WORLD’S SAFEST RUNWAY LIGHTING

SOLAR LED RUNWAY LIGHTING FOR NON-PRECISION AIRPORTS

PORTABLE AIRFIELD LIGHTING TRAILER FOR MILITARY AND CIVIL
ABOUT S4GA

S4GA is a Government-owned company that designs, manufactures and supplies world’s safest runway lighting for Non-Precision Airports. S4GA Lighting Systems are compliant with ICAO standards and certified by INTERTEK.

OUR APPLICATIONS

S4GA is open for a long-term partnership with reliable companies doing business on local markets. For airport systems integrators, we offer full training and technical project support.

TRAINING
Product training in your country
Product training in S4GA office in Poland
Online training materials for your engineers

PROJECT DELIVERY SUPPORT
On-site project supervision
Online technical support and consulting
Meetings with End Customer

AFTER-SALES SUPPORT
Installation manuals
Online technical support
Troubleshooting materials

TROUBLE SHOOTING MATERIALS
Troubleshooting manuals
Online webinars
Video tutorials

BECOME S4GA PARTNER

WORLD’S SAFFEST RUNWAY LIGHTING

FOR NON-PRECISION AIRPORTS
Complete permanent solar LED airfield lighting system

FOR MILITARY & CIVIL
Portable airfield lighting trailer

FOR AIRPORT CONSTRUCTION
Temporary airport lighting

FOR HELIPADS
Portable helipad lighting

OUR SOLUTIONS

Thessaloniki International Airport, Greece
Dhaalu Airport, Maldives
Jijiga Airport, Ethiopia
Military Airbase, Libya
Military Airbase, Argentina
Mining Company Airport, Ivory Coast
Chartres – Champhol Aerodrome, France
Domestic Airports, Seychelles
Domestic Airports, Sierra Leone
Domestic Airports, Europe

WORLD’S SAFEST RUNWAY LIGHTING FOR HELIPADS
Portable helipad lighting

PORTABLE AIRFIELD LIGHTING TRAILER
Complete permanent solar LED airfield lighting system

WORLD’S SAFEST RUNWAY LIGHTING FOR AIRPORT CONSTRUCTION
Temporary airport lighting

WORLD’S SAFEST RUNWAY LIGHTING FOR MILITARY & CIVIL
Portable airfield lighting trailer

Governement-owned Certified
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<td>SP-401 Portable Runway Threshold End Light</td>
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<td>SP-401 Portable Taxiway Light</td>
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<tr>
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</tbody>
</table>
COMPLETE SOLAR LED RUNWAY LIGHTING
FOR NON-PRECISION AIRPORTS

— SOLUTION: COMPLETE LIGHTING SYSTEM

AIRFIELD LIGHTING
SOLAR PAPI
SOLAR POWER SUPPLY
SOLAR WDI
AGL CONTROL AND MONITORING

— APPLICATION: NON-PRECISION AIRPORT

For Non-Precision Airports with increasing flight traffic, located in remote regions with high photovoltaic potential and unavailable electrical infrastructure, we offer a complete solar powered LED runway lighting system compliant with ICAO standards and certified by INTERTEK.
SP-401 LED ELEVATED RUNWAY EDGE LIGHT

MEDIUM INTENSITY

FEATURES

• Operates 365 days on solar energy
• Wireless mesh control
• 180 hrs of light autonomy
• 1.200 cd light output

APPLICATION

Medium intensity, combined optics (bi- and omnidirectional); designed for permanent usage at Non-Precision Runways located in regions without access to electricity and high photovoltaic potential.

TECHNICAL SPECIFICATIONS

Optics

• 1.200 cd light output
• Combined type, omnidirectional and bidirectional
• LED lifespan: 100,000 hrs
• Maximum power consumption: 9W
• NVG-compatible (optional)
• Color: white / white, white / yellow, white / red, red / yellow
• User-replaceable

Battery

• 2 x built-in batteries
• Autonomy: 180 hrs (minimum intensity)
• Total capacity: 216W (2x9Ah/12V)
• Deep-cycle VRLA, 12V/9Ah
• Lifespan: 1,200 cycles
• Designed for 4-5 years
• Air transportable
• User-replaceable
• Standard type, available worldwide

Solar Power Supply

• 20W solar panel, separately installed
• Poly- or monocrystalline type
• Standard optimal inclination (upon request)
• Lifespan: 15 years
• Built-in inverter 12-36V/2A

Certification

• ICAO, Annex 14th, Volume I, 7th Edition dated July 2016, clause 5.3.9.9 & Appendix 1, Figure AT-1b

Operating Modes

• Steady / Flashing / Dusk till dawn
• Visible / Infrared (optional) / Visible + Infrared (optional)

Control & Monitoring

• Wireless mesh type network
• Up to 1.5 km operating range
• Activation options:
  • Via UR-201 Control & Monitoring Unit
  • Via ALCMS Computer Interface
  • Via UR-101 Handheld Controller
• Emergency ON/OFF button
• Self-diagnostics
• Real-time monitoring via ALCMS (Airfield Lighting Control and Monitoring System)

Environmental Conditions

• Temperature range: -20 to 50 ºC (-4 to 122 ºF)
• Ingress protection: IP-67
• Wind Speed: 160 kph

Casing And Components

• Casing made of UV-stabilized Lexan polycarbonate
• Outer UV-resistant glass dome
• Detachable antenna
• Pressure stabilizing valve: yes
• Battery level indicator: yes
• Carrying handle (optional)
• Casing lifespan: 15 years
• Casing color: aviation yellow
• Frangible mounting compliant with ICAO regulations
• Dimensions (LxWxH): 528 mm x 450 mm x 442 mm
• Weight: 12.4 kg
**TECHNICAL DRAWING**

1. Aluminum adapter for glass dome
2. Rubber protection
3. Glass dome
4. LED optics, combined type omni- and bidirectional
5. Radio antenna for wireless control & monitoring
6. Micro-computer with integrated radio transceiver
7. Rubber protection
8. UV-stabilized Lexan polycarbonate casing
9. Emergency ON/OFF button
10. Charging port for solar panel
11. Protective plate
12. 2 x batteries built-in, VRLA type 12V/9Ah
13. 20W Solar panel with standard optimal inclination
14. Frangible mounting
15. Solar holder

**PHOTOMETRIC PERFORMANCE**

**WHITE DIRECTION 1**

- Average Intensity 1: 750 cd
- Average Intensity 2: 950 cd
- Average Intensity 3: 1,200 cd

**WHITE DIRECTION 2**

- Average Intensity 1: 750 cd
- Average Intensity 2: 950 cd
- Average Intensity 3: 1,200 cd

**SHIPPING DATA**

<table>
<thead>
<tr>
<th>Item</th>
<th>Dimensions of Package (LxWxH)</th>
<th>Gross Weight</th>
</tr>
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<tbody>
<tr>
<td>SP-401 Lighting Unit with accessories</td>
<td>600 mm x 400 mm x 360 mm</td>
<td>13 kg</td>
</tr>
</tbody>
</table>
SP-401 HIRL LED ELEVATED RUNWAY EDGE LIGHT

**Optics**
- 10,000 cd light output
- Bidirectional type
- LED lifespan: 100,000 hrs
- Maximum power consumption: 45W
- NVG-compatible (optional)
- Color: white / white, white / yellow, white / red, red / yellow
- User-replaceable

**Battery**
- 2 x built-in batteries
- Autonomy: 180 hrs (minimum intensity)
- Total capacity: 216W (2x9Ah/12V)
- Deep-cycle VRLA, 12V/9Ah
- Lifespan: 1,200 cycles
- Designed for 4-5 years
- Air transportable
- User-replaceable
- Standard type, available worldwide

**Solar Power Supply**
- 20W solar panel, separately installed
- Poly- or monocrystalline type
- Standard optimal inclination (upon request)
- Lifespan: 15 years
- Built-in inverter 12-36V/2A

**Certification**
- ICAO Annex 14th, Volume I, 7th Edition dated July 2016, clause 5.3.9.10 Appendix 2, Figure A2-9 or A2-1

**Operating Modes**
- Steady / Flashing / Dusk till dawn
- Visible / Infrared (optional) / Visible + Infrared (optional)

**Control & Monitoring**
- Wireless mesh type network
- Up to 1.5 km operating range
- Activation options:
  - Via UR-201 Control & Monitoring Unit
  - Via ALCMS Computer Interface
  - Via UR-101 Handheld Controller
- Emergency ON/OFF button
- Self-diagnostics
- Real-time monitoring via ALCMS (Airfield Lighting Control and Monitoring System)

**Environmental Conditions**
- Temperature range: -20 to 50 ºC (-4 to 122 ºF)
- Ingress protection: IP-67
- Wind Speed: 160 kph

**Casing And Components**
- Casing made of UV-stabilized Lexan polycarbonate
- Outer UV-resistant glass dome
- Detachable antenna
- Pressure stabilizing valve: yes
- Battery level indicator: yes
- Carrying handle (optional)
- Casing lifespan: 15 years
- Casing color: aviation yellow
- Frangible mounting compliant with ICAO regulations
- Dimensions (LxWxH): 528 mm x 450 mm x 442 mm
- Weight: 14.1 kg

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High intensity, bi-directional optics; designed for permanent usage at Non-Precision Runways located in regions without access to electricity and high photovoltaic potential.

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**Application**

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**Features**
- Operates 365 days on solar energy
- Wireless mesh control
- 180 hrs of light autonomy
- 10,000 cd light output

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**Technical Specifications**

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**Compliance:**
TECHNICAL DRAWING

1. Aluminum cooling block
2. LED optics, bi-directional type
3. Glass optical cover
4. Clip for optical cover
5. Radio antenna for wireless control & monitoring
6. Micro-computer with integrated radio transceiver
7. Cooling block gasket
8. UV-stabilized Lexan polycarbonate casing
9. Emergency ON/OFF button
10. Charging port for solar panel
11. Protective plate
12. 2 x batteries built-in, VRLA type 12V/9Ah
13. 20W Solar panel with standard optimal inclination
14. Frangible mounting
15. Solar holder

PHOTOMETRIC PERFORMANCE

White

| Zone 1 Grid | Average 1253 cd, Min 796 cd, Max 1796 cd |
| Zone 2 Circle | Average 1006 cd, Min 4792 cd, Max 7975 cd |
| Zone 3 Circle | Average 952 cd, Min 7004 cd, Max 13413 cd |
| Zone 4 Circle | Average 4017 cd, Min 3542 cd, Max 4881 cd |

Yellow

| Zone 1 Grid | Average 9150 cd, Min 3964 cd, Max 5672 cd |
| Zone 2 Circle | Average 4077 cd, Min 3968 cd, Max 5747 cd |
| Zone 3 Circle | Average 1934 cd, Min 1847 cd, Max 2230 cd |

SHIPPING DATA

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<th>Gross Weight</th>
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<td>SP-401 Lighting Unit with accessories</td>
<td>600 mm x 400 mm x 360 mm</td>
<td>15 kg</td>
</tr>
</tbody>
</table>
**SP-401 LED ELEVATED RUNWAY THRESHOLD END LIGHT**

**FEATURES**
- Operates 365 days on solar energy
- Wireless mesh control
- 280 hrs of light autonomy

**APPLICATION**
Bidirectional optics; designed for permanent usage at Non-Precision Runways located in regions without access to electricity and high photovoltaic potential.

**TECHNICAL SPECIFICATIONS**

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<tr>
<th>Optics</th>
<th>Operating Modes</th>
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<td>• 320(red)/450(green) cd light output</td>
<td>• Steady / Flashing / Dusk till dawn</td>
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<tr>
<td>• Bidirectional, unidirectional type</td>
<td>• Visible / Infrared (optional) / Visible + infrared (optional)</td>
</tr>
<tr>
<td>• LED lifespan: 100,000 hrs</td>
<td></td>
</tr>
<tr>
<td>• Maximum power consumption: 1,8 W</td>
<td></td>
</tr>
<tr>
<td>• NVG-compatible (optional)</td>
<td></td>
</tr>
<tr>
<td>• Color: red/green, red, green</td>
<td></td>
</tr>
<tr>
<td>• User-replaceable</td>
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<table>
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<tr>
<th>Battery</th>
<th>Control &amp; Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 2 x built-in batteries</td>
<td>• Wireless mesh type network</td>
</tr>
<tr>
<td>• Autonomy: 280 hrs (minimum intensity)</td>
<td>• Up to 1.5 km operating range</td>
</tr>
<tr>
<td>• Total capacity: 216W (2x9Ah/12V)</td>
<td>• Activation options:</td>
</tr>
<tr>
<td>• Deep-cycle VRLA, 12V/9Ah</td>
<td>• Via UR-201 Control &amp; Monitoring Unit</td>
</tr>
<tr>
<td>• Lifespan: 1,200 cycles</td>
<td>• Via ALCMS Computer Interface</td>
</tr>
<tr>
<td>• Designed for 4-5 years</td>
<td>• Via UR-101 Handheld Controller</td>
</tr>
<tr>
<td>• Air transportable</td>
<td>• Emergency ON/OFF button</td>
</tr>
<tr>
<td>• User-replaceable</td>
<td>• Self-diagnostics</td>
</tr>
<tr>
<td>• Standard type, available worldwide</td>
<td>• Real-time monitoring via ALCMS (Airfield Lighting Control and Monitoring System)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Solar Power Supply</th>
<th>Environmental Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 20W solar panel, separately installed</td>
<td>• Temperature range: -20 to 50 ºC (-4 to 122 ºF)</td>
</tr>
<tr>
<td>• Poly- or monocrystalline type</td>
<td>• Ingress protection: IP-67</td>
</tr>
<tr>
<td>• Standard optimal inclination (upon request)</td>
<td>• Wind Speed: 160 kph</td>
</tr>
<tr>
<td>• Lifespan: 15 years</td>
<td></td>
</tr>
<tr>
<td>• Built-in inverter 12-36V/2A</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Certification</th>
<th>Casing And Components</th>
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<tbody>
<tr>
<td>• ICAO, Annex 14th, Volume I, 7th Edition dated July 2016, clause 5.3.10.9.5.3.11.4 &amp; Appendix 1, Figure A1-1b</td>
<td>• Casing made of UV-stabilized Lexan polycarbonate</td>
</tr>
<tr>
<td></td>
<td>• Detachable antenna</td>
</tr>
<tr>
<td></td>
<td>• Pressure stabilizing valve: yes</td>
</tr>
<tr>
<td></td>
<td>• Battery level indicator: yes</td>
</tr>
<tr>
<td></td>
<td>• Carrying handle (optional)</td>
</tr>
<tr>
<td></td>
<td>• Casing lifespan: 15 years</td>
</tr>
<tr>
<td></td>
<td>• Casing color: aviation yellow</td>
</tr>
<tr>
<td></td>
<td>• Frangible mounting compliant with ICAO regulations</td>
</tr>
<tr>
<td></td>
<td>• Dimensions (LxWxH): 528 mm x 450 mm x 442 mm</td>
</tr>
<tr>
<td></td>
<td>• Weight: 12,4 kg</td>
</tr>
</tbody>
</table>
**TECHNICAL DRAWING**

1. Aluminum adapter for glass dome
2. Rubber protection
3. Glass dome
4. LED optics, bi- or unidirectional type
5. Radio antenna for wireless control & monitoring
6. Micro-computer with integrated radio transceiver
7. Rubber protection
8. UV-stabilized Lexan polycarbonate casing
9. Emergency ON/OFF button
10. Charging port for solar panel
11. Protective plate
12. 2 x batteries built-in, VRLA type 12V/9Ah
13. 20W Solar panel with standard optimal inclination
14. Frangible mounting
15. Solar holder

**PHOTOMETRIC PERFORMANCE**

![PHOTOMETRIC PERFORMANCE GRAPHICS]

**SHIPPING DATA**

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<tr>
<td>SP-401 Lighting Unit with accessories</td>
<td>600 mm x 400 mm x 360 mm</td>
<td>13 kg</td>
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</tbody>
</table>
SP-401 LED ELEVATED APPROACH LIGHT

**FEATURES**
- Operates 365 days on solar energy
- Wireless mesh control
- 180 hrs of light autonomy
- 1,200 cd light output

**APPLICATION**
Unidirectional optics; designed for permanent usage at Non-Precision Runways located in regions without access to electricity and high photovoltaic potential.

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Optics</th>
<th>Operating Modes</th>
<th>Control &amp; Monitoring</th>
<th>Environmental Conditions</th>
<th>Casing And Components</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• 1,200 cd light output</td>
<td>• Steady / Flashing / Dusk till dawn</td>
<td>• Temperature range: -20 to 50 °C (-4 to 122 °F)</td>
<td>• Casing made of UV-stabilized Lexan polycarbonate</td>
</tr>
<tr>
<td>• Unidirectional type</td>
<td>• Visible / Infrared (optional)</td>
<td>• Wireless mesh type network</td>
<td>• Ingress protection: IP-67</td>
<td>• Outer UV-resistant glass dome</td>
</tr>
<tr>
<td>• LED lifespan: 100,000 hrs</td>
<td>• Visible + Infrared (optional)</td>
<td>• Up to 1.5 km operating range</td>
<td>• Wind Speed: 160 kph</td>
<td>• Detachable antenna</td>
</tr>
<tr>
<td>• Maximum power consumption: 3.9W</td>
<td>• Activation options:</td>
<td>• Activation options:</td>
<td></td>
<td>• Pressure stabilizing valve: yes</td>
</tr>
<tr>
<td>• NVG-compatible (optional)</td>
<td>• Via UR-201 Control &amp; Monitoring Unit</td>
<td>• Via ALCMS Computer Interface</td>
<td></td>
<td>• Battery level indicator: yes</td>
</tr>
<tr>
<td>• Color: white</td>
<td>• Via UR-101 Handheld Controller</td>
<td>• Via UR-101 Handheld Controller</td>
<td></td>
<td>• Carrying handle (optional)</td>
</tr>
<tr>
<td>• User-replaceable</td>
<td>• Emergency ON/OFF button</td>
<td>• Self-diagnostics</td>
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<td>• Casing lifespan: 15 years</td>
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<td>• Wireless mesh type network</td>
<td>• Real-time monitoring via ALCMS (Airfield Lighting Control and Monitoring System)</td>
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<td>• Casing color: aviation yellow</td>
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<td>• Air transportable</td>
<td>• Activation options:</td>
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<td>• Dimensions (LxWxH): 528 mm x 450 mm x 442 mm</td>
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<td>• Via ALCMS Computer Interface</td>
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<td>• Weight: 12.4 kg</td>
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<td></td>
<td>• Standard type, available worldwide</td>
<td>• Via UR-101 Handheld Controller</td>
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<td>• 2 x built-in batteries</td>
<td>• Self-diagnostics</td>
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<td></td>
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<td>• Autonomy: 180 hrs (minimum intensity)</td>
<td>• Standard optimal inclination (upon request)</td>
<td>• Real-time monitoring via ALCMS (Airfield Lighting Control and Monitoring System)</td>
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<td>• Total capacity: 216W (2x9Ah/12V)</td>
<td>• Lifespan: 1,200 cycles</td>
<td>• Activation options:</td>
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<tr>
<td>• Deep-cycle VRLA, 12V/9Ah</td>
<td>• Designed for 4-5 years</td>
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<td></td>
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<td>• Poly- or monocrystalline type</td>
<td>• Lifespan: 15 years</td>
<td>• Activation options:</td>
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<td>• Standard optimal inclination (upon request)</td>
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<td>• Outer UV-resistant glass dome</td>
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<td>• Pressure stabilizing valve: yes</td>
<td>• Self-diagnostics</td>
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<td>• Battery level indicator: yes</td>
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<td>• Casing color: aviation yellow</td>
<td>• Via UR-101 Handheld Controller</td>
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<td>• Frangible mounting compliant with ICAO regulations</td>
<td>• Via ALCMS Computer Interface</td>
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<td>• Dimensions (LxWxH): 528 mm x 450 mm x 442 mm</td>
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<td>• Weight: 12.4 kg</td>
<td>• Via ALCMS Computer Interface</td>
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**Battery**
- 2 x built-in batteries
- Autonomy: 180 hrs (minimum intensity)
- Total capacity: 216W (2x9Ah/12V)

**Solar Power Supply**
- 20W solar panel, separately installed
- Poly- or monocrystalline type
- Standard optimal inclination (upon request)

**Certification**
- ICAO, Annex 14th, Volume I, 7th Edition dated July 2016, clause 5.3.9.9 & Appendix 1, Figure A1-1b
WORLD’S SAFEST RUNWAY LIGHTING

TECHNICAL DRAWING

1. Aluminum adapter for glass dome
2. Rubber protection
3. Glass dome
4. LED optics, unidirectional type
5. Radio antenna for wireless control & monitoring
6. Micro-computer with integrated radio transceiver
7. Rubber protection
8. UV-stabilized Lexan polycarbonate casing
9. Emergency ON/OFF button
10. Charging port for solar panel
11. Protective plate
12. 2 x batteries built-in, VRLA type 12V/9Ah
13. 20W Solar panel with standard optimal inclination
14. Frangible mounting
15. Solar holder

PHOTOMETRIC PERFORMANCE

Gross Weight
13 kg

Dimensions of Package (LxWxH)
600 mm x 400 mm x 360 mm

Item
SP-401 Lighting Unit with accessories

Shipping Data
SP-401 LED ELEVATED TAXIWAY EDGE LIGHT

---

**FEATURES**

- Operates 365 days on solar energy
- Wireless mesh control
- 600 hrs of light autonomy

---

**APPLICATION**

Omnidirectional optics; designed for permanent usage at Non-Precision Runways located in regions without access to electricity and high photovoltaic potential.

---

**TECHNICAL SPECIFICATIONS**

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<tr>
<th>Optics</th>
<th>Operating Modes</th>
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<td>• 11 cd light output (peak)</td>
<td>• Steady / Flashing / Dusk till dawn</td>
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<th>Control &amp; Monitoring</th>
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<td>• Wireless mesh type network</td>
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<td>• Autonomy: 600 hrs (minimum intensity)</td>
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<td>• Deep-cycle VRLA, 12V/9Ah</td>
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<td>• Lifespan: 1,200 cycles</td>
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<td>• Designed for 4-5 years</td>
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<td>• Air transportable</td>
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<td>• Weight: 12.4 kg</td>
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</table>
1. Aluminum adapter for glass dome
2. Rubber protection
3. Glass dome
4. LED optics, omnidirectional type
5. Radio antenna for wireless control & monitoring
6. Micro-computer with integrated radio transceiver
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8. UV-stabilized Lexan polycarbonate casing
9. Emergency ON/OFF button
10. Charging port for solar panel
11. Protective plate
12. 2 x batteries built-in, VRLA type 12V/9Ah
13. 20W Solar panel with standard optimal inclination
14. Frangible mounting
15. Solar holder

**PHOTOMETRIC PERFORMANCE**

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**SHIPPING DATA**

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<th>Item</th>
<th>Dimensions of Package (LxWxH)</th>
<th>Gross Weight</th>
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<tbody>
<tr>
<td>SP-401 Lighting Unit with accessories</td>
<td>600 mm x 400 mm x 360 mm</td>
<td>13 kg</td>
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</tbody>
</table>
SP-401 LED ELEVATED OBSTRUCTION LIGHT

Type A Low Intensity

Features

- Operates 365 days on solar energy
- Wireless mesh control
- 280 hrs of light autonomy

Technical Specifications

Optics

- 37 cd light output (peak)
- Omnidirectional type
- LED lifespan: 100,000 hrs
- Maximum power consumption: 1.8 W
- NVG-compatible (optional)
- Color: red
- User-replaceable

Battery

- 2 x built-in batteries
- Autonomy: 280 hrs (minimum intensity)
- Total capacity: 216W (2x9Ah/12V)
- Deep-cycle VRLA, 12V/9Ah
- Lifespan: 1,200 cycles
- Designed for 4-5 years
- Air transportable
- User-replaceable
- Standard type, available worldwide

Solar Power Supply

- 20W solar panel, separately installed
- Poly- or monocrystalline type
- Standard optimal inclination (upon request)
- Lifespan: 15 years
- Built-in inverter 12-36V/2A

Certification

- ICAO, Annex 14th, Volume I, 7th Edition dated July 2016, Table 6-2 & Appendix 1, Figure A1-1b

Operating Modes

- Steady / Flashing / Dusk till dawn
- Visible / Infrared (optional) / Visible + Infrared (optional)

Control & Monitoring

- Wireless mesh type network
- Up to 1.5 km operating range
- Activation options:
  - Via UR-201 Control & Monitoring Unit
  - Via ALCMS Computer Interface
  - Via UR-101 Handheld Controller
- Emergency ON/OFF button
- Self-diagnostics
- Real-time monitoring via ALCMS (Airfield Lighting Control and Monitoring System)

Environmental Conditions

- Temperature range: -20 to 50 ºC (-4 to 122 ºF)
- Ingress protection: IP-67
- Wind Speed: 160 kph

Casing and Components

- Casing made of UV-stabilized Lexan polycarbonate
- Outer UV-resistant glass dome
- Detachable antenna
- Pressure stabilizing valve: yes
- Battery level indicator: yes
- Carrying handle (optional)
- Casing lifespan: 15 years
- Casing color: aviation yellow
- Frangible mounting compliant with ICAO regulations
- Dimensions (LxWxH): 528 mm x 450 mm x 442 mm
- Weight: 12.4 kg

Application

Low intensity obstruction aviation light; designed for usage as Obstacle light in Airports or Helipads located in regions without access to electricity and high photovoltaic potential.

Features

- Operates 365 days on solar energy
- Wireless mesh control
- 280 hrs of light autonomy

Application

Low intensity obstruction aviation light; designed for usage as Obstacle light in Airports or Helipads located in regions without access to electricity and high photovoltaic potential.

Certification

- ICAO, Annex 14th, Volume I, 7th Edition dated July 2016, Table 6-2 & Appendix 1, Figure A1-1b
1. Aluminum adapter for glass dome
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3. Glass dome
4. LED Optics, omnidirectional type
5. Radio antenna for wireless control & monitoring
6. Micro-computer with integrated radio transceiver
7. Rubber protection
8. UV-stabilized Lexan polycarbonate casing
9. Emergency ON/OFF button
10. Charging port for solar panel
11. Protective plate
12. 2 x batteries built-in, VLRA type 12V/9Ah
13. 20W Solar panel with standard optimal inclination
14. Frangible mounting
15. Solar holder

**PHOTOMETRIC PERFORMANCE**

**SHIPPING DATA**

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<thead>
<tr>
<th>Item</th>
<th>Dimensions of Package (LxWxH)</th>
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<tbody>
<tr>
<td>SP-401 Lighting Unit with accessories</td>
<td>600 mm x 400 mm x 360 mm</td>
<td>13 kg</td>
</tr>
</tbody>
</table>
SOLAR PAPI
PRECISION APPROACH PATH INDICATOR

Compliance:

FEATURES
- Simple Design
- Sharp Color Transition
- Controlled Positioning
- User-Replaceable Optic Elements
- Corrosion Resistant

APPLICATION
Halogen two-projector PAPI with solar power supply; designed for permanent usage at Non-Precision Runways located in regions with unavailable electrical infrastructure and high photovoltaic potential.

TECHNICAL SPECIFICATIONS

Optics
- Two-projector PAPI unit
- Halogen lamp standard type 200W, PK30d
- Vertical adjustment: 0 - 10°
- Transition: Better than 3 minutes of arc on beam axis
- Filter: Dichroic on borosilicate glass Signal Red to BS 1376
- Azimuth range: +8˚ (ICAO), +10˚ (FAA) or +15˚ (CAP 168)

Power Supply
- Solar power supply (check Solar Engine brochure)
- 230 VAC (requires PAPI Controller)
- Optional 6.6A electrical power supply

Wireless Control
- Via UR-201 Control & Monitoring Unit
- Via UR-101 Handheld Controller
- Via ALCMS Computer Interface

Environmental Conditions
- Temperature range: -20 to 50 °C (-4 to 122 °F)
- Ingress protection: IP-65
- Wind Speed: 160 kph

Casing And Components
- PROJECTORS: 1.6mm aluminium sheet, black anodized external surface of covers aviation yellow epoxy paint
- FASTENERs: stainless steel, monel
- BASEs: Cast aluminium, heat treated and stabilised, black anodised finish
- PILLAR COUPLING: Malleable iron, hot dipped zinc coated
- SUPPORT PILLARS: Aluminium alloy tubing, natural anodised
- FRANGIBLE FOOT: Cast aluminium, natural anodised
- BALL JOINTS: Glass filled black nylon
- Color: aviation yellow

Compliance
- ICAO, Annex 14th, Volume I, 6th Edition dated 2013, clauses 5.3.5.28 – 5.3.5.40, Figure A2-23 Appendix 1, 2.1.1

PAPI VISUAL INDICATION

- TOO HIGH
- SLIGHTLY HIGH
- ON GLIDE PATH
- SLIGHTLY LOW
- TOO LOW
TECHNICAL DRAWING

1. Top cover
2. Dichroic red/white glass
3. Lens
4. Front glass
5. Projector body
6. Base frame
7. Aluminium leg
8. K.K. Fitting
9. Aluminium leg
10. Frangible ground fitting

PHOTOMETRIC PERFORMANCE

White/Red Light emitted Luminous intensity (cd)

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<td>0</td>
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<td>0280</td>
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<td>0196</td>
<td>0674</td>
<td>0664</td>
<td>0016</td>
<td>20</td>
</tr>
</tbody>
</table>

Zones for ICAO Annex 14, Vol 1 (2013), Fig A2-23 shown

1. Minimum Intensity for cone to ±2.0° (solid) and ±2.5° (dashed)
2. Minimum Intensity for cone to ±4.0° (solid) and ±4.5° (dashed)
3. Minimum Intensity for cone to ±6.0° (solid) and ±7.5° (dashed)

DIMENSIONS

PROJECTOR BASE PLATE

Shipping Data

<table>
<thead>
<tr>
<th>Item</th>
<th>Dimensions of Package (LxWxH)</th>
<th>Gross Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAPI, 4 x Projector Unit</td>
<td>560 x 650 x 750 mm</td>
<td>52 kg</td>
</tr>
<tr>
<td>Clinometer</td>
<td>360 x 290 x 100 mm</td>
<td>1 kg</td>
</tr>
</tbody>
</table>
SOLAR WIND DIRECTION INDICATOR

APPLICATION

SAGA WDI is airport windsock compliant with ICAO standards; designed for permanent usage at Non-Precision Runways located in regions with unavailable electrical infrastructure and high photovoltaic potential.

FEATURES

- Easy Installation
- Weather Resistant
- Illuminated, Solar Powered

TECHNICAL SPECIFICATIONS

**Physical**

- **MAST:** Height 7.40 m (adjustable) 
  Reinforced mast: yes
- **WIND SOCK:** Dimensions 100 x 450 cm 
  Color: Red/White 
  Swivel Frame: yes
- **Protection:** galvanized steel
- **Mounting:** anchorage block
- **Braces dimensions:** 3x120 cm

**Illumination**

- Internal lighting
- Obstruction light: type A LED obstacle light installed on top of the mast

**Power Supply**

- **SOLAR ENGINE**  
  280W solar panel 
  2 x batteries 100Ah/12V
- **230 VAC power supply** (optional)
- **6.6 A electrical grid** (optional)

**Environmental Conditions**

- Minimum temperature: -60ºC
- Humidity: 100%
- Wind Speed: 160 kph

**Certification**

- CE-EN60947-1
- CEI60364, NF C15-100
- 2014/35/UE
- ISO 9001:2008

WORLD’S SAFEST RUNWAY LIGHTING

TECHNICAL DRAWING

- LED OBSTACLE LIGHT
- INTERNAL LIGHT
- WIND SOCK
- REINFORCED MAST
- ANCHORAGE BLOCK
- SOLAR ENGINE
- CONCRETE FOUNDATIONS

WIND DIRECTION INDICATOR PHOTOS
UR-3 PAPI CONTROLLER CONVERTER

UR-3 PAPI Controller-Converter is designed to provide remote control over S4GA Precision Approach Path Indicator (PAPI) units. Adding UR-3 to S4GA PAPI allows user to remotely control and change intensity of PAPI via UR-201 Control & Monitoring Unit and UR-101 Handheld Controller.

UR-3 Controller-Converter also provides ability to power S4GA PAPI using standard 230 VAC electrical supply. No need for costly 6.6A grid, powered by constant current regulator.

FEATURES

1. Applicable for S4GA halogen PAPI
2. Allows remote PAPI activation
3. Allows to power PAPI via solar engine, power bank, generator set.

CE COMPLIANCE

1. 2014/35/UE
2. 2014/30/UE
3. 2011/65/UE
4. 2014/53/UE

TECHNICAL SPECIFICATIONS

**Electrical**

<table>
<thead>
<tr>
<th>Power input</th>
<th>230 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformer</td>
<td>Toroidal type 230VAC 600VA (available steps: 2.8, 3.4, 4.2, 5.4, 6.6 Amp)</td>
</tr>
<tr>
<td>Power outlets</td>
<td>2 x 200 W</td>
</tr>
</tbody>
</table>

**Communication between Controller and UR-201 / UR-101**

<table>
<thead>
<tr>
<th>Type</th>
<th>Wireless mesh type network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating range</td>
<td>Up to 1,500 meters</td>
</tr>
<tr>
<td>External antenna</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**PAPI Remote Control**

<table>
<thead>
<tr>
<th>PAPI intensity setup</th>
<th>3-step via UR-201, UR-101</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5-step via ALCMS</td>
</tr>
<tr>
<td>Activation options</td>
<td>Via UR-201 Control &amp; Monitoring Unit</td>
</tr>
<tr>
<td></td>
<td>Via ALCMS Computer Interface</td>
</tr>
<tr>
<td></td>
<td>Via UR-101 Handheld Controller</td>
</tr>
<tr>
<td>Emergency ON/OFF button</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Enclosure**

<table>
<thead>
<tr>
<th>Type</th>
<th>CS-33/150</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Galvanized steel</td>
</tr>
<tr>
<td>Color</td>
<td>Grey</td>
</tr>
<tr>
<td>Dimensions</td>
<td>300 mm x 300 mm x 150 mm</td>
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</tbody>
</table>

**Compliance**

<table>
<thead>
<tr>
<th>2014/35/UE</th>
<th>Low Voltage Directive</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014/30/UE</td>
<td>Electromagnetic Compatibility Directive</td>
</tr>
<tr>
<td>2011/65/UE</td>
<td>ROHS Directive</td>
</tr>
</tbody>
</table>

**SHIPPING DATA**

<table>
<thead>
<tr>
<th>Dimensions of Package (LxWxH)</th>
<th>Gross Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>400 mm x 335 mm x 225 mm</td>
<td>12.5 kg</td>
</tr>
</tbody>
</table>
**UR-201 CONTROL AND MONITORING UNIT**

**HARDWARE OF ALCMS**

**FEATURES**
- Airfield Lighting Control Panel
- Automatic Failure Alarm via SMS
- Remote Activation of Airfield Lighting (via SMS, via VHF)
- Remote Airfield Lighting Diagnostics

**CE COMPLIANCE**
- 2014/35/UE
- 2014/30/UE
- 2011/65/UE

UR-201 Control & Monitoring Unit is a hardware element of S4GA ALCMS. It is designed to provide User with ability to remotely control and monitor S4GA Solar LED Runway Lighting.

UR-201 Unit can be optionally equipped with computer-based ALCMS offering real-time individual light monitoring (check ALCMS Basic, ALCMS Advanced product brochures)

- USB PORT
- HDMI PORT
- ANTENNA PORTS
- EARTH PORT
- POWER SUPPLY UNIT
- LIGHTNING ARRESTER
- BACK-UP POWER SOURCE
- CIRCUIT BREAKER
- VHF MODULE
- INDUSTRIAL MICRO-COMPUTER
- GSM MODULE
TECHNICAL SPECIFICATIONS

Control & Monitoring
- Adjust lighting intensity: Yes
- Select operating mode: Yes
- Remote monitoring of the SP-401 unit(s) key parameters: Yes
- Automatic failure alarm (via SMS): Battery level of any lighting unit drops below 30%
- Any lighting unit stops responding to UR-201
- Power supply of UR-201 Units stops

Communication between Remote Control Unit and the Lights
- Type: Wireless
- Operating Range: Up to 1,500 meters
- Radio transceiver (frequency/ power output): 868 MHz, 16 mW
- External antenna: Yes

External Switches
- On / Off: Yes
- Light intensity: Yes (3 for each group)
- Operating mode: Yes (3 for each group)
- Timer: Yes
- Remote: Yes

Power Source
- Primary power source: 90 – 240 VAC
- Back-up power source: Battery 18Ah, 12V
- Back-up battery operating time: 24 hrs

Remote Activation
- VHF (pilot radio): Yes
- GSM (cell phone): Yes

Lighting Protection
- Separate lightning arrester: Yes
- Lightning arrester grounding: Yes

External Ports
- VHF antenna: Yes
- Lighting system antenna: Yes
- GSM antenna: Yes
- USB: Yes
- HDMI: Yes

ACCESSORIES INCLUDED
- **CABLES**
  - VHF cable, length 10 m
  - 868 MHz cable, length 10 m

- **ANTENNAS**
  - 868 MHz antenna
  - GSM Antenna 3G/4G
  - VHF antenna comet AB380

SHIPPING DATA

<table>
<thead>
<tr>
<th>Item</th>
<th>Dimensions of Package (LxWxH)</th>
<th>Gross Weight</th>
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</thead>
<tbody>
<tr>
<td>UR-201 Unit</td>
<td>650 mm x 510 mm x 350 mm</td>
<td>18 kg</td>
</tr>
<tr>
<td>Accessories (cables,</td>
<td>1500 mm x 100 mm x 20 mm</td>
<td>8 kg</td>
</tr>
<tr>
<td>antennas)</td>
<td></td>
<td></td>
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</tbody>
</table>
ALCMS Basic is an Airfield Lighting Control and Monitoring System designed to provide full remote control and monitoring of solar LED runway lighting from the TWR or maintenance room. S4GA ALCMS consists of Computer Interface integrated in UR-201 Control and Monitoring Unit. It features open interface for integrating with existing AGL control system.

**FEATURES**
- Individual Light Status Display
- 3 Groups of Lights
- 3-step Light Intensity Setup
- Operating Mode Setup

**CONTROL**
- Grouping of entire airfield lighting in 3 major groups
- Control of entire lighting system and groups of lights
- 3-step intensity level setup for a particular group of runway lights and PAPI
- Operating modes setup: flashing, dusk-till-dawn, pilot-activated, GSM-activated
- Timer setup (for pilot-activated and GSM-activated modes)

**SYSTEM OVERVIEW**
S4GA ALCMS is an Airfield Lighting Control and Monitoring System designed to provide full remote control and monitoring of solar LED runway lighting from the TWR or maintenance room. S4GA ALCMS consists of Computer Interface integrated in UR-201 Control and Monitoring Unit. It features open interface for integrating with existing AGL control system.

**ALCMS Bas** is designed for airports with simple runway lighting system. Typically, it includes a runway and one taxiway leading to an apron. ALCMS Basic allows to control entire system and groups of lights separately (e.g. runway, threshold and taxiway lights) as well as report about individual light statuses.

- Real-time monitoring: YES
- Automatic failure alarm: YES
- Operating mode setup: YES
- Individual light status indication: YES
- Grouping of airfield lights: 3
- Light intensity steps: 3
- Separate taxiways control: N/A
- Airfield layout: N/A

For airports with more advanced AGL system (including multiple taxiways, approach lighting, temporarily closed areas), S4GA offers ALCMS Advanced.
MONITORING

- Real-time individual light status monitoring: battery level, charging speed, temperature, operating status, charging efficiency of solar panel
- Monitoring of UR-201 Control Module: GSM signal strength, back-up battery level, power connection
- Immediate light failure detection and report: light unavailable, critical battery level
- Color indication of current status in 4 monitored areas: Lamps, Power, GSM, VHF
- Color indication of current light status:

  - RED: LAMP IS OFFLINE
  - AMBER: THE BATTERY LEVEL IS BELOW 30%
  - GREY: THE UNIT IS 100% OPERATIONAL

ADMIN MANAGEMENT

- Adding, editing and deleting users
- Setting/changing passwords
- 3 levels of access: Master, Admin, User

ACCESSORIES INCLUDED

- 24" TV Monitor
- Wireless set: keyboard + mouse
- HDMI cable
- Power cable

SHIPPING DATA

<table>
<thead>
<tr>
<th>Item</th>
<th>Dimensions of Package (LxWxH)</th>
<th>Gross Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALCMS Set (24&quot; screen, cables, keyboard, mouse)</td>
<td>620 mm x 205 mm x 460 mm</td>
<td>10 kg</td>
</tr>
</tbody>
</table>

ALCMS BASIC OBLIGATORY REQUIRES UR-201 TO BE SUPPLIED.
ALCMS ADVANCED

AIRFIELD LIGHTING CONTROL & MONITORING SYSTEM

SYSTEM OVERVIEW
S4GA ALCMS is an Airfield Lighting Control and Monitoring System designed to provide full remote control and monitoring of solar LED runway lighting from the TWR or maintenance room. S4GA ALCMS consists of Computer Interface integrated in UR-201 Control and Monitoring Unit. It features open interface for integrating with existing AGL control system.

FEATURES
• Custom Airfield Layout
• Individual Light Status Display
• Custom Grouping of Lights
• 5-step Light Intensity Setup
• Operating Mode Setup

CONTROL
• Grouping of entire airfield lighting in major groups
• Control of entire lighting system and groups of lights
• Individual control of separate taxiways
• 5-step intensity level setup for a particular group of lights
• Operating modes setup: flashing, dusk-till-dawn, pilot-activated, GSM-activated
• Timer setup (for pilot-activated and GSM-activated modes)

ALCMS Advanced is designed for airports with advanced AGL system (including multiple taxiways, approach lighting, temporarily closed areas). This type computer interface has advanced features like customized airfield layout and more detailed grouping of lights (e.g. control of separate taxiways).

• Real-time monitoring YES
• Automatic failure alarm YES
• Operating mode setup YES
• Individual light status indication YES
• Grouping of airfield lights 3+
• Light intensity steps 5
• Separate taxiways control YES
• Airfield layout YES

For airports with simple runway lighting system (runway edge, threshold and one taxiway), S4GA offers ALCMS Basic.
MONITORING

- Real-time individual light status monitoring: battery level, lamp status, connection status, charging speed, temperature, charging efficiency of solar panel
- Monitoring of UR-201 Control Module: GSM signal strength, back-up battery level, power connection
- Immediate light failure detection and report: light unavailable, critical battery level
- Color indication of current light status:

  - RED: LAMP IS OFFLINE
  - AMBER: THE BATTERY LEVEL IS BELOW 30%
  - GREY: THE UNIT IS 100% OPERATIONAL

ADMIN MANAGEMENT

- Adding, editing and deleting users
- Setting/changing passwords
- 3 levels of access: Master, Admin, User

ACCESSORIES INCLUDED

- 24" TV Monitor
- Wireless set: keyboard + mouse
- HDMI cable
- Power cable

SHIPPING DATA

<table>
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<tr>
<th>Item</th>
<th>Dimensions of Package (LxWxH)</th>
<th>Gross Weight</th>
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<tbody>
<tr>
<td>ALCMS Set (24&quot; screen, cables, keyboard, mouse)</td>
<td>620 mm x 205 mm x 460 mm</td>
<td>10 kg</td>
</tr>
</tbody>
</table>

ALCMS ADVANCED OBLIGATORY REQUIRES UR-201 TO BE SUPPLIED.
SOLAR ENGINE

FOR PAPI AND OTHER AIRFIELD LIGHTING EQUIPMENT

FEATURES
- Applicable For Different Airfield Lighting Equipment
- 20% More Energy Efficient Solar Panel
- All Consisting Parts Are User-Replaceable
- Adjustable Solar Engine Size

APPLICATION
S4GA Solar Engine is designed to power PAPI or other airfield lighting equipment. It consists of premium quality Q.ANTUM solar panel and VICTRON power bank.

EXAMPLES OF S4GA SOLAR ENGINES
### Technical Specifications

**General**
- 2 x Q.PEAK DUO-G5 solar panels
- Front Cover: 3.2 mm thermally pre-stressed glass with antireflection technology
- Back Cover: composite film
- Frame: Black anodized aluminium
- Cell: 6 x 20 monocrystalline Q.ANTUM solar half cells
- Connector: Multi-Contact, MC4; IP65 and IP68
- Dimensions: 1685 x 1000 x 32 mm
- Weight: 18.7 kg

**Electrical**
- Total Engine Size: 640 W (2 x 320 W)
- Nominal Power: 315-330 Wp
- Maximum system voltage: 1000 V

**Control & Monitoring**
- Operating temperature: -40 to 85°C
- Wind/Snow Load: 4000/5400 Pa

**Certification**
- VDE Quality Tested, IEC 61215 (Ed. 2); IEC 61730 (Ed. 1), Application class A
- DIN EN 50380

---

**State of the Art Module Technology**
Q.ANTUM DUO combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology.

---

**Q.ANTUM Technology: Low Levelised Cost of Electricity**
Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 19.9%.

**Enduring High Performance**
Long-term yield security with Anti LID Technology, Anti PID Technology1, Hot-Spot Protect and Traceable Quality Tra.Q™.

**Extreme Weather Rating**
High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).

---

**Technical Drawing**
SOLAR POWER BANK

**INVERTER / CHARGER**

**General**
- MultiPlus C12/800/35 Inverter Charger
- Power Control: yes
- Transfer Switch (A): 16
- Parallel and 3-phase operation: yes
- Dimensions [HxWxL]: 375 x 214 x 110 mm
- Weight: 10 kg

**Inverter**
- Input voltage range (V DC): 9.5 – 17 V, 19 – 33 V, 38 – 66 V
- Output voltage: 230 VAC ± 2%
- Frequency: 50 Hz ± 0.1%

**Charger**
- Input voltage range: 187-265 VAC
- Input frequency: 45 – 65 Hz

**Environmental Conditions**
- Temperature Range: -40 to 85°C
- Ingress Protection: IP21
- Humidity: 95%

**Compliance**
- Safety: EN 60335-1, EN 60335-2-29
- Emission, Immunity: EN 55014-1, EN 55014-2, EN 61000-3-3
- Automotive Directive: 2004/104/EC

**BATTERY**

**General**
- Victron Energy Battery Gel and AGM series
- Lifespan: 1.200 cycles
- Designed for 5 years
- Air-transportable
- User-replaceable
- Dimensions [LxWxH]: 238 x 240 x 522 mm
- Weight: 65 kg

**Electrical**
- Nominal Voltage: 12V
- Nominal Capacity: 220 Ah
- Total capacity: 2640 W (12V x 220Ah)

**Environmental Conditions**
- Temperature range: -40 to 85°C

**CHARGE CONTROLLER**

**General**
- BlueSolar Charge Controller MPPT 100/50
- Dimensions [LxWxH]: 70 x 186 x 130 mm
- Weight: 1.3 kg

**Electrical**
- Battery Voltage: 12/24V Auto Select
- Rated charge current: 50 A
- Nominal PV power, 12V 1a,b): 700 W
- Nominal PV power, 24V 1a,b): 1400 W
- Max. PV short circuit current: 60 A
- Maximum PV open circuit voltage: 180 V
- Maximum efficiency: 98%
- Protection: battery reverse polarity (fuse, not user accessible) PV reverse polarity / Output short circuit / Over Temperature

**Environmental Conditions**
- Temperature range: -30 to +60°C
- Humidity: 95%

**Compliance**
- Safety: EN/IEC 62109-1 / UL 1741 / CSA C22.2
- NEMA protection class: NEMA 4
- IK Code: IK08
- Material: galvanized steel
- Dimensions (LxWxH): 300 x 800 x 600 mm
- Ingress Protection: IP66

**ENCLOSURE**

**General**
- Victron Energy Battery Gel and AGM series
- Lifespan: 1.200 cycles
- Designed for 5 years
- Air-transportable
- User-replaceable
- Dimensions [LxWxH]: 238 x 240 x 522 mm
- Weight: 65 kg

**Electrical**
- Nominal Voltage: 12V
- Nominal Capacity: 220 Ah
- Total capacity: 2640 W (12V x 220Ah)

**Environmental Conditions**
- Temperature range: -40 to 85°C

**TECHNICAL DRAWING**
PORTABLE AIRFIELD LIGHTING TRAILER
FOR MILITARY AND CIVIL

CONTACTLESS CHARGING

- Only 10 min required to plug-in 132 lights
- Charging time: 8 hours
- Charging starts instantly

CONTROL & MONITORING UNIT
LOW BATTERY SMS AUTO REPORTING

System sends User notifications about light failures:
- Low battery level
- The light is out of the runway

TRAILER PRODUCTS

SP-401 LED RUNWAY EDGE LIGHT
SP-401 LED RUNWAY THRESHOLD END LIGHT
SP-401 LED TAXIWAY LIGHT
UR-101 HANDHELD CONTROLLER
SP-401 PORTABLE RUNWAY EDGE LIGHT

**MEDIUM INTENSITY**

---

**FEATURES**
- 180 hrs of autonomy
- Remote activation
- Convertible to solar airfield light
- 1,200 cd light output

---

**APPLICATION**
Mobile airfield light designed to quickly illuminate temporary airfield in accordance with ICAO:
- Temporary runways
- Backup airport lighting
- Remote airfields
- Emergency landing airstrips

---

**TECHNICAL SPECIFICATIONS**

**Optics**
- 1,200 cd light output
- Combined type, omnidirectional and bidirectional
- LED lifespan: 100,000 hrs
- Maximum power consumption: 9W
- NVG-compatible (optional)
- Color: white / white, white / yellow, white / red, red / yellow
- User-replaceable

**Battery**
- 2 × built-in batteries
- Autonomy: 180 hrs (minimum intensity)
- Total capacity: 216W (2x9Ah/12V)
- Deep-cycle VRLA, 12V/9Ah
- Lifespan: 1,200 cycles
- Designed for 4-5 years
- Air transportable
- User-replaceable
- Standard type, available worldwide

**Charging**
- Via OCT-401 Charger
  - Charging time: 8 hrs
- Optional: contactless charging in a Trailer
  - Charging time: 8 hrs
- Optional: 2 × solar panels
  - Total power output: 10W

**Certification**
- ICAO, Annex 14th, Volume I, 7th Edition dated July 2016, clause 5.3.9.10 Appendix 2, Figure A2-2 or A2-1
- Intertek Report 180400427HZH-001, dated on September 2018

---

**Operating Modes**
- Steady / Flashing / Dusk till dawn
- Visible / Infrared (optional) / Visible + Infrared (optional)

**Remote Activation & Control**
- Wireless mesh type network
- Up to 1.5 km operating range
- Remote activation:
  - Via UR-101 Handheld Controller
  - Via UR-201 Control & Monitoring Unit
  - GSM activation (Cell Phone)
  - VHF activation (Air-band Radio)
  - Via ALCMS Computer Interface (optional, requires UR-201)
- Emergency On/Off button
- Self-diagnostics
- Failure auto reporting via SMS (requires UR-201 Unit)

**Environmental Conditions**
- Temperature range: -20 to 50 ºC (-4 to 122 ºF)
- Optional: -40 to 80 ºC (-40 to 176 ºF)
- Ingress protection: IP-67
- Wind Speed: 160 kph

**Casing And Components**
- Casing made of UV-stabilized Lexan polycarbonate
- Outer UV-resistant glass dome
- Carrying handle made of stainless steel
- Battery level indicator
- Detachable antenna
- Pressure stabilizing valve
- Transport circuit breaker
- Casing lifespan: 15 years
- Casing color: aviation yellow
- Frangible mounting compliant with ICAO regulations (optional)
- Dimensions (LxWxH): 244 mm × 185 mm × 297 mm
- Weight: 7 kg

---

**APPLICATION**
Mobile airfield light designed to quickly illuminate temporary airfield in accordance with ICAO:
- Temporary runways
- Backup airport lighting
- Remote airfields
- Emergency landing airstrips

---

**Compliance:**

---

**Features:**
- 180 hrs of autonomy
- Remote activation
- Convertible to solar airfield light
- 1,200 cd light output
PHOTOMETRIC PERFORMANCE

![Graphs showing photometric performance with Average Intensity values: 750 cd, 950 cd, and 1,200 cd.]

SHIPPING DATA

<table>
<thead>
<tr>
<th>Item</th>
<th>Dimensions of Package (L×W×H)</th>
<th>Gross Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP-401 Lighting Unit</td>
<td>350 mm × 250 mm × 210 mm</td>
<td>8.6 kg</td>
</tr>
<tr>
<td>SP-401 Lighting Unit, NO batteries</td>
<td>350 mm × 250 mm × 210 mm</td>
<td>3.1 kg</td>
</tr>
</tbody>
</table>
**TECHNICAL SPECIFICATIONS**

### Optics
- 320 (red) / 450 (green) cd light output
- Bidirectional, unidirectional type
- LED lifespan: 100,000 hrs
- Maximum power consumption: 1.8W
- NVG-compatible (optional)
- Color: red / green, red, green
- User-replaceable

### Battery
- 2 × built-in batteries
- Autonomy: 280 hrs (minimum intensity)
- Total capacity: 216W (2×9Ah/12V)
- Lifespan: 1,200 cycles
- Designed for 4–5 years
- Air transportable
- User-replaceable
- Standard type, available worldwide

### Charging
- Via OCT-401 Charger
  - Charging time: 8 hrs
- Optional: contactless charging in a Trailer
  - Charging time: 8 hrs
- Optional: 2 × solar panels
  - Total power output: 10W

### Certification
- ICAO, Annex 14th, Volume I, 7th Edition dated July 2016, clause 5.3.10/5.3.11.4 & Appendix 1, Figure A1-1b
- Intertek Reports: 180400427HZH-003 (red direction), dated on March 2019; 180400427HZH-004 (green direction), dated on March 2019

### Operating Modes
- Steady / Flashing / Dusk till dawn
- Visible / Infrared (optional) / Visible + infrared (optional)

### Remote Activation & Control
- Wireless mesh type network
- Up to 1.5 km operating range
- Remote activation:
  - Via UR-101 Handheld Controller
  - Via UR-201 Control & Monitoring Unit
  - GSM activation (Cell Phone)
  - VHF activation (Air-band Radio)
  - Via ALCMS Computer Interface (optional, requires UR-201)
- Emergency ON/OFF button
- Self-diagnostics
- Failure auto reporting via SMS (requires UR-201 Unit)

### Environmental Conditions
- Temperature range: -20 to 50 ºC (-4 to 122 ºF)
  - Optional: -40 to 80 ºC (-40 to 176 ºF)
- Ingress protection: IP-67
- Wind Speed: 160 kph

### Casing And Components
- Casing made of UV-stabilized Lexan polycarbonate
- Outer UV-resistant glass dome
- Carrying handle made of stainless steel
- Battery level indicator
- Detachable antenna
- Pressure stabilizing valve
- Transport circuit breaker
- Casing lifespan: 15 years
- Casing color: aviation yellow
- Frangible mounting compliant with ICAO regulations (optional)
- Dimensions (L×W×H): 244 mm × 185 mm × 297 mm
- Weight: 7 kg

---

**APPLICATION**

Mobile airfield light designed to quickly illuminate temporary airfield in accordance with ICAO:
- Displaced thresholds
- Backup airport lighting
- Temporary runways
- Emergency landing airstrips
- Remote fields
PHOTOMETRIC PERFORMANCE

1. Aluminum adapter for glass dome
2. Rubber seal
3. Glass dome
4. LED optics, bi- or unidirectional type
5. Radio antenna for wireless control & monitoring
6. Carrying handle
7. Emergency ON/OFF button
8. Charging port for backup charging via cable
9. Micro-computer with integrated radio transceiver
10. Protective plate
11. 2 × batteries built-in, VRLA type 12V/9Ah
12. Rubber seal
13. UV-stabilized Lexan polycarbonate casing

SHIPPING DATA

<table>
<thead>
<tr>
<th>Item</th>
<th>Dimensions of Package (LxWxH)</th>
<th>Gross Weight</th>
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<tbody>
<tr>
<td>SP-401 Lighting Unit</td>
<td>350 mm x 250 mm x 210 mm</td>
<td>8.6 kg</td>
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<tr>
<td>SP-401 Lighting Unit, NO batteries</td>
<td>350 mm x 250 mm x 210 mm</td>
<td>3.1 kg</td>
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Gross Weight

- 1st Circle
- 2nd Circle
- 3rd Circle

- Average Intensity 30 cd
- Average Intensity 70 cd
- Average Intensity 320 cd
- Average Intensity 60 cd
- Average Intensity 90 cd
- Average Intensity 450 cd
SP-401 PORTABLE TAXIWAY LIGHT

FEATURES
- 600 hrs of autonomy
- Remote activation
- Convertible to solar airfield light

APPLICATION
Mobile airfield light designed to quickly illuminate temporary airfield in accordance with ICAO:
- Temporary taxiway
- Backup taxiway lighting

TECHNICAL SPECIFICATIONS

Optics
- 11 cd light output (peak)
- Omnidirectional type
- LED lifespan: 100,000 hrs
- Maximum power consumption: 0.6 W
- NVG-compatible (optional)
- Color: blue
- User-replaceable

Battery
- 2 x built-in batteries
- Autonomy: 600 hrs (minimum intensity)
- Total capacity: 216W (2x9Ah/12V)
- Deep-cycle VRLA, 12V/9Ah
- Lifespan: 1,200 cycles
- Designed for 4-5 years
- Air transportable
- User-replaceable
- Standard type, available worldwide

Charging
- Via OCT-401 Charger
  Charging time: 8 hrs
- Optional: contactless charging in a Trailer
  Charging time: 8 hrs
- Optional: 2 x solar panels
  Total power output: 10W

Certification
- ICAO, Annex 14th, Volume I, 7th Edition dated July 2016, clause 5.3.18.8 & Appendix 1, Figure A1-1b
- Intertek Report 1B40040272H01190, dated on March 2019

Operating Modes
- Steady / Flashing / Dusk till dawn
- Visible / Infrared (optional) / Visible + Infrared (optional)

Remote Activation & Control
- Wireless mesh type network
- Up to 1.5 km operating range
- Remote activation:
  - Via UR-101 Handheld Controller
  - Via UR-201 Control & Monitoring Unit
  - GSM activation (Cell Phone)
  - VHF activation (Air-band Radio)
  - Via ALCMS Computer Interface (optional, requires UR-201)
  - Emergency ON/OFF button
  - Self-diagnostics
  - Failure auto reporting via SMS (requires UR-201 Unit)

Environmental Conditions
- Temperature range: -20 to 50 ºC (-4 to 122 ºF)
  (Optional: -40 to 80 ºC (-40 to 176 ºF)
- Ingress protection: IP-67
- Wind Speed: 160 kph

Casing And Components
- Casing made of UV-stabilized Lexan polycarbonate
- Outer UV-resistant glass dome
- Carrying handle made of stainless steel
- Battery level indicator
- Detachable antenna
- Pressure stabilizing valve
- Transport circuit breaker
- Casing lifespan: 15 years
- Casing color: aviation yellow
- Frangible mounting compliant with ICAO regulations (optional)
- Dimensions (LxWxH): 244 mm × 185 mm × 297 mm
- Weight: 7 kg
1. Aluminum adapter for glass dome
2. Rubber seal
3. Glass dome
4. LED optics, omnidirectional type
5. Radio antenna for wireless control & monitoring
6. Carrying handle
7. Emergency ON/OFF button
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PHOTOMETRIC PERFORMANCE

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UR-101
HANDHELD CONTROLLER

FEATURES

- Grouping of lights
- Light intensity setup
- Operating modes setup
- Designed for hard operating conditions

CE COMPLIANCE

- 2014/35/UE
- 2014/30/UE
- 2011/65/UE
- 1999/5/EC

UR-101 Handheld Controller is designed to provide User with ability to remotely control S4GA airfield lighting system.

LIGHT INTENSITY

- Minimum 10%
- Medium 30%
- Maximum 100%

SPECIAL MODES

- NVG mode
- Dusk till dawn mode

GROUPING OF LIGHTS

- Group I
- Group II
- Group III
- Group IV
- Group V

ON/OFF SWITCH

ANTENNA FOR WIRELESS COMMUNICATION

REPLACEABLE BATTERY

INDICATORS

CHARGING PORT

PUSH BUTTONS
**TECHNICAL SPECIFICATIONS**

**Control**
- On / Off Button: Yes
- Light intensity:
  - Minimum 10%
  - Medium 30%
  - Maximum 100%
- Special operating mode: Night Vision Googles (NVG)
- Grouping of Lights: Yes, maximum 5 groups

**Communication Between Controller and the Lights**
- Type: Wireless mesh network
- Operating Range: Up to 1,500 meters
- Radio transceiver:
  - frequency/power output: 868 MHz, 16 mW

**Power Source**
- Battery: Lithium-ion type, 5.2Ah, 3.7V
- Operating time: 48 hrs
- Charging: Charger (110-230VAC)

**Casing**
- Material: Powder coated steel
- Internally illuminated buttons: Yes
- Temperature Range: -20 to 50 ºC (-4 to 122 ºF)
- Color: Black

**Compliance**
- CE Compliance:
  - 2014/35/UE
  - 2014/30/UE
  - 2011/65/UE
  - 1999/5/EC

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**ACCESSORIES INCLUDED**

**PROTECTIVE CASE**
Shock-absorbent carrying case with protection foam.

**CHARGER**
110-230VAC

**BATTERY**
Lithium-ion type
5.2Ah, 3.7V

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<tr>
<td>UR-101 Handheld Controller</td>
<td>109 mm x 50 mm x 189.2 mm</td>
<td>-</td>
</tr>
<tr>
<td>UR-101 Handheld Controller with accessories in protective case</td>
<td>336 mm x 300 mm x 148 mm</td>
<td>3 kg</td>
</tr>
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