



# ***Solaris<sup>+</sup>***

**User Manual**

# G-LEC Solaris+ User Manual

To avoid danger, you should read this user manual thoroughly before use of the product  
This product is for professional use only and not designed for home or residential use.

## G-LEC Solaris+ Product Information Overview

### Solaris +, hanging 360 ° LED video curtain for Events and Installations

Dear Customer, We thank you for purchasing the Solaris+ system from G-LEC. With this product, you have an efficient and flexible LED video playback system, which has been built using leading edge technology and components. Before your product left our facility, it was tested to ensure that you receive a product in perfect condition.

Please ensure that anyone working with the system fully reads and understands this manual before working with the product and follow its instructions, especially safety related issues. This manual also contains important information in regard to commissioning. Be sure that this documentation is forwarded when the product is passed on to third parties. These instructions should be read and retained.

Should you believe that your product was damaged in transit, please file a report with the forwarder immediately, otherwise any claim for compensation may be void.

G-LEC Vision GmbH may make improvements and / or changes to the product (s) and / or the program(s) in this manual without prior notice. The manual could include technical inaccuracies or typographical errors. Changes and updates are made to this manual periodically, so to ensure that you have the latest version, please check our website at [www.g-lec.com](http://www.g-lec.com)

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## Safety Overview

- Read and follow all warnings, precautions and instructions.
- Do not block the ventilation areas of any components within the Solaris+ system.
- Do not install Solaris+ near any heat sources such as radiators, stoves, or other similar devices
- Do not use any component of the system if it is, or appears to be, damaged or broken.
- Use only G-LEC approved parts, peripherals or accessories.

**Contact G-LEC Vision or one of their authorized distributors if you have questions in regard to the safe installation, operation and maintenance of the Solaris+ system.**

- The installation of the Solaris+ system should only be performed by qualified personnel.
- Care should be taken to avoid damage to any cable within the system. Damaged cables should be replaced before use.
- Do not install Solaris+ near combustible or flammable materials
- When Solaris+ is being hung above people, please follow your local regulations to ensure compliance of the hanging equipment used.
- A secondary safety wire, approved to your local regulations should always be used.
- If permanently installed, inspections should be carried out on a regular basis.
- Dispose of the packaging material after installation.
- Disconnect all power to the Solaris+ system before cleaning.
- The Solaris+ system is not intended to have objects, decorations or other items suspended from it. To do so would be unsafe and would void all warranties.
- Solaris is designed to be suspended directly from a Solaris bracket.  
Through its flexibility, Solaris lines can be formed into different shapes.  
Please note however, that any additional suspension of the Solaris lines must not be done by the cable between the spheres, but by the eyelets located at the first and last sphere on each line. This is especially important in situations where the Solaris will be physically moved during its use.

## System Components

This chapter describes the typical components and the accessories which the Solaris+ uses in detail. For other common system components such as media servers, the S-Drive II video processor and control software, please refer to the relevant user guides.

Solaris+ system components overview:

### - S-Drive II Video Processor

This video processor receives an external DVI-D source to be played on a Solaris+ system. It is configured using some free of charge proprietary G-LEC software. A fibre optic output is sent to the Solaris+ Manager.



### - Solaris+ Lines

Available in various standard lengths, Solaris+ Lines are cables mounted with LED spheres at a pitch of 120mm. Lines can be interconnected in different lengths, up to a maximum of 64 spheres.



- Solaris+ Bracket

The Solaris+ Bracket is where the Solaris+ Lines plug into. Each bracket has a power input (from the PSU), a data input (from the Solaris+ Manager) along with 4 outputs for Solaris+ Lines. It can be mounted by attaching a coupler to the central hole or via the two M10 threaded sockets at the ends of the Bracket.



- Solaris+ Power Supply Unit (PSU)

The Solaris PSU receives a mains voltage signal and has 8 outputs, each of which connects to a Solaris Bracket.



- Solaris + Manager

The Solaris+ Manager receives a fibre optic signal from the S-Drive II, and has a fibre optic output to connect further Managers. It is powered from a mains voltage input and has 16 CAT-5 outputs, which feed signal to the Solaris+ Brackets.

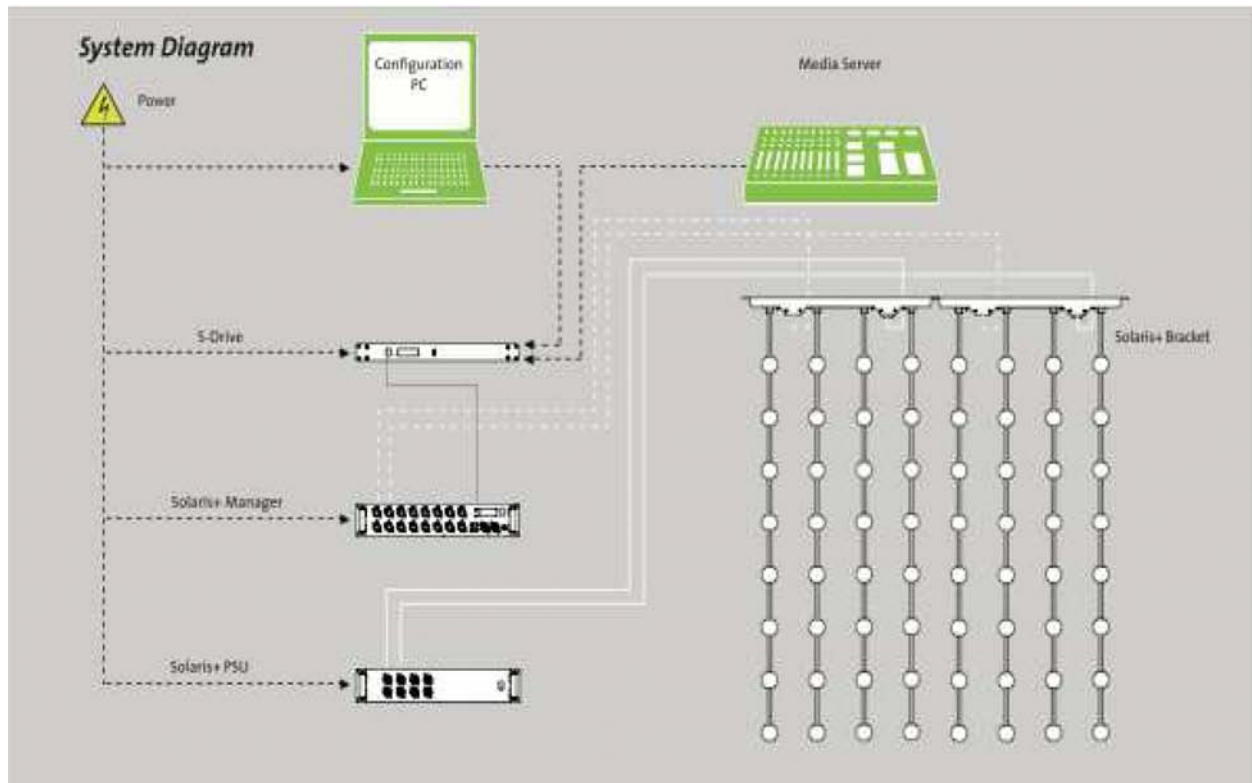


- G-LEC Software

Available for free download from [www.g-lec.com](http://www.g-lec.com)

## Solaris+ System Diagram

The Solaris+ system should be connected, as shown in the diagram below.



In order to fully mount a system, please do as follows:

- 1) Mount the Solaris+ Brackets in their desired location
- 2) It is recommended to place the Solaris+ PSU and Solaris+ Manager close to the Brackets in order to minimize cable distances and the potential for problems arising.
- 3) Connect each bracket to the output from the Solaris+ PSU – there are 8 outputs on each PSU. The connection is made through a cable with a Neutrik Speakon connector on each end. These connectors are keyed to only connect one way. There is no specific sequence in regard to connecting the Solaris+ Bracket to the output of the PSU, but care must be paid to ensure that any maximum load is not exceeded, as follow:

**Note that the top 4 outputs have a maximum capacity of 320 Watts and the bottom 4 outputs have a capacity of a further 320 Watts. Exceeding these ratings is not permitted. In order to help you calculate the load; each Solaris sphere has a maximum current draw of 0.5 Watts.**

- 4) The Solaris+ Manager contains 16 numbered outputs. Connect the first output to the first Solaris+ Bracket in line. This will be fed the first pixel information from the mapping in the S-Drive II Video Processor. This connection is made using a shielded CAT-5 cable. Connect output to the second Bracket in line, continuing until the maximum of 16 outputs are used. If you wish to connect further brackets, then a second Solaris+ Manager will be required.
- 5) Using a compatible fibre optic cable, connect the output of the S-Drive II to the input of the Solaris+ Manager on the right hand side of the unit. These connectors are keyed, so need to be inserted the correct way around, but they simply push in to lock. To remove them, pull gently on the side of the connector only, and it should release. The S-Drive II will normally sit at your video control position and therefore the use of fibre optic cable allows the fast transmission of data across longer distances.
- 6) Should you need to connect further Solaris+ Manager boxes, they can be daisy chained using further fibre optic cables, connecting the output of the first, to the input of the next, and so on.
- 7) Connect your desired configuration of Solaris+ Lines to the Solaris+ Brackets. The connection between these two elements is via a keyed 4 pin connector. Ensure that both connector components are correctly aligned and push them together. The male side of the connector has a locking ring which needs to be turned a quarter turn clockwise until you feel it physically 'click' into place and will not turn further. Once 'clicked' a firm connection has been made. To undo these connectors, turn the locking ring anti-clockwise a quarter turn before attempting to pull the connector apart. Sequential Solaris+ Lines can be connected using the same method.
- 8) Each Solaris+ Line has a tab at the first and last sphere. These are for the specific purpose of attaching a secondary safety wire, and must be used at the point where a Solaris+ Line connects to a Solaris+ Bracket. Further safety cables should be used where systems are placed above people or objects which may be damaged.
- 9) Connect mains power to the Solaris+ Manager, PSU and S-Drive II units via their power inputs. Turn on all units via their onboard switch.
- 10) Connect a DVI-D source to the input of the S-Drive II and configure the S-Drive II for your desired layout. For further information, consult the S-Drive II user manual.

Once configured, your Solaris+ system will play back the signal being fed and distributed via the S-Drive II.



## Maintenance

### **Cleaning the Fibre Optic Cables and Connectors**

In order to clean the fibre optic cables or connections on the S-Drive II and Solaris+ Managers you should use a soft cloth or swab.

#### **To clean fiber optic cables:**

- Place the soft cloth on a flat table
- Carefully remove the optical fiber head by hand
- Gently move the optical fiber several times on the clean cloth to remove any dirt.

#### **To clean fiber optic connectors:**

- Insert the swab into each optical opening
- Gently rotate the swab several times and pull it out to remove any dirt.

#### **To clean Solaris+ Spheres and Lines:**

To clean the Solaris lines and spheres, you should use a slightly damp cloth. No solvents, detergents or abrasives should be used, or they will damage the spheres and associated wiring.

## **Troubleshooting**

Please read the following FAQ's, should you have problems with your system. For further contact information, please see the 'Contacts' section at the end of this manual.

### **Problem**

The green light in the power switch of my Solaris+ PSU / Manager / S-Drive II does not light up

### **Possible solutions**

It is not receiving mains power. Check that the power source is on and that connections are firmly made. The Neutrik Powercon connector needs to be inserted and turned clockwise to lock into place and make a connection.

Check the fuses on the units and replace if blown.

### **Problem**

The video signal is playing, but the output from each Bracket is backwards

### **Possible solutions**

The brackets are plugged into the Solaris+ Manager in the wrong order. Try connecting them in the opposite order if this problem is repeated across all of your brackets

### **Problem**

The video signal is playing backwards on one of my Brackets

### **Possible solutions**

Ensure that the Bracket is physically placed in the same orientation as your other brackets. A painted arrow on the topside of each bracket can help ensure consistency easily.

## **Solaris+ Product and Accessories List**

<b>Item number</b>	<b>Product Name</b>	<b>Description</b>
G933004	<b><i>Solaris+ Line</i></b>	8 balls on line 96 cm with 12 cm pitch
G933005	<b><i>Solaris+ Manager</i></b>	feeds up to 16 Solaris+ Brackets
G933006	<b><i>Solaris+ Bracket</i></b>	Output for 4 Solaris+ Lines
G933007	<b><i>Solaris+ PSU</i></b>	for up to 120 lines
G933019	<b><i>Solaris+ Single</i></b>	One ball on 12 cm line
G933012	<b><i>S-Drive II</i></b>	Video processor for Solaris+ with DVI-D input
G944013	Fiber Optic Cable 20m	
G944015	Fibre Optic Coupler metal	
G944004	CAT-5 Ethernet Cable 2m	
G944005	CAT-5 Ethernet Cable 5m	
G944006	CAT-5 Ethernet Cable 10m	
G944042	Speakon Cable 2.5m	
G944022	Speakon Cable 5m	
G944007	Blank line extension cable 0.96m	
G944008	Blank line extension cable 1.92 m	
G955009	Flight case for Solaris+ Containers (11 containers per case)	
G955014	Containers for Solaris+ lines (12 Lines per container)	
G955010	Transflex flight case for accessories	

## Technical Specifications

### **Weight**

Solaris+ Line - 960mm / 37.8 inches (8 pixels) = 360 grams / 0.8 lbs.

Weight m<sup>2</sup> - 2.9kg/m<sup>2</sup> (120mm / 4.7 inch pixel pitch -> 8 single lines -> 64 pixels)

Solaris+ Manager - 4kg / 8.8 lbs.

Solaris+ PSU - 6kg / 13.2 lbs.

Solaris+ Bracket - 620g / 1.4 lbs.

### **Dimensions**

Solaris+ Line length - 960mm / 37.8 inches

Solaris+ Manager - 230 x 430 x 88mm / 9 x 17 x 3.5 inches, 19"/ 2U high

Solaris+ PSU - 300 x 430 x 88mm / 12 x 17 x 3.5 inches, 19"/ 2U

Solaris+ Bracket - 500 x 50 x 40mm / 20 x 2 x 1.5 inches

### **Optical**

Pixel Pitch - 120mm / 4.7 inches

Pixel - 2 x 3-color SMD LED

Pixel density 64 pixels / m<sup>2</sup> (Where pixels are set at 120 x 120mm grid)

Colors - 16 million, 24/48bit full color

### **Electrical**

Power - 0.5 Watts / Pixel (at 100% full bright white)

Manager - Data output for 16 Brackets

### **Solaris+ PSU**

Input voltage - 110-240V AC 50/60Hz

Output power 640 Watts max.

### **Solaris+ Bracket**

Power – 130 Watts max. (4 x 8 lines)

Data output - 4 x 8 Lines

### **Video Source**

DVI-D via S-Drive II

## Testing

### **ETL / UL**

Solaris+ is tested and certified to the following ETL / UL & CSA standards:

CSA C22.2#9.0 Issue:1996/05/15 Ed:1 Rev:2011/07/27 General Requirements for Luminaires - (Reaffirmed 2011)

UL 8750 Issued:2009/11/18 Ed:1 Rev:2011/11/01 Standard for Safety for Light Emitting Diode (LED) Equipment for use in Lighting Products

UL 2108 Issue:2004/02/27 Ed:1 Rev:2011/04/27 Standard for Safety Low Voltage Lighting Systems

### **CE**

Solaris+ is tested to the following standards CE & EMC:

#### **Emission**

EN 550022:2006 + A1: 2007

Class A

EN 61000-3-2:2006 + A1: 09 + A2: 09

EN 61000-3-3:2008

#### **Immunity**

EN55024: 1998 + A1: 2000 + A2: 2003

#### **Test Report**

FS-1108-183923-001

### **Notice**

This is a Class A digital device and may cause radio interference in residential areas.

## Contact and Support Information

For **more** information please visit our website: <http://www.g-lec.com>

In urgent cases or problems, please contact us directly at

G-LEC Vision Ltd:

e-mail: [info@g-lec.com](mailto:info@g-lec.com)

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