

Surelight

Motorsport Number Illumination Systems



Surelight

Electroluminescent Panels from surelight.com are made of a multi layer material containing fluorescent dyes, dispersed in a binder with a high electrical constant. When an alternating current is applied, the EL Panel emits light.

Below are some images of Surelight motorsport number illumination systems in action on race night...



EL Panels & Inverters

EL Race Car Panels

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

Product Code: 400-0001



Key Features

- ACO & WEC Approved
- Robust - dual core water resistant wire and specially developed 3M™ connection
- Water Resistant - Laminate protection
- DEUTCH Connectors
- Easy Installation - thin profile
- Twister Cable

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.

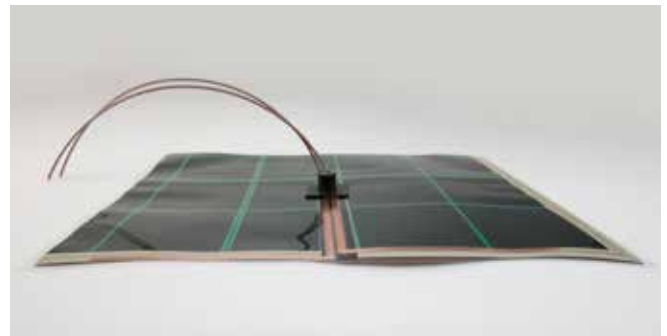
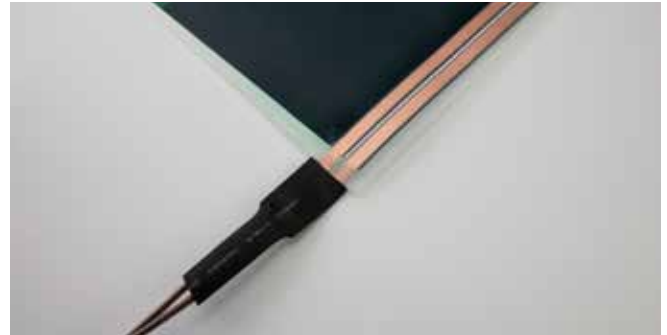
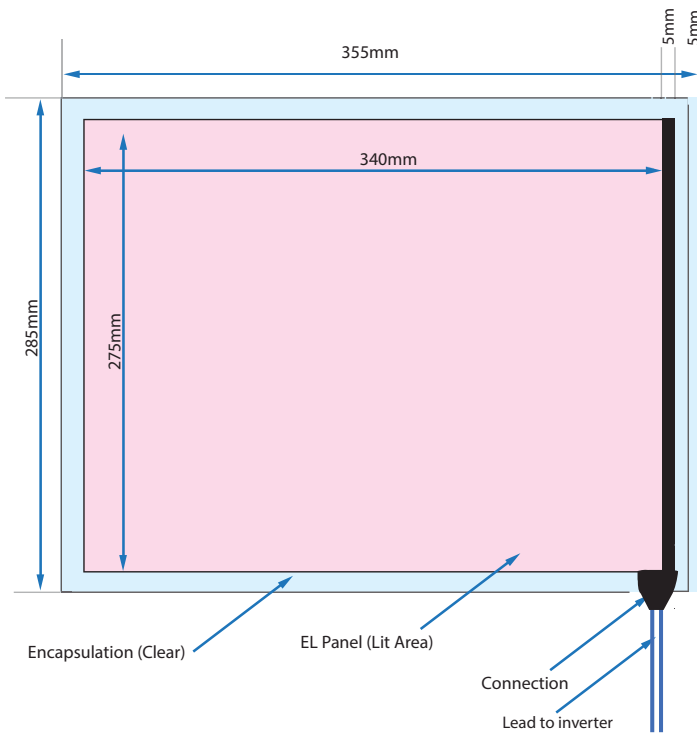
Item	Unit	Minimum	Typical	Maximum
High Brightness White	Brightness	150	161	-
	Chromaticity	X Y	0.32 0.40	0.33 0.41
High Brightness Aqua (Blue/Green)	Brightness	160	175	-
	Chromaticity	X Y	0.17 0.44	0.19 0.46

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

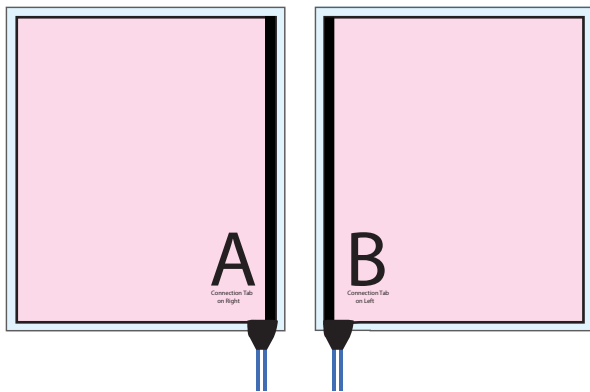
Surelight EL Race Number Panels are supplied pre-connected using the highest quality connections. These connections have been designed using strong copper tape, specially developed 3M glue and water resistant re-reinforced wire. The Surelight connection method is the most advanced on the market, we work 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.



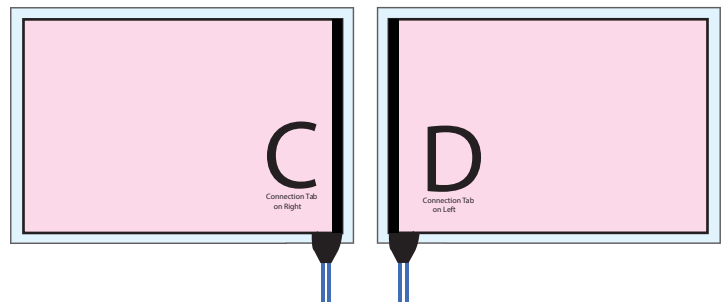
EL Race Panel Orientation

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

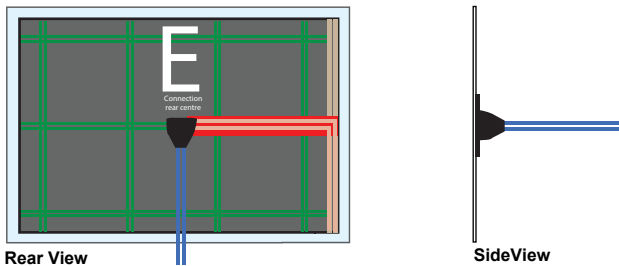
Portrait



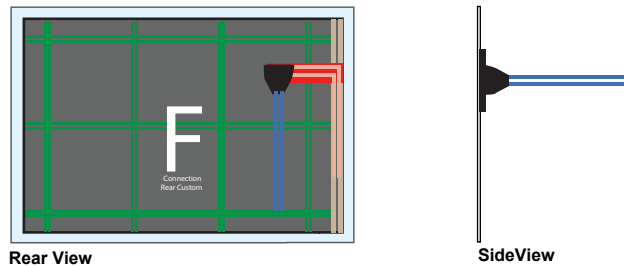
Landscape



Perpendicular

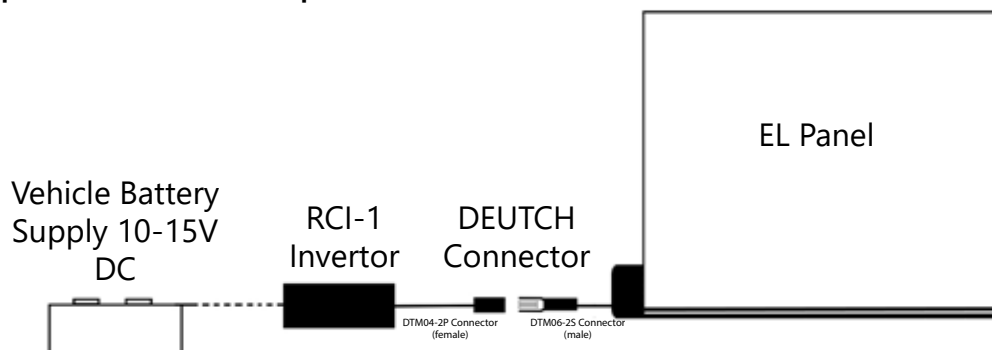


Custom



EL Race Panel - Plug & Play System

Typical EL Parallel Panel Setup



Our cabling has been made so that it is IP68 sealed with an IP68 rated boot. This both adheres to Prodrive's guidelines and ensures the whole product is IP68. The cable is a twisted cable covered in a high grade heat shrink to ensure both maximum flexibility and IP68 rating

EL Race Panel - Life Time

Brightness versus accumulated lighting

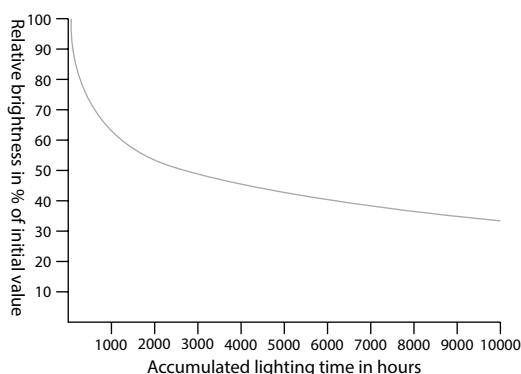


Figure 1: Brightness versus accumulated lighting time (Conditions: 100V AC, 400Hz, 20°C, 65% RH)

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 short 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

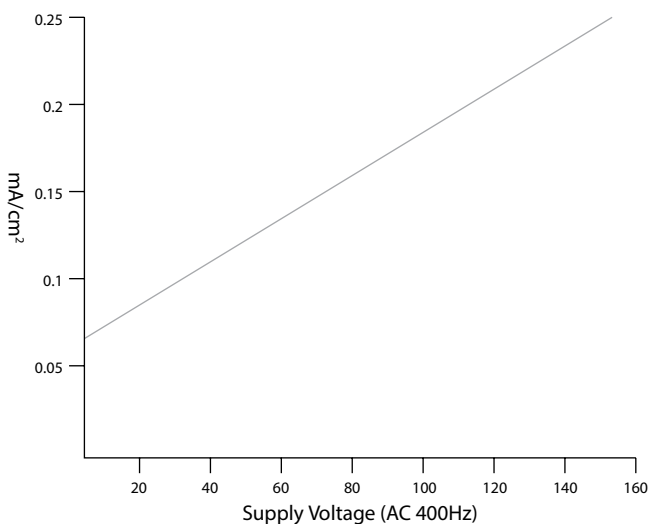


Figure 2: Current in mA/cm² versus supply voltage

Brightness vs Supply Voltage

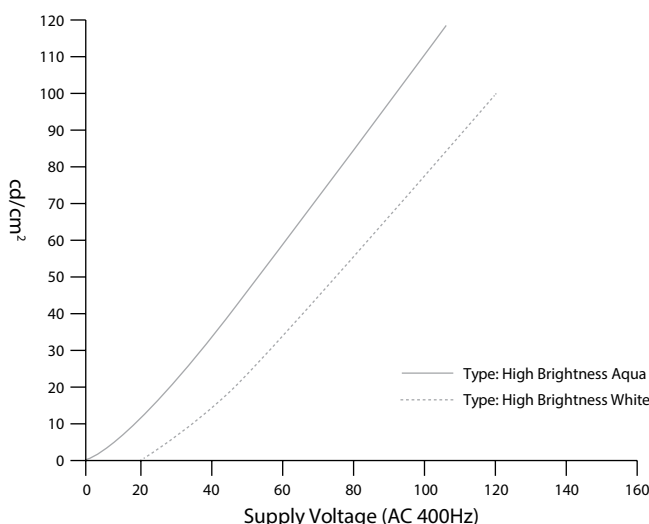


Figure 3: Brightness in cd/cm² versus supply voltage

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

*Please Note our EL panels have a life span of 5000 hours, so the race team will not have to consider the longevity/brightness of the panel.

RCI-1 EL Race Number Panel Inverter

Product Code: 212-0006



Key Features

- Designed for wide input voltage range
- Zero Load Protection
- 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

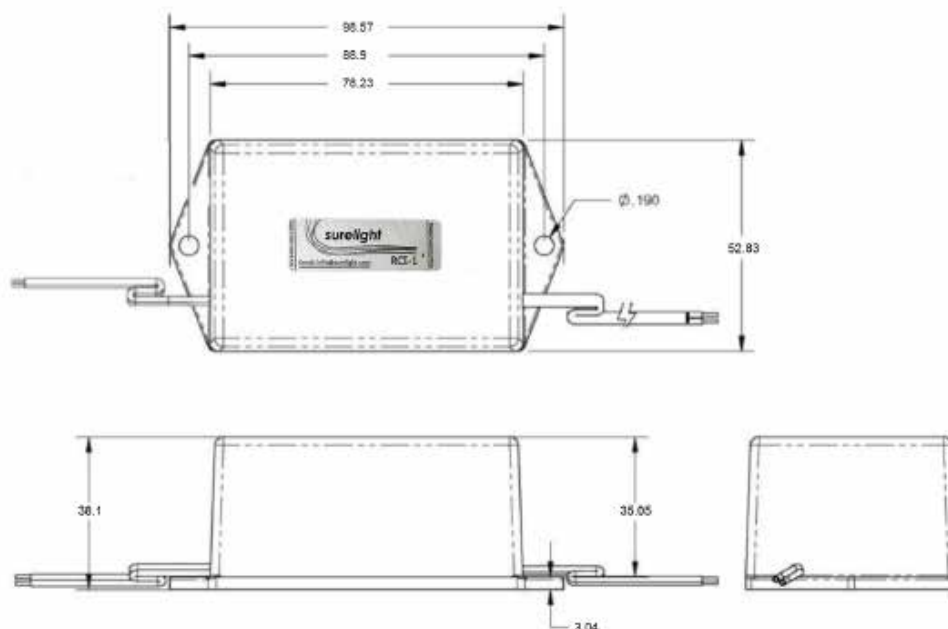
The wide input voltage parameters have been designed into the RCI-1 for the new lighter weight battery cells now being used on vehicles. These cells have a higher voltage output than traditional lead acid battery cells.

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
Integral Fixing Holes	Black	360g	IP68	W:53 L:99 H:35	900mA	450-1050cm ²	10-15V DC	95-140V AC	400-475Hz	900mm

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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