

Surelight

EL Race Car Panels



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Surelight's Motorsport race number panels and inverters have been developed over several years and provide the most resilient product of their kind for the racing motorsport business.

Our aim is to consider every aspect of the design of the products for the operating conditions found in the racing industry. Providing the most reliable and safe products is our primary goal.

Surelight have further developed the panels and inverters products recently with the help of ProDrive. Ensuring you that these products meet all known race car standards. Our aim is to provide you with total confidence that your race car panels and inverters will always operate effectively, reliably and safely where-ever your race cars are involved.

Consideration of both simple and complex issues are made to provide the most effective race car panels and inverters available worldwide.

- Panels and RCI-1 inverter are designed to race car automotive standards
- Brightest panels available
- High Temperature automotive glues and automotive approved heat resistant cabling
- Twisted cables on panels and inverters to automotive standards
- Deutsch DTM connectors used on panels and inverters
- RCI-1 inverter design incorporates multiple safety features and function with virtually all battery types including new Lithium ion batteries.
- Panels damaged during competition do not cause catastrophic inverter failure unlike most other devices
- RCI-1 inverters are designed with in built protection for no load, short circuit and overload.
- RCI-1 inverter has a wide input voltages range 10 to 15VDC and built to overcome high voltage spikes often seen during vehicle start up
- RCI-1 is waterproof with ingress protection to IP68

EL Race Car Panels



Key Features

- ACO & WEC Approved
- Robust - dual core water resistant wire and specially developed connection
- Water resistant - laminated protection
- Easy Installation - thin profile
- DEUTCH Connectors
- Twisted Cables

Product Description

Surelight's EL Panels make racing numbers easily viewable during endurance races. We are an ACO and WEC approved supplier of EL panels and waterproof inverters for the Le Mans LMP & GT Cars for night racing vehicle number illumination.

Illumination is mandatory as per article 7.5 in the Sporting regulations.

We provide nearly all the UK based teams and increasingly, many overseas teams with what we believe are the brightest EL Panels in the world and waterproof inverters.

Example Races That Use Surelight EL Race Panels



EL Parallel Panel Colours/Brightness



We believe that Surelight's EL Parallel Panels are the brightest currently available anywhere in the world, denser coatings and higher quality phosphor on our EL Panels make them second to none.

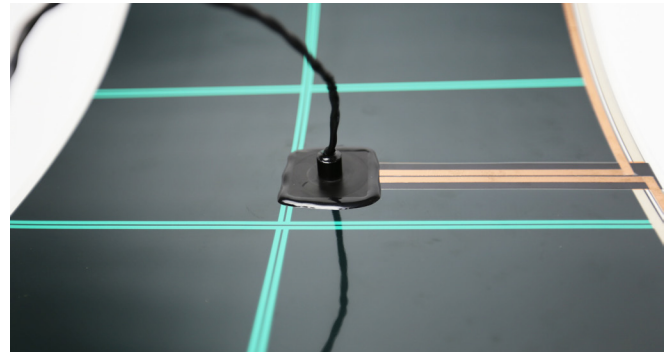
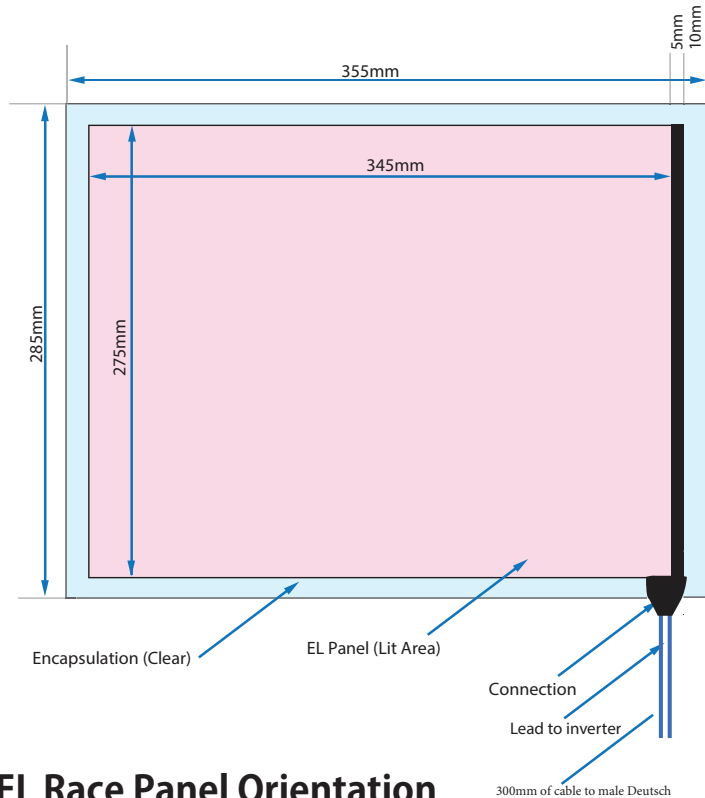
Item		Unit	Minimum	Typical	Maximum
High Brightness White	Brightness	cd/m ²	150	161	-
	Chromaticity	X Y	0.32 0.40	0.33 0.41	0.35 0.45
High Brightness Aqua (Blue/Green)	Brightness	cd/m ²	160	175	-
	Chromaticity	X Y	0.17 0.44	0.19 0.46	0.22 0.48

EL Race Panel Lamination

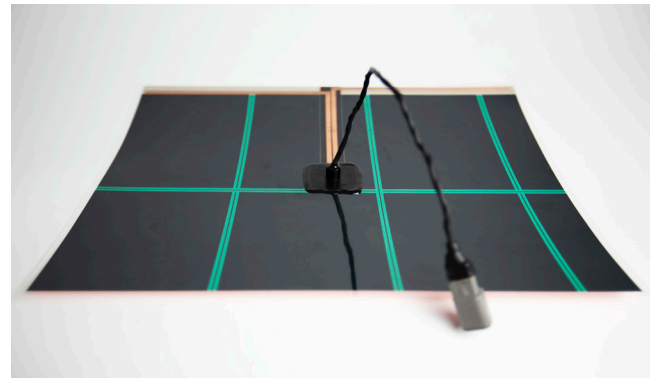
All Surelight EL Panels are supplied pre-encapsulated (laminated) unless otherwise requested at the time of ordering. Lamination protects against moisture and mechanical damage. Further protection against moisture and wear is applied to all race car number panels.

EL Race Panel Connections & Mechanical Dimensions

Surelight EL Race Number Panels are supplied pre-connected using the highest quality connections. These connections have been designed using strong copper tape, specially developed 3M glue and water resistant re-enforced wire. The Surelight connection method is the most advanced on the market, we work closely with race teams and have developed our connections based on feedback. Our connections are robust and durable whilst offering a slim profile for ease of installation.



Surelight Standard Connection on an unlit High Brightness EL Panel

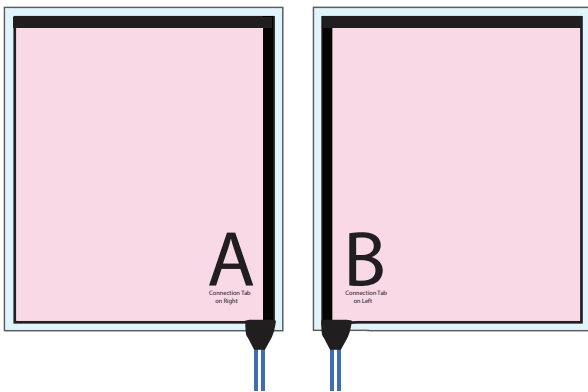


Surelight Perpendicular "E" Connection (Rear) to EL Panel, with 300mm cable length. Fuel resistant heat shrink applied over twisted cable to male two pin DTM06 Deutsch connector

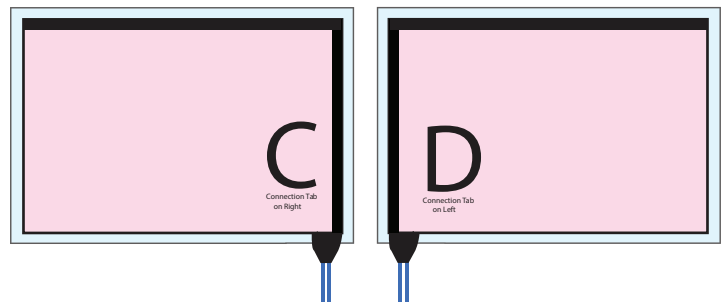
EL Race Panel Orientation

When choosing an EL Panel please use the letters A, B, C, D, E or F to refer to the panel orientation you require:

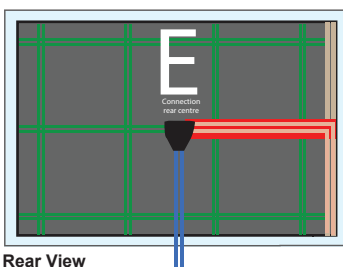
Portrait



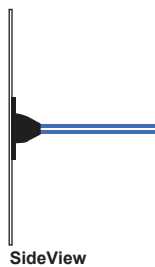
Landscape



Perpendicular

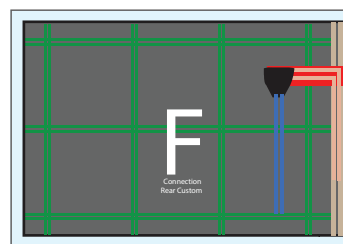


Rear View

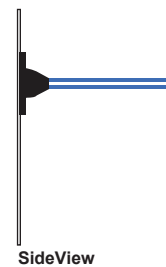


SideView

Custom



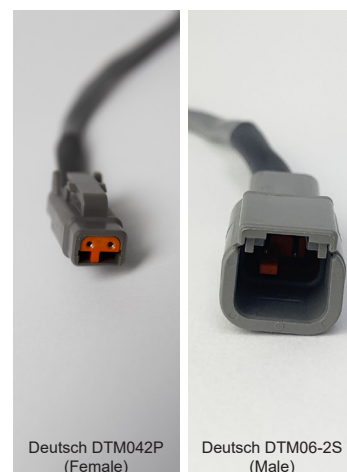
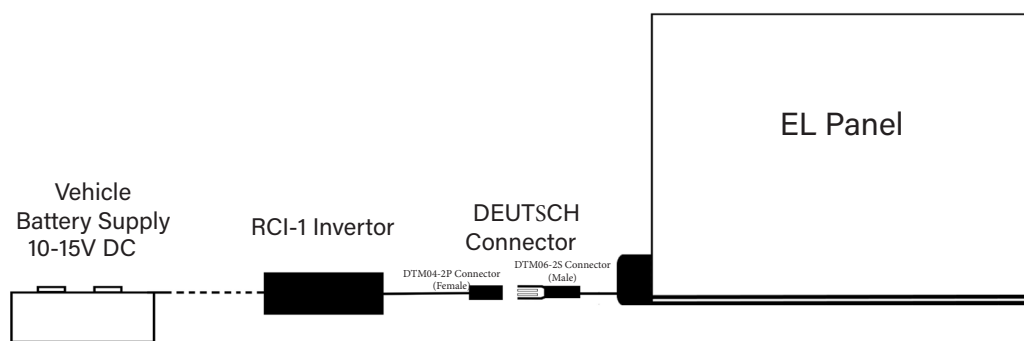
Rear View



SideView

EL Race Panel - Plug & Play System

Typical EL "A" Panel arrangement



Cables and connectors adhere to Prodrive's guidelines and ensures the whole product is sealed to IP68. Output cables are twisted and covered in a fuel resistant heat shrink to ensure both flexibility and integrity.

EL Race Panel - Life Time

Brightness versus accumulated lighting time

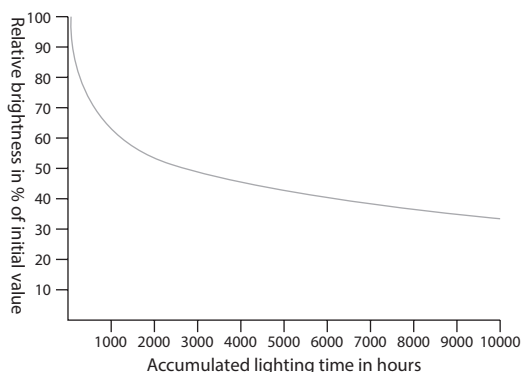


Figure 1: Brightness versus accumulated lighting time (Conditions: 100V AC, 400Hz, 20°C, 65% RH)

Unlike most other lighting which can critically fail, EL Panel brightness decreases with time.

Factors which have an impact on lifetime:

- Higher Voltage
- Higher Frequency
- DC Supply
- High Ambient Humidity
- High Ambient Temperature
- UV

Brightness can be increased by using a higher voltage or higher frequency. Higher voltage slightly decreases life time, but is preferred if higher supply current can be accepted.

Higher frequency considerably reduces lifetime, but is useful where low supply current is essential, higher frequency is most suited to applications with a shorter operating time.

DC supply should be avoided as lifetime of EL Panel will be reduced, If it is not possible to avoid DC, the + pole must be connected to the top (transparent) electrode.

Current vs Supply Voltage

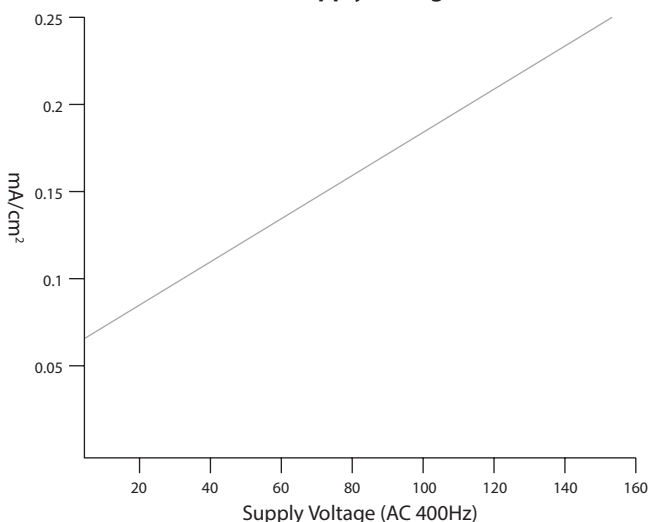


Figure 2: Current in mA/cm² versus supply voltage

Brightness vs Supply Voltage

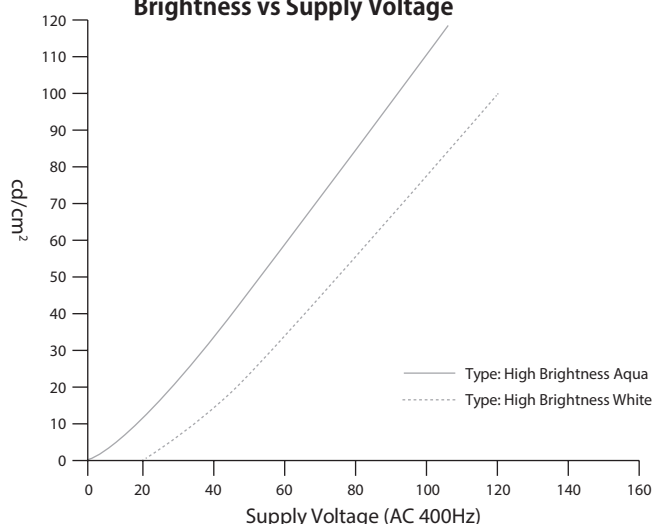


Figure 3: Brightness in cd/cm² versus supply voltage

Input Voltage	Area Range Current	Input Range	Output Frequency	Output Voltage Range
10V-15VDC	500 - 1000cm ²	300 - 600mA	400 - 475Hz	95 - 140 VAC

Please note our EL panels have a life-span in excess of 5000 hours.

RCI - 1 EL Race Number Panel Inverter



Twisted cables used on both low voltage DC input and high Voltage AC output of RCI-1 inverter. Fuel resistant heat shrink applied to output cable and heat shrink boot fitted to female 2 pin Deutsch connector, which mates with corresponding male Deutsch on EL panel.

Key Features

- Designed for wide input voltage range 10-15VDC
- Fully Sealed and mounted with lugs
- Reverse Polarity Protection
- Zero Load Protection
- Fuel resistant heat shrink on output cables
- Open Load Protection
- High Efficiency
- Very Low audible noise
- Automotive Deutsch DTM connectors fitted

Product Description

The Surelight RCI-1 is a small inverter designed specifically for automotive use for voltages typically between 10 to 15VDC. This will operate areas of EL panels with a typical capacitance of 0.5 - 0.7nF/cm² from 500cm² to 1000cm²

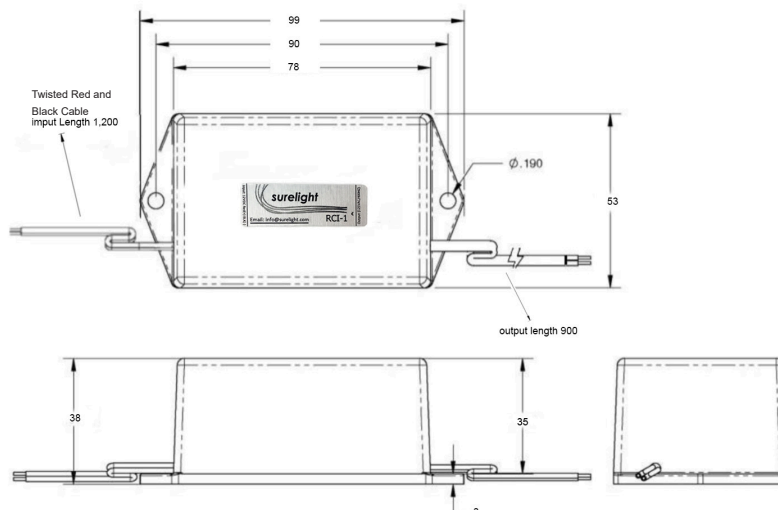
The wide input voltage parameters have been designed into the RCI-1 for the new lighter weight battery cells now being used on vehicles. These cells have a higher voltage output than traditional lead acid battery cells.

The RCI-1 has multi-level protection; reverse polarity, no load and open load protection is built in and with the introduction of automotive Deutsch DTM connectors the RCI-1 inverter is the ideal solution for EL race car panels.

Specifications

Mounting Type	Finish	Weight	Ingress Protection	Dimensions (mm)	DC Input Current	EL Panel Size	Input Voltage	Output Voltage	Frequency	Cable Length Input	Cable Length Output
Integral Fixing Holes	Black	360g	IP68	W:53 L:99 H:35	900mA	450-1050cm ²	10-15VDC	95-140VAC	400-475Hertz	1230mm	975mm

Mechanical Dimensions (Unit mm)



Notes

We do not provide adhesive backing on the panels, nor do we provide the numbering.

We do recommend the use of 3M's Ventureshield™ This will offer additional protection to the panels once fitted



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