

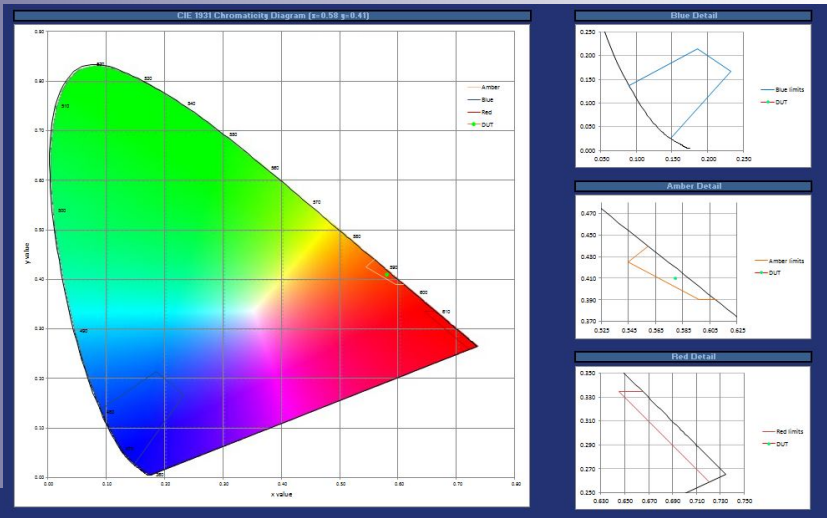
Quadrant2 has completed a contract for design consultancy, photometry equipment and custom software to measure vehicle warning lights (light bars, beacons and directional lights) to UN ECE R65 and other such standards.

LAP Electrical Ltd, one of the UK's leading manufacturers of automotive lighting, fuel systems and other specialised products has made significant investment in a dark room and associated equipment to allow on-site development, pre-certification and Conformity of Production (CoP) testing. The installation has been successfully audited by the VCA.

LAP contracted Quadrant2 to supply a range of services (including design, test and audit) for new vehicle warning products and test facilities.

For further information about Quadrant2 design consultancy or photometric test solutions, please contact us, details below.

*Concentrating on the Important*



**Timing Measurements** [Edit] [Close]

Number of flashes in waveform:

Duration of flashes: Time on:  msec, Time off:  msec

Time of period (at 12 V DC):  msec

Total on time (th):  seconds (0.4f)

Timing test result: **Pass**

Light is 'on' when amplitude is above 10% of maximum value

If flashes are of identical timings, you can enter the first flash details only. If not, enter the detail for each flash

If any 'Off' time exceeds 40ms, only the first flash is counted which will reduce the effective intensity

The frequency of the flash at Nominal voltage is 2 Hz

Utilisation factor is 85% - All flashes identical

**Extended timing measurements**

**Photometric Test Results** [Edit] [Close]

**Class I Table**

H angle	ILT Reading	Results Table 8'				Status	Results Table 0'				Min 8'	
		Left	Right	F	Je		Value	Index	Left	Right		F
0	1.10	1	46.30	0.34	125.13	Pass	1.10	1	46.30	0.34	125.13	Pass
15	1.12	1	47.14	0.34	127.40	Pass	1.12	1	47.14	0.34	127.40	Pass
30	1.14	1	47.98	0.34	129.68	Pass	1.14	1	47.98	0.34	129.68	Pass
45	1.12	1	47.14	0.34	127.40	Pass	1.12	1	47.14	0.34	127.40	Pass
60	1.06	1	44.61	0.34	120.58	Pass	1.06	1	44.61	0.34	120.58	Pass
75	1.08	1	45.46	0.34	122.85	Pass	1.08	1	45.46	0.34	122.85	Pass
90	1.12	1	47.14	0.34	127.40	Pass	1.12	1	47.14	0.34	127.40	Pass
105	1.10	1	46.30	0.34	125.13	Pass	1.10	1	46.30	0.34	125.13	Pass
120	1.14	1	47.98	0.34	129.68	Pass	1.14	1	47.98	0.34	129.68	Pass
135	1.14	1	47.98	0.34	129.68	Pass	1.14	1	47.98	0.34	129.68	Pass
150	1.07	1	45.03	0.34	121.71	Pass	1.07	1	45.03	0.34	121.71	Pass
165	1.08	1	45.46	0.34	122.85	Pass	1.08	1	45.46	0.34	122.85	Pass
180	1.10	1	46.30	0.34	125.13	Pass	1.10	1	46.30	0.34	125.13	Pass

**UN ECE R65 Test Report** Test Reference:

Test Result: **Pass**

**Product Details**

Product Type: Beacon, Category: TAL, Type of test: CoP

Existing certificate number: None, R65 Class: 1, Primary light source: 1

Model: None, Voltage: 12V, Light source type: LED, Light source colour: Amber, Class: Class

**Timing Results**

Number of flashes in waveform: 2, Time of period at 12 V DC: 0.5 seconds, F (Hz) Nom: 2.00 V DC, 1.00 Hz (measured)

Total Flash On/Off time: 0.13750 seconds, Total on time (th): 0.2 seconds, at 10% V (10.8 V DC), Not measured

Non-on Voltage: 12 V DC, at 10% V (10.8 V DC), Not measured

Timing test result: **Pass**

**Test Setup**

Test cell supply voltage: 12.5 V DC, ILT calibration factor: 100.00%, %

Photometric performance @ 1 m: **Pass**, Ambient Temperature: 20.1°C, Light established after 15 min: **Pass**

**Photometric Results**

Results Table 8' - Class I				Results Table 0' - Class I				Results Table 0' - Class I										
Left	Right	F	Je	Value	Index	Left	Right	F	Je	Value	Index	Left	Right	F	Je			
0	1.10	1	46.30	0.34	125.13	Pass	1.10	1	46.30	0.34	125.13	Pass	1.10	1	46.30	0.34	125.13	Pass
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**Intensity vs Min (8') Interpolated**

**Intensity vs Min (0') Interpolated**

**Section result: Pass**

Colour Test: **Pass**, HVD Reference Test: **No reference**, HVD test analysis: **No reference**

Overall Photometric Result: **Pass**

Tested By:  Date of Test:

