


INSTRUCTION SHEET  
for: **2BA 959 031-00x / 2138**



ADR - APPLICATION AND  
MOUNTING INSTRUCTIONS

Jumbo  
LED Multivolt (9 - 33 VOLT) MODULE  
REAR DIRECTION INDICATOR LAMP

The **Multivolt** LED module is designed to be retro-fitted to the following lamps;  
HELLA Part Numbers 2143, 2402, 2403, 2416 and 2417.  
Additionally, modules can be fitted to Designline lamps (HELLA Part Numbers 2144, 2422, 2423, 2424)  
by using the spacers and screws provided.  
This module may also be used to upgrade similar existing products.  
The **Multivolt** LED modules are designed to operate on input voltages from 9 to 33 volts.

Lens Marking and ADR 13/00 Installation requirements

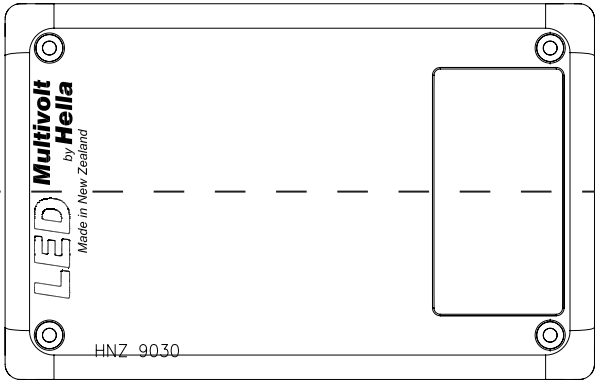
This lamp module, identified by lens marking HNZ 9030, and amber lens was manufactured to comply with  
ADR 6/00 Cat 2a Rear Direction Indicator Lamps  
ADR 47/00 Reflex Reflector

- A tolerance of +/-3 degrees applies on all mounting details.
- Lamp module mounting plane must be vertical to the ground
- Lamp module reference axis must be parallel to the vehicle longitudinal axis
- Lamp module centre line may be horizontal or vertical to the ground (approved in either direction)
- Lamp module must be visible from 45° inboard and 80° outboard, as well as from 15° above and below the horizontal axis
- Lamp module should be mounted with reflex reflector closest to the outboard edge of the vehicle

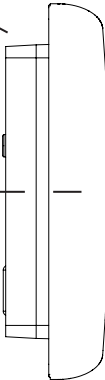
Please refer to ADR 13/00 for more details.

Lamp module mounting plane


Centre line



Reference Axis




LENS IDENTIFICATION NUMBER:    HNZ 9030    REFLEX REFLECTOR IDENTIFICATION NUMBER: 013051

CATALOGUE NUMBER	ENGINEERING NUMBER	CRN NUMBER	COMPLIANCE NUMBER	ADR 51/00 GLOBE	ADR APPLICABLE
2138	2BA 959 031-00	23069 22948	8-2138-08	N/A LED	ADR 6/00 Cat 2a ADR 47/00
AMENDMENTS			<div>ADR COMPLIANCE VERIFIED</div> <div></div>	I SSUE DATE:	
				9/99	
				959 149-06	

HELLA-New Zealand Limited, Pakuranga

959 149-06 / 05.19

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### Lamp Module Mounting Instructions

Remove lens and gasket from existing tail lamp.

**For lamp Part Numbers:- 2143, 2416, 2417**

- Remove wiring terminals (Indicator and Earth)
- Remove the bulbholder by removing centre attachment screw
- Attach cables from LED module to existing wiring. **See Wiring Colour Coding below.**

**For lamp Part Numbers:- 2402, 2403**

- Bend the bulbholder legs towards housing, or remove completely to allow room for the LED module
- Attach cables from LED module to existing wiring. **See Wiring Colour Coding below.**

**For lamp Part Numbers:- 2144, 2422, 2423, 2424**

- Remove bulbholder and hardware from housing
- The longer screws and spacers provided ensure correct fitting for these Designline housings
- Place the additional spacers on the screw bosses in the housing
- Attach cables from LED module to existing wiring. **See Wiring Colour Coding below.**

**Notes:**

- o HELLA recommends wire connections be soldered, and heat shrink tubing applied to seal the joint.
- o Designline lamp housings have a built in drain hole; for all other lamps ensure there is a clear drain hole at the lowest point in the housing to prevent possible water build up
- o Ensure there are no sharp edges to cut or chafe the cable
- o Test all lamp functions
- o Mount LED module into lamp housing with new gasket and existing screws, and fit screw caps

**Please note: This lamp contains a patented hydrophobic breathing system to equalise air pressure inside the lamp. The module is sealed against moisture and dust but not designed for prolonged submersion.**

### Wiring Colour Coding

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

Colour	Connect to	Power Consumption
White	Earth (-)	-
Yellow	Indicator (+)	9 watts
Blue*	Indicator & Trigger(+)	9 watts + simulation

(\*function not installed on all models)

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

**NB:** To take advantage of the low power consumption of LED lamps, connect the yellow(+) wire to the positive supply. If additional load is required to trigger the vehicle's pilot lamps, connect the blue(+) wire.

**Do not connect more than one pair of Indicator lamps per vehicle section with the blue(+) wire. If you are using more than one pair of Indicator lamps per section of the vehicle, then all lamps should be connected using the yellow(+) wire.**

## 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 product please contact us on E-mail at [techfeedback@hella.co.nz](mailto:techfeedback@hella.co.nz)*



Important Notes for the 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 the 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.

### 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.

### Globe failure monitoring for indicator lamps

(\*function not installed on all models)

The indicator globe failure warning (if fitted to the vehicle) relies on the full load of a 21-watt globe in most cases. Multivolt® Commercial Transport (CT) LED lamps switch on a resistive load several times during the flasher “on” cycle simulating this load. If this additional load is required to trigger the vehicle's pilot lamps, connect the blue(+) wire. Independent of the applied voltage, the blue wire circuitry simulates a 21 watt load to trigger the flasher unit pilot lamps.

**Do not connect more than one pair of Indicator lamps per vehicle section with the blue(+) wire. If you are using more than one pair of Indicator lamps per section of the vehicle, then all lamps should be connected using the yellow(+) wire.**

### Electromagnetic Compatibility (EMC)

Multivolt® LED lamps are electronic devices. 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 recommended practice that the installer always ascertains that a good earth is provided to potentially sensitive equipment such as the ECU's of the ABS, TCS, or Tachographs etc. If this cannot be assured, a direct earth path should be provided.

### Protection against damage due to voltage spikes

Multivolt® LED CT lamps are protected against damage from positive voltage spikes caused by events such as load dump conditions up to severity level 3 of ISO 7637-2 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.