

## Important Notes for Installer and Vehicle Owner



### Compatibility to existing electrical systems

It is important for the installer to ascertain the compatibility of the low power consumption LED lamps with the electrical and/or electronic systems of the complete vehicle, including trailers. In most cases the reduced power consumption is beneficial by imposing less demands on the entire electrical system.

For certain functions some electrical systems rely on a set power consumption for monitoring whether, for example, a trailer is connected.

Operation of this lamp using alternating current or modulated direct voltage will cause premature light failure. HELLA recommends connecting ADR or ECE certified Multivolt LED signal and marker lamps to a continuous (unmodulated) 12V or 24V power supply to ensure safe light operation.

### Electromagnetic Compatibility (EMC)

This Multivolt LED lamp is an electronic device. The electrical circuits contain components that suppress possible interference, both emission as well as susceptibility, to the technical requirements for the application of the Regulatory Compliance Mark (RCM).

To avoid false signals or interference, it is standard practice that sensitive instrumentation such as ABS and Tachometers etc. are provided with direct earths.

### Protection against damage due to voltage spikes

This Multivolt LED lamp is protected against damage from positive voltage spikes caused by events such as load dump conditions specified in ISO 7637 and contains a Transient Voltage Suppressor (TVS) designed to withstand a pulse of up to 5000 Watts.

The lamp is protected against reverse polarity connection and negative voltage spikes of up to 1000 volts.

### Electric Welding

Electric Welding may damage the LED lamps. For LED lamps, HELLA recommends the negative connection to be wired isolated from the vehicle chassis. If the lamp uses the chassis as the earth return it is recommended that this earth return is disconnected during electric welding.

## FIT AND FORGET - BY DESIGN

Congratulations, the product you have selected comes from **HELLA** - a world leader in LED lighting design.



Following the launch of the first LED automotive signal lamps in 1990, **HELLA** Design and Innovation continues to set new standards. **HELLA** innovative solutions have been incorporated into millions of lamps, engineered and tested to the most stringent standards, to suit the most demanding environmental conditions.

The cornerstone to the success of our products is our no compromise **Fit and Forget - by Design** philosophy which is incorporated into every step of the product life cycle.

In a world consuming finite resources at an ever faster rate, **Fit and Forget - by Design** is the right environmental choice that also makes perfect economic sense to customers that consider the total life cycle Cost of Ownership.

For general comments about Hella's products please contact us on E-mail at [techfeedback@hella.co.nz](mailto:techfeedback@hella.co.nz)

## INSTRUCTION SHEET for: 2SD 980 602-201 / 2378-DTCS



### ADR - APPLICATION AND MOUNTING INSTRUCTIONS

## DuraLED® Combi STOP / REAR POSITION / INDICATOR LAMP with HCS Multivolt (Suitable for 12 and 24 volt systems)

#### Features Include:

- DuraLED® Combi = Fully sealed and submersible
- DuraLED® Combi = Stop, Rear Position and Direction Indicator functions in a single lamp
- DuraLED® Combi = Vibration and shock resistant
- DuraLED® Combi = Ultra long service life
- DuraLED® Combi = Ultra fast response time
- DuraLED® Combi = Lens made from advanced Grilamid® material with enhanced impact and chemical resistance
- DuraLED® Combi = Reverse polarity protected
- DuraLED® Combi = Low power consumption
- DuraLED® Combi = Enhanced transient spike protection

### Lens Marking and ADR 13/00 Installation Requirements

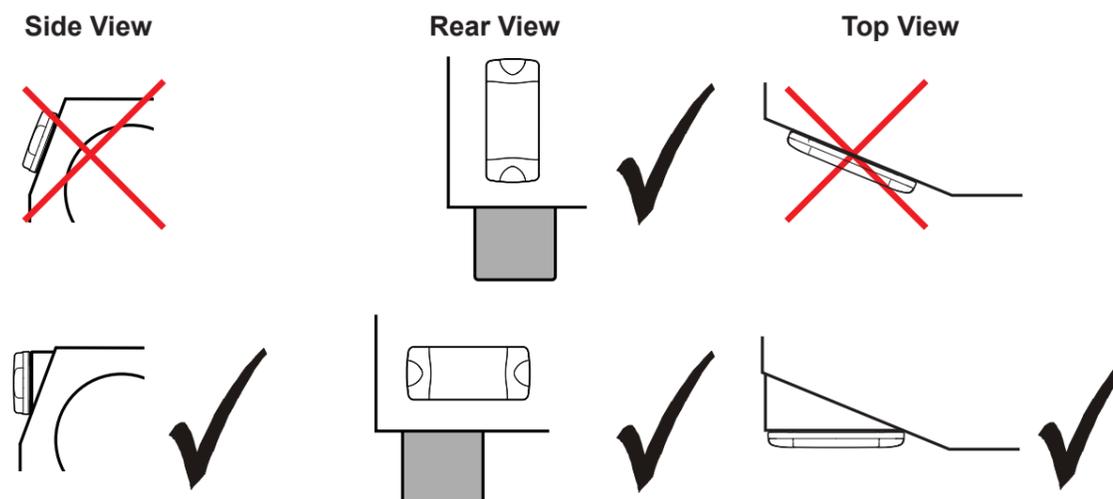
This lamp identified by lens marking and the logo, was manufactured to comply with:

ECE Regulation No. 6 for Rear Direction Indicator Lamps as an alternative standard to ADR 6/00 Category 2a  
ECE Regulation No. 7 for Rear Position (Side) / Stop Lamps as an alternative standard to ADR 49/00

- A tolerance of +/-3° applies on all mounting details.
- Lamp mounting surface must be vertical to the ground, and at right angles to the longitudinal axis of the vehicle.
- Lamp must be visible from 45° inboard and 80° outboard, as well as from 15° above and below the horizontal axis.
- Lamp is approved to be mounted horizontally and vertically.

Please refer to ADR 13/00 for more details.

**Note:** Lamp does not include a reflex reflector.



PART NUMBER	ECE NUMBER	ADR 51/00 / ECE R37 GLOBE	ECE APPLICABLE	LENS IDENTIFICATION NO.
2378-DTCS 2SD 980 602-201 980.602-201	E24 6R-015883 E24 7R-025883	N/A LED	ECE R6 ECE R7	

HELLA-New Zealand Limited, Auckland

INSTRUCTION SHEET  
for: **2SD 980 602-201 / 2378-DTCS**



**Lamp Mounting Instruction**

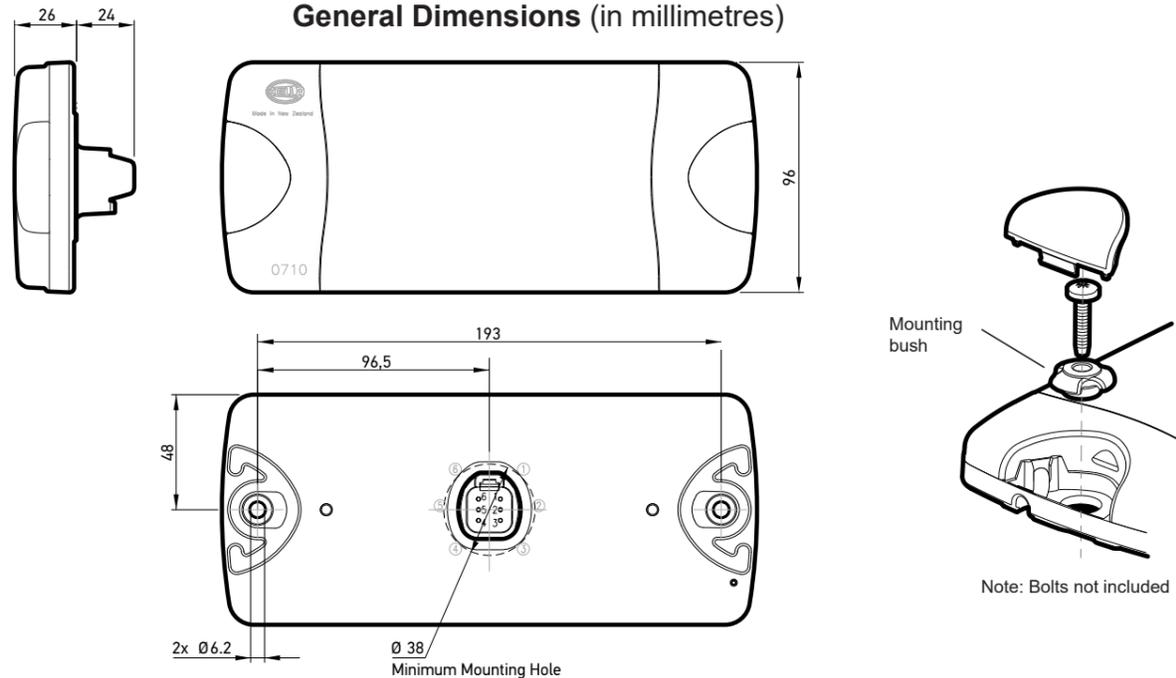
**Screw Cap Removal**

Carefully insert a small flat blade screwdriver between the cap and the lens and pull towards the lens, the cap will unclip. To install the cap push in by hand until the top is flush with the lens.

**Surface Mounting**

- Lamp should be mounted on a flat surface.
- Drill two holes up to 6.5mm Ø at 193mm centres. 6mm screws or bolts are recommended to mount the lamp using the mounting bushes provided.
- A minimum hole size of Ø38mm is required for the Deutsch 6-way socket in the backplate.
- Prepare the lamp cable (not supplied) using the correct plug connector (Deutsch P/N DT06-6S), wedge (Deutsch P/N W6S) and terminals (Deutsch P/N 0462-201-16141). These Deutsch parts can be purchased separately as a kit (HELLA P/N 4963-P).
- Once the lamp is mounted, clip the screw caps on securely until flush with the lamp surface.

**General Dimensions (in millimetres)**



**Wiring Colour Coding**

Lamp is polarity conscious. The reversal of the polarity will not damage this product but will inhibit its function.

Pin Number	Connect to	Power Consumption
1	Rear Position (+)	1 watt
2	Stop (+)	5 watts
3	Indicator (+)	5 watts
4	Indicator & ISO 13207-1 Pulse (+)	5 watts
5	Earth (-)	-
6	Park (+)	1 watt

**NB:** Lamp must be protected by a fuse rated at 5 amperes maximum.

**HCS Direction Indicator Lamps work in conjunction with HCS / ISO 13207-1 compliant failure detection systems at 24V DC. If additional lamps are fitted beyond the amount supported by the HCS / ISO 13207-1 compliant failure detection system then they must be wired separately so as not to be detected.**

**Important Notes for Installer and Vehicle Owner**



**Introduction**

Multivolt LED signal and marker lamps offer many advantages over conventional bulb lamps. Significantly reduced power consumption, ultra long life and high tolerance to shock and vibration make LED lamps the ideal choice for the commercial transport industry, where the cost of ownership versus the initial purchase price of the product is well understood.

**24V DC ISO 13207-1 Compliant Direction Indicator Lamp Monitoring with the Patented HCS (HELLA Compatibility Solution) Technology**

On vehicles being driven on public roads the operation of the Direction Indicator Lamps must be monitored and a fault must be instantly signalled to the driver. Direction Indicator Lamps are an important road safety feature signalling the direction change intention of the driver. Failure to signal or failure to recognise a direction indicator represents a significant cause for road accidents.

In many countries, LED direction indicator lamps offering a reliable 'Fit and Forget' solution, have become the retrofit item of choice for the cost conscious transport operator. LED lamps, with much lower power consumption and Multivolt features, are often a challenge for existing failure detection control electronics of modern trucks and buses. Transport fleets often feature a mixture of trailer units equipped with either bulb or LED based Direction Indicator Lamps. Each of these trailer units ideally must be freely interchangeable with any of the tractor units in the fleet.

Some manufacturers recommend to fit additional resistive loads in parallel to the LED lamps to simulate the 21 watts consumed by a bulb lamp. Such pure resistive load solutions can be problematic for the following reasons:

- They mask the possible failure of the actual LED Indicator Lamp itself.
- In many cases such pure resistive solutions do not function since they only provide a linear time/current response which is significantly different to the time/current response of a bulb filament when it heats up.
- They consume a lot of energy and thus eliminate the desired lower power advantage of an LED lamp.

**Safe conversion to LED Direction Indicator Lamps is now possible with the patented HCS HELLA Compatibility Solution.**

HELLA supplies electronic control and flasher units which make it possible to convert the indicator failure system for various vehicles. This is necessary if the vehicle manufacturer does not guarantee indicator bulb failure control via the vehicle wiring system. HCS has been patented by HELLA.

For further information about HCS please refer to the latest HELLA catalogue or the HELLA New Zealand web site, [www.hella.co.nz](http://www.hella.co.nz)