



SP-401S SOLAR RUNWAY THRESHOLD LIGHT

MEDIUM INTENSITY



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

- Operates 365 days on solar energy
- 5-level protection against system failure
- 250 hrs of autonomy

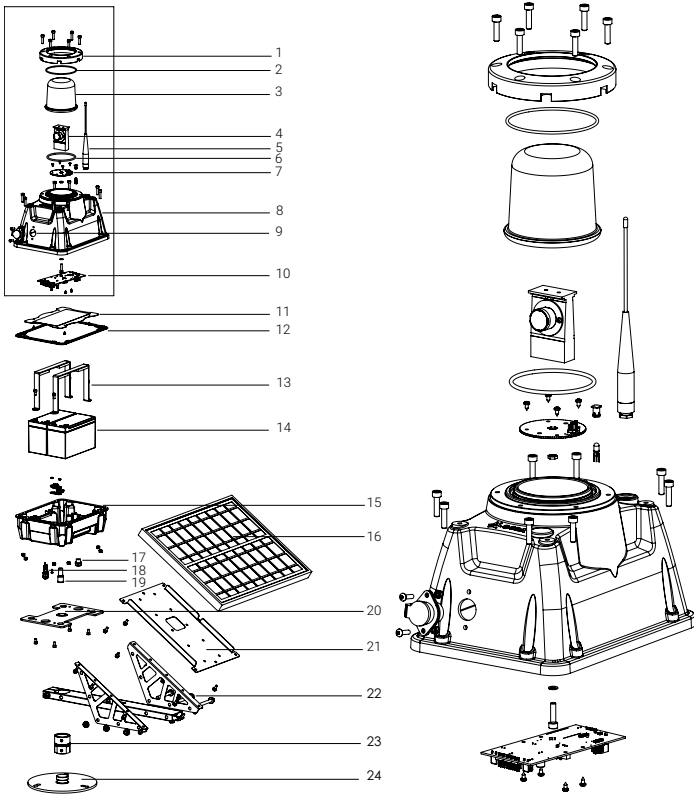
APPLICATION

Unidirectional optics; designed for permanent usage at airports located in regions without access to electricity and with high photovoltaic potential.

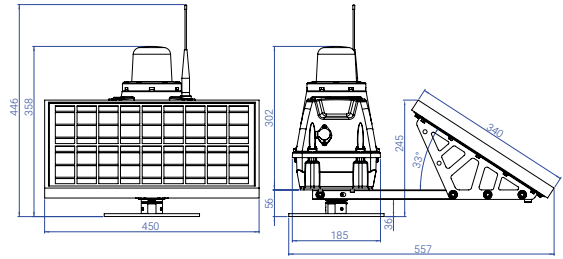
TECHNICAL SPECIFICATIONS

Optics		Safety & Reliability	
<ul style="list-style-type: none"> • 450 cd light output (tested by accredited laboratory) • Unidirectional type • LED lifespan: 100.000 hrs • Maximum power consumption: 2,4W • NVG-compatible, Infrared LEDs (optional) • Color: green • User-replaceable 		<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 	
Battery		Environmental Conditions	
Standard battery	<ul style="list-style-type: none"> • 2x built-in batteries, user-replaceable, air transportable • Autonomy: 250 hrs (minimum intensity) • Total capacity: 216W (2x9Ah/12V) • Deep-cycle VRLA, 12V/9Ah (available worldwide) • Lifespan: 1.200 cycles (designed for 4-5 years) 	<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) • Impact Resistance: IK-10 (tested by accredited laboratory) • Jet Blast Resistance: 240 kph (tested by accredited laboratory) 	
Cyclon battery (Arctic Pack)	<ul style="list-style-type: none"> • 1x built-in battery, user-replaceable, air transportable • Autonomy: 140 hrs (minimum intensity) • Total capacity: 120W (10Ah/12V) • Lifespan: 300 cycles (designed for 10-15 years) 	Compliance	
Solar Power Supply		Photometric & Chromaticity	ICAO, Annex 14th, Volume I, 7th Edition dated July 2016, clause 5.3.10.9, Appendix 1, Figure A1-1b
<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 		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
Control & Monitoring		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
<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: Steady / Flashing / Dusk till dawn Visible / Infrared (optional) / Visible + Infrared (optional) • Activation options: Via ALCMS Computer Interface (requires UR-201) Via UR-201 Control & Monitoring Unit Via UR-101 Handheld Controller 		Secondary Power Supply	ICAO, Annex 14th, Volume I, 7th Edition dated July 2016, clause 8.1.8-8.1.9 & clause 8.1.11
Casing & Components		CE Declaration of Conformity	2014/53/EU RED Directive, clauses 3.1a, 3.1b, 3.2 2011/65/EU ROHS Directive, clause 4.1
<ul style="list-style-type: none"> • Materials Dome: glass, UV-resistant 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): 557 mm x 450 mm x 358 mm • Weight: 12,4 kg 		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
		Impact Resistance	Laborex Research Laboratory
		Electromagnetic Compatibility	Military Institute of Armament Technology

TECHNICAL DRAWING



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



PHOTOMETRIC PERFORMANCE

Green

Angle	0	1	2	3	4	5	6	7	8	9	10	11	11,5	12	SP-401 RUNWAY THRESHOLD																																			
Beam diameter (mm)	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									
Beam diameter (mm)	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									
12°	-	-	-	-	-	-	-	-	-	-	-	-	-	574	577	579	568	568	555	532	500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
11,5°	-	-	-	-	-	-	-	-	-	-	-	-	504	530	556	573	579	587	577	559	530	500	462	425	390	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
11°	-	-	-	-	-	-	-	-	-	-	352	393	436	477	509	539	564	578	584	587	583	563	542	514	478	437	394	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
10,5°	-	-	-	-	-	-	-	-	-	270	308	352	395	434	481	514	550	575	591	598	600	592	578	550	525	486	443	406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
10°	-	-	-	-	-	-	-	231	268	310	353	396	435	475	511	543	568	589	595	594	588	571	548	520	484	450	411	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
9,5°	-	-	-	-	-	167	197	232	270	304	353	393	437	484	517	545	572	594	602	604	600	582	558	532	496	453	412	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
9°	-	-	-	-	142	167	197	230	270	314	350	391	436	476	517	552	580	597	608	610	606	594	568	535	499	463	419	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8,5°	-	-	-	120	142	169	198	229	268	309	356	396	443	485	521	558	584	606	619	621	613	595	571	548	510	469	426	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8°	-	-	101	119	142	166	196	229	266	303	346	393	440	479	517	554	584	598	616	623	612	599	582	547	510	471	428	391	350	309	271	238	209	181	157	136	119	103	87	-	-	-	-	-	-	-	-			
7,5°	-	-	101	119	141	166	196	227	265	304	348	394	439	481	519	558	586	607	615	615	609	596	571	539	506	468	426	387	343	304	264	232	202	175	153	132	116	100	87	-	-	-	-	-	-	-	-	-		
7°	-	85	99	118	139	164	195	228	265	308	351	397	445	489	523	558	593	612	628	627	619	608	584	554	518	481	436	392	350	310	271	236	206	179	155	134	117	100	87	75	-	-	-	-	-	-	-			
6,5°	-	85	100	117	139	164	192	225	265	303	347	390	439	480	524	553	583	605	619	623	614	603	584	552	517	477	433	391	350	309	270	237	207	180	156	134	118	102	88	78	-	-	-	-	-	-	-	-		
6°	-	84	99	116	137	161	191	222	261	299	342	387	434	479	519	552	583	604	622	623	619	604	585	559	522	483	441	399	354	313	274	240	210	181	158	136	118	103	88	77	-	-	-	-	-	-	-	-		
5,5°	-	84	98	115	137	160	190	222	261	300	344	388	432	476	515	558	584	606	622	631	625	608	587	564	523	485	439	398	358	315	274	241	213	182	157	138	119	104	90	78	-	-	-	-	-	-	-	-		
5°	71	83	98	115	135	160	190	220	257	297	341	384	426	472	508	546	575	601	614	623	621	612	587	559	525	486	439	399	354	315	275	240	208	180	157	136	119	103	90	78	69	-	-	-	-	-	-	-		
4,5°	71	82	96	112	134	158	185	219	254	293	335	380	428	470	510	551	580	605	620	623	620	607	591	561	525	486	443	400	361	315	274	239	210	181	156	136	119	103	90	80	69	-	-	-	-	-	-	-	-	
4°	70	82	95	111	131	155	182	212	248	289	330	372	419	462	504	543	574	598	614	621	623	610	585	560	526	485	443	403	359	319	278	240	209	183	158	137	120	105	92	80	71	-	-	-	-	-	-	-	-	
3,5°	69	81	95	112	133	154	182	213	249	287	329	376	420	462	504	542	573	594	611	619	621	609	588	561	528	489	445	400	356	315	273	238	208	180	157	138	120	105	92	81	70	-	-	-	-	-	-	-	-	
3°	68	80	93	110	129	152	182	213	250	287	328	371	421	467	505	544	578	597	617	627	623	612	593	568	530	487	441	400	356	312	275	239	211	184	160	138	122	107	92	80	71	-	-	-	-	-	-	-	-	
2,5°	67	79	92	108	128	151	181	211	248	286	328	372	417	464	505	542	576	600	617	626	621	612	588	564	527	487	448	401	355	315	273	240	208	180	155	136	119	103	91	79	70	-	-	-	-	-	-	-	-	
2°	67	78	91	107	126	148	177	208	245	281	326	371	416	461	502	546	580	608	626	629	627	616	594	568	534	488	446	401	358	313	277	243	213	185	160	139	121	106	93	81	71	-	-	-	-	-	-	-	-	
1,5°	-	77	91	107	126	150	177	207	244	282	327	372	423	470	516	552	580	607	626	631	627	615	597	566	533	490	442	403	359	320	278	241	210	182	158	138	121	105	92	80	-	-	-	-	-	-	-	-	-	
1°	-	77	89	105	125	148	174	207	243	282	323	370	418	464	507	549	585	607	626	636	633	625	603	573	531	487	446	400	357	314	276	241	211	183	159	139	121	106	91	79	-	-	-	-	-	-	-	-	-	
0,5°	-	75	90	107	126	148	176	212	248	284	331	376	423	469	511	550	580	613	630	637	633	622	606	571	534	493	443	401	357	314	273	239	208	182	157	138	121	105	91	81	-	-	-	-	-	-	-	-	-	
0°	-	-	90	107	125	148	176	209	244	283	323	369	420	466	509	547	581	606	629	639	637	625	600	568	529	491	446	401	360	319	278	240	210	184	158	137	121	106	92	-	-	-	-	-	-	-	-	-	-	-
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
SP-401 Lighting Unit
SP-401 Lighting Unit, NO batteries

Dimensions of Package (LxWxH)
630 mm x 270 mm x 380 mm
630 mm x 270 mm x 380 mm

Gross Weight
15 kg
9,8 kg