451	10319	9282	8374	7606	6936	6306	5753	5234	4769	4348	3950	3595	3269	-	-
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V/H	10	9,5	-9	-8,5	-8	-7,5	-7	-6,5	-6	-5,5	-5	-4,5	-4	-3,5	-3	-2,5	-2	-1,5	-1	-0,5	0	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5	5,5	6	6,5	7	7,5	8	8,5	9	9,5	10	-	-	-	-	-	-	-	-	-	-	-	-										

SHIPPING DATA

Item	Dimensions of Package (LxWxH)	Gross Weight
SP-401 Lighting Unit	490 mm x 360 mm x 570 mm	16 kg
SP-401 Lighting Unit, NO BATTERIES	490 mm x 360 mm x 570 mm	10,8 kg