

SP-401S SOLAR RUNWAY THRESHOLD LIGHT



The S4GA solar runway threshold light provides a permanent, reliable lighting solution for civil and military airports, while also serving as a backup system for airports with wired lighting infrastructure.

KEY FEATURES

- Solar-Powered
- Radio-Controlled
- Individual Light Status Monitoring

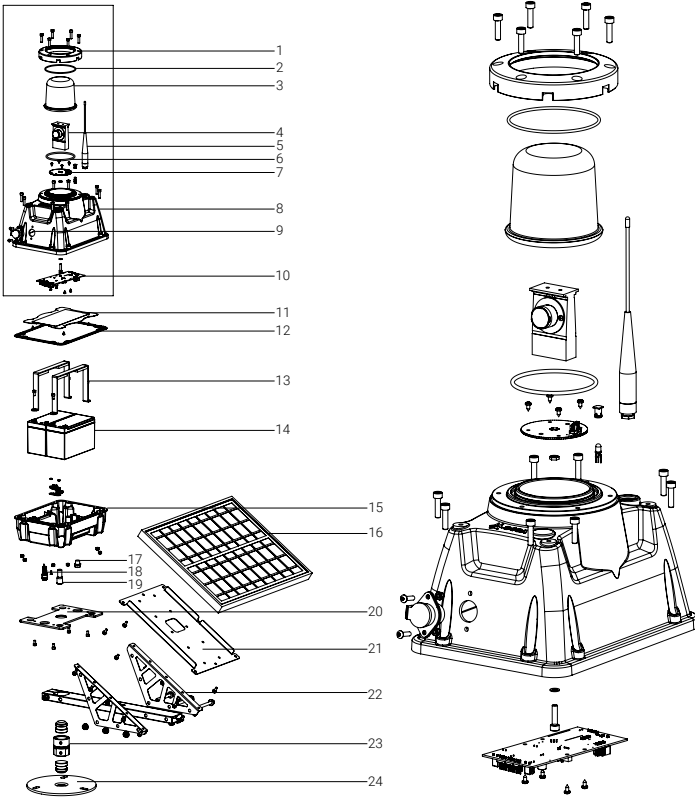


TECHNICAL SPECIFICATIONS

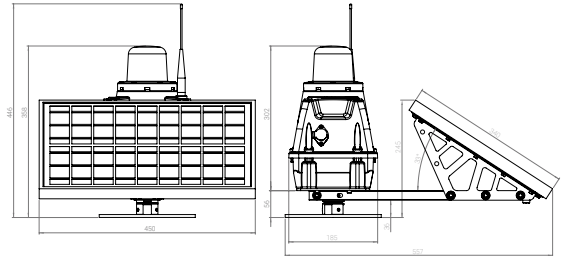
Optics	
• Color: green	
• 450 cd light output (tested by accredited laboratory)	
• Unidirectional type	
• LED lifespan: 100,000 hrs	
• Maximum power consumption: 2.4 W	
• NVG-compatible, Infrared LEDs (optional)	
• User-replaceable	
Battery	
Lead Acid (Standard)	2x built-in batteries, user-replaceable, air transportable Autonomy: 432 hrs (30% intensity) Total capacity: 216 Wh (2 x 9 Ah / 12 V) Deep-cycle VRLA, 12 V / 9 Ah (available worldwide) Lifespan: 1,200 cycles (designed for 4-5 years)
Li-ion	2x built-in batteries, user-replaceable, air transportable Autonomy: 816 hrs (30% intensity) Total capacity: 408 Wh (2 x 17 Ah / 12 V) Li-ion, 12 V / 17 Ah Lifespan: 3,000 cycles (designed for 6-7 years)
LiFePO4	2x built-in batteries, user-replaceable, air transportable Autonomy: 576 hrs (30% intensity) Total capacity: 288 Wh (2 x 12 Ah / 12 V) LiFePO4, 12 V / 12 Ah Lifespan: 3,000 cycles (designed for 6-7 years)
Lead Acid Cyclon (Arctic Pack)	1x built-in battery, user-replaceable, air transportable Autonomy: 240 hrs (30% intensity) Total capacity: 120 Wh (10 Ah / 12 V) Lifespan: 300 cycles (designed for 10-15 years)
Solar Power Supply	
• 25 W solar panel, separately installed	
• Polycrystalline type (optional: monocrystalline)	
• Lifespan: 15 years	
• MPPT-Temp / Built-in inverter 12-36 V / 2 A	
Control & Monitoring	
Communication	Wireless mesh type network
Frequency	868 MHz (optional 915 MHz, 2.4 GHz)
Wireless range	>10 km (relayed)
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
Safety & Reliability	
• 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	

Casing & Components	
• Light body materials Dome: borosilicate hardened glass, UV-resistant Casing: Lexan polycarbonate, UV-stabilized,color: aviation yellow	
• Mounting components Material: marine grade stainless steel Frangible coupling material: aluminum (tested by accredited laboratory) Type: permanent / quick release (optional)	
• Charging port: one port / two ports (optional) / drop-in charging port (optional)	
• 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	
Environmental Conditions	
• Temperature range: -20 to 50 °C (-4 to 122 °F) Optional: -40 to 80 °C (-40 to 176 °F)	
• Ingress Protection: IP-68 (tested by accredited laboratory)	
• Impact Resistance: IK-10 (tested by accredited laboratory)	
• Jet Blast Resistance: 240 kph (tested by accredited laboratory)	
Compliance	
Photometric & Chromaticity	ICAO, Annex 14th, Volume I, 9th Edition dated July 2022, clause 5.3.10.10 & clause 5.3.1.11 (green direction), Appendix 1, Figure A1-1b
	STAC Certificat de conformité de matériel de balisage aéronautique dated July 2024
Jet Blast Resistance	ICAO Doc 9157 AN901 Aerodrome Design Manual Part 6, 1st Edition dated 2006, 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, 9th Edition dated July 2022, 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, clauses 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

TECHNICAL DRAWING



1. Adapter for the 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. LED PCB
8. Casing (upper part)
9. Charging port
10. Main PCB
11. Protective plate
12. Rubber gasket
13. Battery holder
14. 2x batteries built-in
15. Casing (bottom part)
16. 25 W solar panel with standard optimal inclination
17. Pressure-stabilizing valve
18. Transportation fuse
19. Emergency ON/OFF button
20. Mounting plate
21. Holding frame for solar panel
22. Holder for solar panel frame
23. Frangible coupling
24. Base plate



PHOTOMETRIC PERFORMANCE

Green

																								SP-401 RUNWAY THRESHOLD																																								
																								TEST AREA	REQUIRED	RESULTS																																						
12°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	574	577	579	568	568	555	532	500	-	-	AREA 1 (BLUE PART)						MIN. 20 CD	MIN. 180,09 CD																							
11,5°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	504	530	556	573	579	587	577	559	530	500	462	425	390	AREA 2 (YELLOW PART)						AVERAGE MIN. 50 CD	AVG. 467,67 CD																				
11°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	352	393	436	477	509	539	564	578	584	587	583	563	542	514	478	437	394	AREA 3 (PINK PART)						MIN. 10 CD	MIN. 102,97 CD																
10,5°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	270	308	352	395	434	481	514	550	575	591	598	600	592	578	550	525	486	443	406							MIN. 5 CD	MIN. 67,30 CD														
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
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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
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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	-	
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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 with solar panel and mounting set (NO batteries)	630 mm x 270 mm x 380 mm	10.2 kg
SP-401 Lighting Unit with solar panel and mounting set (Lead Acid batteries)	630 mm x 270 mm x 380 mm	15.0 kg
SP-401 Lighting Unit with solar panel and mounting set (LiFePO4 batteries)	630 mm x 270 mm x 380 mm	12.7 kg
SP-401 Lighting Unit with solar panel and mounting set (Li-ion batteries)	630 mm x 270 mm x 380 mm	12.2 kg