
	Test report n.	308-QL13-R01 ver. 0	 LAB N°1235 Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC Signatory of EA, IAF and ILAC Mutual Recognition Agreements
	Applicant	ILT Italy S.r.l. via Cancelliera 10/a, 00041 Albano Laziale – Roma - Italy	
	EUT/Type	LL STREET PS90-14-60W-GAG-3000K-C75	

## TEST REPORT Nr. 308-QL13-R01 ver. 0



GENERAL INFORMATION	
Addresses	
Applicant	ILT Italy S.r.l. via Cancelliera 10/a, 00041 Albano Laziale – Roma - Italy
Manufacturer	LEADER LIGHT s.r.o. M. Gorkeho 33 SK - 052 01 Spisska Nova Ves, Slovak Republic
Test laboratory	Qualilab s.r.l. Via Trento, 87 25020 – Capriano del Colle (BS)
Dates	
Report Date	Ver. 0: 13/05/2013
Note on new version	n.a.
Equipment under test	
Equipment under test	LED Luminaire
Type:	LL STREET PS90-14-60W-GAG-3000K-C75
Markings:	n.a.
Date of receipt:	n.a.
Date and method of sampling:	Sampling performed by the manufacturer
Applicable norms	
	Test performed according to: CEI EN 62471:2010 ( <i>photobiological safety of lamps and lamp systems</i> )

The test results and observations indicated in this test report refer exclusively to the samples tested. It is not permitted to transfer the results to other systems or configurations.

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Test item particulars declared by the manufacturer	
Ratings	230V, 50Hz
Versions	LL STREET PS90-14-60W-GAG-3000K-C75
LED type	N°14 Led – Model not declared
PCB input current	20 mA
Lamp socket	n.a.
Electronic control gear manufacturer	Leader Light:
Electronic control gear model	AC90-264V; 47-63Hz cold start 40A/230VAC cos: 0,95
Test item particulars	
Tested lamp	<input checked="" type="checkbox"/> continuous wave lamps <input type="checkbox"/> pulsed lamps
Type of lamp	<input checked="" type="checkbox"/> GLS (500lx @ 2020 mm) <input type="checkbox"/> NON GLS (distance 200mm)
Light emitting surface	570mm (L) x 35mm (H) → 58.7 mrad



TEST AND RESULTS			
Test Name	Test Procedure	Test measurement	Overall risk group
Photobiological safety of lamps and lamp systems	CEI EN 62471:2010	<b>Actinic UV - EXEMPT</b> <b>Near UV - EXEMPT</b> <b>Blue light - EXEMPT</b> <b>Retinal thermal - EXEMPT</b> <b>Infrared – N.A.</b>	<b>EXEMPT</b>

STATEMENT
<p>The Test Report comprises 6 pages.</p> <p>The test results presented in this report relate only to the object tested.</p> <p>The English version is the only official version of this test report</p> <p>Questo rapporto di prova contiene 6 pagine. La versione inglese di questo rapporto di prova è l'unica versione ufficiale che fa fede.</p> <p>The measured value (y) and the associated expanded uncertainty (U) represent the interval (y±U) which contains the value of the measured quantity with a probability of approximately 95% and a coverage factor k=2. Il valore misurato (y) e l'incertezza estesa associata (U) rappresentano l'intervallo (y±U) che contiene il valore della quantità misurata con una probabilità di circa il 95% e un fattore di copertura K=2.</p>

Capriano del Colle, 13/05/2013

Ing. Michele Peschiera  
Testing engineer

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<b>APPENDIX I</b>	<b>Photobiological safety of lamps and lamp systems</b>
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Standard CEI EN 62471:2010

Sample N° 308-QL13-S01

Place of test QUALILAB s.r.l. - Via Trento, 87  
25020 – Capriano del Colle (BS)

Date of test 06/05/2013

Environmental conditions temperature 25°C±1°C

Testing instruments

Type	QL internal number	manufacturer	model	Serial number	Last calibration	Next calibration
Spectrometer	QL-IN-009	Bentham	IDR300-PSL	11476	07/12	07/13
Irradiance standard UV	QL-IN-016	Bentham	CL7	11339	07/12	07/13
Irradiance standard VIS-IR	QL-IN.015	Bentham	CL6	114441	07/12	07/13
Radiance standard	QL-IN-017	Bentham	SRS12	115161	07/12	07/13
AC power supply	QL-IN-011	CHROMA	6415	641500000407	n.a.	n.a.
DC power supply	QL-IN-054	HP	HP6653A	36400567	n.a.	n.a.
Multimeter	QL-IN-027	ISOTECH	IDM305	94200563	11/12	11/14
meter	QL-IN-051	Stanley	Powerlock	33-198	09/11	09/13

Test procedure The sample was prepared, stabilized and measured like defined in CEI EN 62471:2010.

Test requirements Continuous wave lamps

Exempt Group



In the exempt group are lamps, which does not pose any photobiological hazard. The requirement is met by any lamp that does not pose:

- an actinic ultraviolet hazard ( $E_S$ ) within 8-hours exposure (30000 s), nor
- a near-UV hazard ( $E_{UVA}$ ) within 1000 s, (about 16 min), nor
- a retinal blue-light hazard ( $L_B$ ) within 10000 s (about 2,8 h), nor
- a retinal thermal hazard ( $L_R$ ) within 10 s, nor
- an infrared radiation hazard for the eye ( $E_{IR}$ ) within 1000 s

Risk Group 1 (Low-Risk)

In this group are lamps, which exceeds the limits for the except group but that does not pose:

- an actinic ultraviolet hazard ( $E_S$ ) within 10000 s, nor
- a near ultraviolet hazard ( $E_{UVA}$ ) within 300 s, nor
- a retinal blue-light hazard ( $L_B$ ) within 100 s, nor
- a retinal thermal hazard ( $L_R$ ) within 10 s, nor
- an infrared radiation hazard for the eye ( $E_{IR}$ ) within 100 s

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Lamps that emit infrared radiation without a strong visual stimulus and do not pose a near-infrared retinal hazard ( $L_{IR}$ ), within 100 s are in Risk Group 1.

Risk Group 2 (Moderate-Risk)

This requirement is met by any lamp that exceeds the limits for Risk Group 1, but that does not pose:

- an actinic ultraviolet hazard ( $E_S$ ) within 1000 s exposure, nor
- a near ultraviolet hazard ( $E_{UVA}$ ) within 100 s, nor
- a retinal blue-light hazard ( $L_B$ ) within 0,25 s (aversion response), nor
- a retinal thermal hazard ( $L_R$ ) within 0,25 s (aversion response), nor
- an infrared radiation hazard for the eye ( $E_{IR}$ ) within 10 s

Lamps that emit infrared radiation without a strong visual stimulus and do not pose a near-infrared retinal hazard ( $L_{IR}$ ), within 10 s are in Risk Group 2.

Risk Group 3 (High-Risk)

Lamps which exceed the limits for Risk Group 2 are in Group 3.

CENELEC common modifications

Exposure limits

- Limits of the Artificial Optical Radiation Directive (2006/25/EC) have been applied instead of those fixed in EN 62471:2010

Test measurements

Model at a distance of 2020 mm:

Emission limits for risk groups of continuous wave lamps									
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	$E_S$	$W \cdot m^{-2}$	<b>0.001</b>	<b>6.49E-10</b>	-	-	-	-
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	<b>0.33</b>	<b>1.92E-05</b>	-	-	-	-
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	<b>100</b>	<b>1.85E+01</b>	10000		4000000	
Blue light, small source	$B(\lambda)$	$E_B$	$W \cdot m^{-2}$	<b>0.01*</b>	<b>N/A</b>	1,0		400	
Retinal thermal	$R(\lambda)$	$L_R$	$W \cdot m^{-2} \cdot sr^{-1}$	$\frac{28000}{\alpha} \equiv$ <b>4.8E+05</b>	<b>3.58E+03</b>	$28000/\alpha$		$71000/\alpha$	
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	<b>545000</b>	<b>N/A</b>				
				$\frac{0.0017 \leq \alpha}{\leq 0.011}$					
				$\frac{6000/\alpha}{\leq 0.11 \leq \alpha}$ $\leq 0.1$	<b>N/A</b>				
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	<b>100</b>	<b>N/A</b>	570		3200	



\* Small source defined as one with  $\alpha < 0,011$  radian. Averaging field of view at 10000 s is 0,1 radian.  
\*\* Involves evaluation of non-GLS source

Uncertainty of measurement:

Measured value in  $W \cdot m^{-2}$   $U = 0.0336 \cdot y$   
Measured value in  $W \cdot m^{-2} \cdot sr^{-1}$   $U = 0.0347 \cdot y$

**TEST RESULT**



**EXEMPT GROUP - Risk group 0**

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<b>APPENDIX II</b>	<b>Labeling</b>
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Hazard	Hazard-related risk group labeling of lamps systems			
	Exempt Risk Group	Risk Group 1	Risk Group 2	Risk Group 3
Ultraviolet hazard 200-400 nm	<input checked="" type="checkbox"/> Not required	<input type="checkbox"/> NOTICE UV emitted from this product	<input type="checkbox"/> CAUTION UV emitted from this product	<input type="checkbox"/> WARNING UV emitted from this product
Retinal blue light hazard 300-400 nm	<input checked="" type="checkbox"/> Not required	<input type="checkbox"/> Not required	<input type="checkbox"/> CAUTION Possibly hazardous optical radiation emitted from this product	<input type="checkbox"/> WARNING Possibly hazardous optical radiation emitted from this product
Retinal blue light or thermal hazard 400-780 nm	<input checked="" type="checkbox"/> Not required	<input type="checkbox"/> Not required	<input type="checkbox"/> CAUTION Possibly hazardous optical radiation emitted from this product	<input type="checkbox"/> WARNING Possibly hazardous optical radiation emitted from this product
Cornea/Lens infrared hazard 780-3000 nm	<input checked="" type="checkbox"/> Not required	<input type="checkbox"/> NOTICE IR emitted from this product	<input type="checkbox"/> CAUTION IR emitted from this product	<input type="checkbox"/> WARNING IR emitted from this product
Retinal/thermal hazard, weak visual stimulus 780-1400 nm	<input checked="" type="checkbox"/> Not required	<input type="checkbox"/> WARNING IR emitted from this product	<input type="checkbox"/> WARNING IR emitted from this product	<input type="checkbox"/> WARNING IR emitted from this product

Hazard	Explanation of labeling information and guidance on control measures			
	Exempt Risk Group	Risk Group 1	Risk Group 2	Risk Group 3
Ultraviolet hazard 200-400 nm	<input checked="" type="checkbox"/> Not required	<input type="checkbox"/> Minimize exposure to eyes or skin. Use appropriate shielding	<input type="checkbox"/> Eye or skin irritation may result from exposure. Use appropriate shielding	<input type="checkbox"/> Avoid eye and skin exposure to unshielded product
Retinal blue light hazard 300-400 nm	<input checked="" type="checkbox"/> Not required	<input type="checkbox"/> Not required	<input type="checkbox"/> Do not stare at operating lamp. May be harmful to the eye	<input type="checkbox"/> Do not look at operating lamp. Eye injury may result
Retinal blue light or thermal hazard 400-780 nm	<input checked="" type="checkbox"/> Not required	<input type="checkbox"/> Not required	<input type="checkbox"/> Do not stare at operating lamp. May be harmful to the eye	<input type="checkbox"/> Do not look at operating lamp. Eye injury may result
Cornea/Lens infrared hazard 780-3000 nm	<input checked="" type="checkbox"/> Not required	<input type="checkbox"/> Use appropriate shielding or eye protection	<input type="checkbox"/> Avoid eye exposure. Use appropriate shielding or eye protection	<input type="checkbox"/> Avoid eye exposure. Use appropriate shielding or eye protection
Retinal/thermal hazard, weak visual stimulus 780-1400 nm	<input checked="" type="checkbox"/> Not required	<input type="checkbox"/> Do not stare at operating lamp	<input type="checkbox"/> Do not stare at operating lamp	<input type="checkbox"/> Do not look at operating lamp

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**APPENDIX III** **Photographs + Spectrum**

