

Test Date:	20.11.2024	Tested By:	Georgia
LAMP TESTED	LR-750 Elite	Test Result:	PASS
<i>Special Aiming Requirement:</i>		<i>To comply with the regulation limits, and when installed on a vehicle, the lamp should be aimed so that the point of peak intensity is aimed at 2 degrees above the horizon. (Or when using a digital protractor, the front lens angle should be at 2 degrees pointing up, from the vertical plane. This is to ensure compliance with point 4D on DOT FMVSS108.</i>	

1. Values shown are minimum of requirements except at H-V and 4D-V locations where the maximum values are shown in **italics/bold**.
2. A tolerance of $\pm 1/4$ degree in location may be allowed at any test point.



REPORT No.: PC23010390

THIS REPORT CONTAINS THE RESULTS OF COLOR TEST, VIBRATION TEST, MOISTURE TEST, DUST TEST, CORROSION TEST, WARPAGE TEST OF THE BELOW AUXILIARY HIGH BEAM LAMPS TO DEMONSTRATE COMPLIANCE WITH THE APPLICABLE REQUIREMENTS OF SAE J581

Test component : LR-750 ELITE

Manufacturer : Lazer Lamps Ltd
Units 1 & 2 Harlow Mill Business Centre
River Way,
Harlow
CM20 2FD

Test Laboratory : IDIADA,
L'Albornar - Santa Oliva (Tarragona) Spain

Report date : 26/01/2023

Applus **IDIADA** Group is officially accredited by **AMECA**
(Automotive Manufacturers Equipment Compliance Agency, Inc)

Validate this report with the security code «FWT0S9WL» at: <https://extranet.idiada.com/hom-cve>

Performed by



Joan Fonts Sala
TEST ENGINEER

Revised by:



Ramon Santafè Guiu
DEPARTMENT MANAGER



SUMMARY

TEST (SAE J581 FEB2011)

Auxiliary High Beam Lamp

Physical Inspection.....	PASSED
Color Tests	PASSED
- White	
Vibration Test.....	PASSED
Moisture Test	PASSED
Dust Test.....	PASSED
Corrosion Test.....	PASSED
Warping Test.....	PASSED

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* THE PRESENTED RESULTS REFER ONLY TO THE TESTED SAMPLE

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PHYSICAL INSPECTION

MARKINGS

Lens: : TRIPLE-R
ELITE

Housing : LED MODULE AND VOLTAGE IDENTIFICATION

LENS

Material reflector : Covestro Makrolon Polycarbonate 3107 Clear

Shape : Rectangular

Dimensions : 63 x 197 mm

Method of attachment (lens with housing) : Adhesive

HOUSING

Material : Aluminium

Shape : Rectangular

Dimensions : 73 x 230 x 105 mm

Method of mounting : 2 x M6 Screws through steel side brackets

LIGHT SOURCE

Light source category	LED
Quantity	4
Voltage	12V/24V

SAMPLE IDENTIFICATION : HTC-2212/00092



COLOR TEST

Test performed by: Joan Fonts
 Date: 03/01/2023
 Test method: Tristimulus method
 Test distance: 3.16 m. (10.4 ft)

AUXILIARY HIGH BEAM LAMP

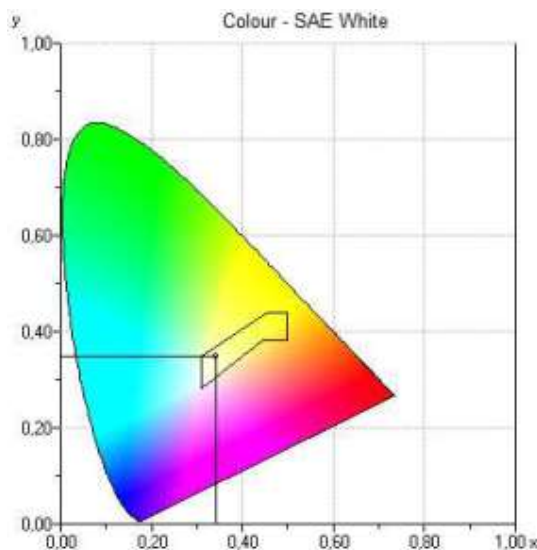
WHITE ZONE:

The color of light emitted must fall within the following boundaries:

- limit towards the blue: $x \geq 0.31$
- limit towards the yellow: $x \leq 0.50$
- limit towards the green: $y \leq 0.15 + 0.64x$
- limit towards the green: $y \leq 0.44$
- limit towards the purple: $y \geq 0.05 + 0.75x$
- limit towards the red: $y \geq 0.38$

Trichromatic co-ordinates	Sample A
x	0.343
y	0.350
z	0.307

The sample device has uniform spectral characteristics in all useful directions.



The samples tested FULFIL with the color test requirements.



PHYSICAL TESTS

Test performed by: Joan Fonts
Date: 02/01/2023 – 18/01/2023

VIBRATION TEST

The device completed the vibration test without evidence of material physical weakness, lens or reflector rotation, displacement or rupture of parts except bulb failures.

The sample tested FULFILS with the vibration test requirements.

MOISTURE TEST

At completion of test, the accumulation of moisture inside the device is less than 2cc and there is no visible moisture in the sealed reflex unit.

The sample tested FULFILS with the moisture test requirements.

DUST TEST

At completion of test, after external cleaning, the maximum candlepower readings of the device is not more than 10% less than the maximum photometric intensity of the same device after being cleaned both inside and outside.

	Comparison of maximum intensity (pre and post dust exposure)			
	Max. photometric intensity (<i>prior to dust test</i>)	Max. photometric intensity after external cleaning (<i>after the dust test</i>)	Change (%)	
Auxiliary High Beam Lamp	70054	69714	99.5%	CORRECT

The sample tested FULFILS with the dust test requirements.

CORROSION TEST

At completion of test, there is no evidence of corrosion which would affect the proper function of the device.

The sample tested FULFILS with the corrosion test requirements.

WARPAGE TEST

At completion of test, there is no evidence of warpage of the plastic components which would affect the proper function of the device.

The sample tested FULFILS with the warpage test requirements.

PLASTIC OPTICAL MATERIAL TEST

Outdoor exposure test (3 years in Florida and Arizona) and Heat test are skipped out of this report. Nevertheless, all lens materials and pigments (Covestro Makrolon Polycarbonate 3107 Clear) are listed in the last version of “AMECA List of Acceptable Plastics for optical lenses and reflex reflectors used on motor vehicles”.^o

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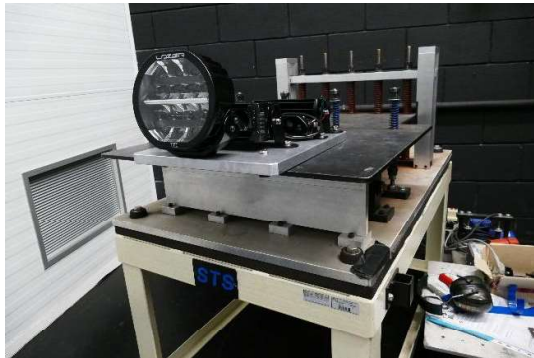
PHOTOGRAPHS



Sample after photometric test



Sample during warpage test



Sample after vibration test



Sample after corrosion test



Sample after dust test



Sample after moisture test

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PC23010390

IDIADA

TECHNICAL DOCUMENTATION

Triple-R Lights LLC
16192 Coastal Highway
Lewes Delaware
DE 19968

DATE: 05/05/2022
DOCUMENT VERSION 1
TRADE NAME: TRIPLE-R LIGHTS LLC
DEVICE NAME: LR-750 ELITE
DEVICE PART NUMBER: LR4-EL-B
TYPE : LR-750 ELITE

TESTED TO SAE J581 & DOT FMVSS108 COMPLIANT

REVISION TABLE

Revision #	Description	Date	Approved
N	First Draft	05/05/2022	BRS
1	Initial Release	22/11/2022	BRS

Manufacturers Office Address:

Lazer Lamps Ltd
Units 1 & 2 Harlow Mill Business Centre
River Way,
Harlow
CM20 2FD

Manufacture Address:

Lazer Lamps Ltd
Units 1 & 2 Harlow Mill Business Centre
River Way,
Harlow
CM20 2FD

Intended lens marking:
" SAE DOT H 22 HL LED "

Overview

The "LR-750 ELITE" is tested to SAE J581 as an auxiliary HIGH BEAM LAMP and is compliant with DOT FMVSS108 requirements. This document is intended to provide a detailed explanation for the device.

Device Technical Description

The Driving Light function is designed for both LH and RH traffic. The lamp is designed for fitment on the left or right-hand side of the vehicle. The headlamp does not contain an adjustable reflector. Alignment of the headlamp is controlled by an adjustable mount to the vehicle. The light source is LED. There are a total of ten LEDs to create the High Beam Light function. The device is compatible with both 12V and 24V systems. The lens is made from Covestro Makrolon (now re-named Exolon by the manufacturer) with UVHC3000K hard coat.

LED MODULE Technical Description

Input voltage is 12V / 24V. Total objective luminous flux for the LED module is 5068 lumens.

The ten LEDs used to meet **SAE J581 / DOT FMVSS108 compliance** are:

8 pcs Luxeon Z ES (LXZ250803), drive current = 1.2 Amps.

2 pcs Cree XPL HI (XPLAWT-H0-CLAZ-000BV30LA), drive current = 2.67 Amps.

When running in SAE/DOT Compliant mode, the LED drivers operate with a 25% duty cycle.

The Luxeon Z ES LEDs are controlled by the LED driver “LT3756” as manufactured by “Linear Technology”. The Cree XPL HI LEDs are controlled by the LED driver “A6213” as manufactured by “Allegro”.

There is an analogue thermal control within the LED driver which monitors the temperature on the circuit board and adjusts the drive current through the LEDs when potentially damaging high temperatures are reached. This safety mechanism may engage in high ambient temperature environments and when the lamp has been switched on for around 30 minutes, without air flow.

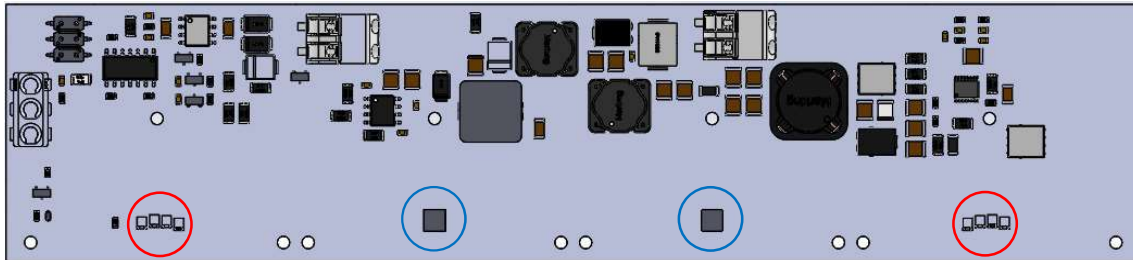


Figure 1 : Assembled Board layout, 8pcs Luxeon Z ES LED, 2 pcs Cree XPL HI LED

Other Functions

The customer has the chance to switch from the approved High Beam Light function to a function with higher luminous flux, when they are using the lamp in a State (or country) where DOT FMVSS108 photometric limits aren't required, or where they are driving off-highway. To convert the approved high beam to have a higher light output, the customer may use the “E-Boost” system. A small polycarbonate clip featuring a magnet can be installed by the driver of the vehicle, which activates a hall sensor within the lamp and changes the duty cycle from 25% to 100%, thereby increasing the light output accordingly. It is made clear to the purchaser of the product that it is their responsibility to comply with the highway regulations, and E-Boost must not be active during highway use in a State where DOT photometric limits apply.

LR-750 Elite
SAE J581 / DOT APPROVAL DOC



Triple-R Lights LLC
16192 Coastal Highway
Lewes Delaware
DE 19968

A handwritten signature in brown ink, appearing to read "B. Russell-Smith".

SIGNED: Ben Russell-Smith
Director – Lazer Lamps Ltd

IDIADA PC23010390

Triple-R Lights LLC
Registered in Delaware

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