LABORATOIRES POURQUERY (HK) LTD.
INDUSTRIAL ANALYSIS
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Hong Kong, 04/01/2018

CERTIFICATE OF CONTROL N° C2017-53434
ATTESTATION DE CONTROLE N°C2017-53434

For the account of : *Pour le compte de :*	**SUNRISE OUTDOOR LTD** Rm818, Tianyihaojing Block A, No.19 Hualou Lane,Ningbo,315000,China
Name of the product *Nom du produit :*	**PARASOL ROMA SOLAIRE LED MAT ET BALEINE EN ALU POLYESTER 200G/M2**
Customer's product reference : *Référence produit du*	**U124**
Name of the supplier : *Nom du fournisseur :*	/
Suppliers's product reference : *Référence produit du fournisseur :*	**U124**
Order number : *Numéro de commande :*	/

Quantity of sample(s) *Echantillon(s) reçu(s) :*	**1**	**Received on :** *Reçu le :*	**27-12-2017**
LPHK's sample reference : *Référence échantillon LPHK :*	**S2017-55826**	**Test report :** *Rapport d'essais :*	**R2017-54113**

SCOPE / *REFERENTIEL:*

Specific test according to / *Essai spécifique selon :*

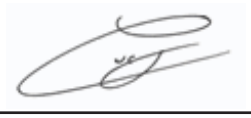
NF EN 60598-1 (2015) & NF EN 60598-2-7 (1991) + A2 + A12 + A13 & Eurolab France NT n°33 §7.6 (4.3) & §7.10 (5.3.3) & §7.13 (9.2) & Marking

CONCLUSION OF THE LABORATORY / *CONCLUSION DU LABORATOIRE :*

The sample submitted to the laboratory fulfills the requirements of this analysis.

L'échantillon soumis au laboratoire satisfait aux exigences de cette analyse.

Summary of test results :
Compilation des résultats des essais :
See appendix
Voir annexe



Approved by / *Approuvé par :*

Eric LAOT
Technical Manager

These results only apply to the sample, product or material submitted to the laboratory and as defined in the present document.
This Certificate of Control summarizes the results of the performed test(s). It should not be used as a substitute for its associated test report(s).
Ces résultats ne s'appliquent qu'à l'échantillon, au produit ou au matériel soumis au laboratoire, et tel qu'il est défini dans le présent document.
Cette Attestation de Contrôle est un résumé des résultats des essais qui ont été réalisés. Elle ne peut se substituer aux rapports d'essais qui lui sont associés.

A Subsidiary of Laboratoires POURQUERY - France
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APPENDIX / *ANNEXE*

SUMMARY OF TEST RESULTS / *COMPILATION DES RESULTATS DES ESSAIS*

NON CONFORMITY POINT(S)/ *NON CONFORMITE(S):*

None */ Néant*

MARKING NON CONFORMITY POINT(S)/ *NON CONFORMITE(S) DE MARQUAGE:*

None */ Néant*

COMMENT(S)/ *REMARQUE(S):*

- No packaging provided for test.

LABORATOIRES POURQUERY (HK) LTD.
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TEL : (852) 2548 9072 FAX : (852) 2540 4764

Hong Kong, 08/11/2017

CERTIFICATE OF CONTROL N° C2017-52529
ATTESTATION DE CONTROLE N°C2017-52529

For the account of : *Pour le compte de :*	**SUNRISE OUTDOOR LTD** Rm818, Tianyihaojing Block A, No.19 Hualou Lane,Ningbo,315000,China
Name of the product *Nom du produit :*	**LED OF PARASOL ROMA SOLAIRE LED MAT ET BALEINE EN ALU POLYESTER 200G/M2**
Customer's product reference : *Référence produit du*	**U124**
Name of the supplier : *Nom du fournisseur :*	*/*
Suppliers's product reference : *Référence produit du fournisseur :*	**U124**
Order number : *Numéro de commande :*	*/*

Quantity of sample(s) *Echantillon(s) reçu(s) :*	**1**	**Received on :** *Reçu le :*	**17-10-2017**
LPHK's sample reference : *Référence échantillon LPHK :*	**S2017-54856-2**	**Test report :** *Rapport d'essais :*	**3042488.50**

SCOPE */ REFERENTIEL:*

EN 62471 (2008)

Summary of test results :
Compilation des résultats des essais :
See appendix
Voir annexe

Approved by / *Approuvé par :*

Eric LAOT
Technical Manager

These results only apply to the sample, product or material submitted to the laboratory and as defined in the present document.
This Certificate of Control summarizes the results of the performed test(s). It should not be used as a substitute for its associated test report(s).
Ces résultats ne s'appliquent qu'à l'échantillon, au produit ou au matériel soumis au laboratoire, et tel qu'il est défini dans le présent document.
Cette Attestation de Contrôle est un résumé des résultats des essais qui ont été réalisés. Elle ne peut se substituer aux rapports d'essais qui lui sont associés.

Test Report issued under the responsibility of:

DEKRA

TEST REPORT
IEC 62471
Photobiological safety of lamps and lamp systems

Report Reference No	:	3042488.50
Date of issue	:	2017-11-03
Total number of pages	:	21 Pages
Testing Laboratory	:	DEKRA Certification Hong Kong Limited
Address	:	Unit 1-14, 6/F., Fuk Shing Commercial Building, 28 On Lok Mun Street, On Lok Tsuen, Fanling, N.T., Hong Kong
Applicant's name	:	LABORATORIES POURQUERY (H.K.) LTD.
Address	:	Unit C, 10/F, Hang Cheong Factory, Building 1 Wing Ming Street, Lai Chi Kwok, Kowloon, Hong Kong
Test specification	:	
Standard	:	IEC 62471: 2006 (1st edition)
Test procedure	:	Type test
Non-standard test method	:	N/A
Test Report Form No	:	IEC62471A
TRF Originator	:	VDE Testing and Certification Institute
Master TRF	:	Dated 2009-05
Test item description	:	LED
Trade Mark	:	N/A
Manufacturer	:	(Same as applicant)
Factory	:	(Same as applicant)
Address	:	(Same as applicant)
Model/Type reference	:	S2017-54856
Ratings	:	3,5 Vdc, 80 mA

Testing procedure and testing location:	
☒ **Testing Laboratory**:	DEKRA Certification Hong Kong Limited
Testing location/ address .....:	Unit 1-14, 6/F., Fuk Shing Commercial Building, 28 On Lok Mun Street, On Lok Tsuen, Fanling, N.T., Hong Kong
Tested by (name + signature) .....:	Kit Ngan
Approved by (+ signature).....:	Cliff Fung

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
Have been tested according to the IEC 62471(first edition, 2006-07) **at 500 lux distance** and been classified as **Exempt group.** Have been tested according to the EN 62471:2008 **at 500 lux distance** and been classified as **Exempt group.** Have been tested according to the IEC/TR 62778:2014 **at 200 mm** and been classified as **Exempt group Unlimited for blue light hazard**.	DEKRA Certification Hong Kong Limited Unit 1-14, 6/F., Fuk Shing Commercial Building, 28 On Lok Mun Street, On Lok Tsuen, Fanling, N.T., Hong Kong

Summary of compliance with National Differences:

CENELEC common modification (EU) according to EN 62471: 2008.

Copy of marking plate:

N/A

Test item particulars ..... :	Compact lighting mirror
Tested lamp ..... :	☒ continuous wave lamps ☐ pulsed lamps
Tested lamp system ..... :	N/A
Lamp classification group ..... :	☒ exempt ☐ risk 1 ☐ risk 2 ☐ risk 3
Lamp cap ..... :	N/A
Bulb ..... :	Non-replaceable LED
Rated of the lamp ..... :	I_F: 80 mA , V_F = 3,5 V
Furthermore marking on the lamp ..... :	N/A
Seasoning of lamps according IEC standard ..... :	N/A
Used measurement instrument ..... :	Spectroradiometer
Temperature by measurement ..... :	25 °C
Information for safety use ..... :	--

Possible test case verdicts:

– test case does not apply to the test object ..... : N/A (Not applicable)

– test object does meet the requirement ..... : P (Pass)

– test object does not meet the requirement ..... : F (Fail)

Testing:

Date of receipt of test item ..... : 2017-10-26

Date (s) of performance of tests ..... : 2017-10-26 to 2017-11-03

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.
Throughout this report a comma (point) is used as the decimal separator.
List of test equipment must be kept on file and available for review.
Although not listed in this report, IEC/TR 62471-2: 2009 is also taken into account.

Full tests were performed.
The products considered as worst case which should be evaluated at 200 mm.

The model in this report were classified as Risk group 1, therefore these do not pose any photobiological hazard according to IEC 62471. No labelling is required.

The models in this report were classified as Exempt group Unlimited for blue light hazard according to blue light hazard required by IEC/TR 62778:2014. No threshold distance is needed

List of attachments:

Appendix 1: Lists of equipment (1 Page)
Appendix 2: Photo of document (2 Pages)
Appendix 3: Test Result (1 Pages)
Appendix 4: LED specification (1 Page)
Appendix 5: EU Group common modification according to EN 62471: 2008 (2 Pages)

General product information:

The product covered in this report is Light box.
Single LED is performed in testing.

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict
4	**EXPOSURE LIMITS**		P
4.1	General		P
	The exposure limits in this standard is not less than 0,01 ms and not more than any 8-hour period and should be used as guides in the control of exposure		P
	Detailed spectral data of a light source are generally required only if the luminance of the source exceeds 10^4 cd·m^{-2}	see clause 4.3	P
4.3	Hazard exposure limits		P
4.3.1	Actinic UV hazard exposure limit for the skin and eye		P
	The exposure limit for effective radiant exposure is 30 J·m^{-2} within any 8-hour period		P
	To protect against injury of the eye or skin from ultraviolet radiation exposure produced by a broadband source, the effective integrated spectral irradiance , E_S, of the light source shall not exceed the levels defined by:		P
	$E_s \cdot t = \sum_{200}^{400} \sum_{t} E_\lambda(\lambda,t) \cdot S_{UV}(\lambda) \cdot \Delta t \cdot \Delta\lambda \le 30$ J·m^{-2}		P
	The permissible time for exposure to ultraviolet radiation incident upon the unprotected eye or skin shall be computed by:		P
	$t_{max} = \frac{30}{E_s}$ s		P
4.3.2	Near-UV hazard exposure limit for eye		P
	For the spectral region 315 nm to 400 nm (UV-A) the total radiant exposure to the eye shall not exceed 10000 J·m^{-2} for exposure times less than 1000 s. For exposure times greater than 1000 s (approximately 16 minutes) the UV-A irradiance for the unprotected eye, E_{UVA}, shall not exceed 10 W·m^{-2}.		P
	The permissible time for exposure to ultraviolet radiation incident upon the unprotected eye for time less than 1000 s, shall be computed by:		P
	$t_{max} \le \frac{10\,000}{E_{UVA}}$ s		P
4.3.3	Retinal blue light hazard exposure limit		P
	To protect against retinal photochemical injury from chronic blue-light exposure, the integrated spectral radiance of the light source weighted against the blue-light hazard function, B(λ), i.e., the blue-light weighted radiance , L_B, shall not exceed the levels defined by:		P

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict
	$L_B \cdot t = \sum_{300}^{700} \sum_{t} L_\lambda(\lambda,t) \cdot B(\lambda) \cdot \Delta t \cdot \Delta\lambda \le 10^6$ $J \cdot m^{-2} \cdot sr^{-1}$	for t ≤ 10^4 s $t_{max} = \frac{10^6}{L_B}$	P
	$L_B = \sum_{300}^{700} L_\lambda \cdot B(\lambda) \cdot \Delta\lambda \le 100$ $W \cdot m^{-2} \cdot sr^{-1}$	for t > 10^4 s	P
4.3.4	Retinal blue light hazard exposure limit - small source		N/A
	Thus the spectral irradiance at the eye E_λ, weighted against the blue-light hazard function B(λ) shall not exceed the levels defined by:	see table 4.2	N/A
	$E_B \cdot t = \sum_{300}^{700} \sum_{t} E_\lambda(\lambda,t) \cdot B(\lambda) \cdot \Delta t \cdot \Delta\lambda \le 100$ $J \cdot m^{-2}$	for t ≤ 100 s	N/A
	$E_B = \sum_{300}^{700} E_\lambda \cdot B(\lambda) \cdot \Delta\lambda \le 1$ $W \cdot m^{-2}$	for t > 100 s	N/A
4.3.5	Retinal thermal hazard exposure limit		P
	To protect against retinal thermal injury, the integrated spectral radiance of the light source, L_λ, weighted by the burn hazard weighting function R(λ) (from Figure 4.2 and Table 4.2), i.e., the burn hazard weighted radiance, shall not exceed the levels defined by:		P
	$L_R = \sum_{380}^{1400} L_\lambda \cdot R(\lambda) \cdot \Delta\lambda \le \frac{50\,000}{\alpha \cdot t^{0,25}}$ $W \cdot m^{-2} \cdot sr^{-1}$	(10 µs ≤ t ≤ 10 s)	P
4.3.6	Retinal thermal hazard exposure limit – weak visual stimulus		N/A
	For an infrared heat lamp or any near-infrared source where a weak visual stimulus is inadequate to activate the aversion response, the near infrared (780 nm to 1400 nm) radiance, L_{IR}, as viewed by the eye for exposure times greater than 10 s shall be limited to:		N/A
	$L_{IR} = \sum_{780}^{1400} L_\lambda \cdot R(\lambda) \cdot \Delta\lambda \le \frac{6\,000}{\alpha}$ $W \cdot m^{-2} \cdot sr^{-1}$	t > 10 s	N/A
4.3.7	Infrared radiation hazard exposure limits for the eye		P
	The avoid thermal injury of the cornea and possible delayed effects upon the lens of the eye (cataractogenesis), ocular exposure to infrared radiation, E_{IR}, over the wavelength range 780 nm to 3000 nm, for times less than 1000 s, shall not exceed:		P
	$E_{IR} = \sum_{780}^{3\,000} E_\lambda \cdot \Delta\lambda \le 18\,000 \cdot t^{-0,75}$ $W \cdot m^{-2}$	t ≤ 1000 s	P
	For times greater than 1000 s the limit becomes:		P

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict
	$E_{IR} = \sum_{780}^{3\,000} E_\lambda \cdot \Delta\lambda \le 100 \quad W \cdot m^{-2}$	t > 1000 s	P
4.3.8	Thermal hazard exposure limit for the skin		P
	Visible and infrared radiant exposure (380 nm to 3000 nm) of the skin shall be limited to:		P
	$E_H \cdot t = \sum_{380}^{3\,000} \sum_{t} E_\lambda(\lambda,t) \cdot \Delta t \cdot \Delta\lambda \le 20\,000 \cdot t^{0,25} \quad J \cdot m^{-2}$		P
5	**MEASUREMENT OF LAMPS AND LAMP SYSTEMS**		P
5.1	Measurement conditions		P
	Measurement conditions shall be reported as part of the evaluation against the exposure limits and the assignment of risk classification.		P
5.1.1	Lamp ageing (seasoning)		N/A
	Seasoning of lamps shall be done as stated in the appropriate IEC lamp standard.		N/A
5.1.2	Test environment		P
	For specific test conditions, see the appropriate IEC lamp standard or in absence of such standards, the appropriate national standards or manufacturer's recommendations.		P
5.1.3	Extraneous radiation		P
	Careful checks should be made to ensure that extraneous sources of radiation and reflections do not add significantly to the measurement results.		P
5.1.4	Lamp operation		P
	Operation of the test lamp shall be provided in accordance with:		P
	– the appropriate IEC lamp standard, or		N/A
	– the manufacturer' s recommendation		P
5.1.5	Lamp system operation		N/A
	The power source for operation of the test lamp shall be provided in accordance with:		N/A
	– the appropriate IEC standard, or		N/A
	– the manufacturer' s recommendation		N/A
5.2	Measurement procedure		P
5.2.1	Irradiance measurements		P
	Minimum aperture diameter 7mm.		P

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict
	Maximum aperture diameter 50 mm.		P
	The measurement shall be made in that position of the beam giving the maximum reading.		P
	The measurement instrument is adequate calibrated.		P
5.2.2	Radiance measurements		P
5.2.2.1	Standard method		P
	The measurements made with an optical system.		P
	The instrument shall be calibrated to read in absolute radiant power per unit receiving area and per unit solid angle to acceptance averaged over the field of view of the instrument.		P
5.2.2.2	Alternative method		N/A
	Alternatively to an imaging radiance set-up, an irradiance measurement set-up with a circular field stop placed at the source can be used to perform radiance measurements.		N/A
5.2.3	Measurement of source size		P
	The determination of α, the angle subtended by a source, requires the determination of the 50% emission points of the source.		P
5.2.4	Pulse width measurement for pulsed sources		N/A
	The determination of Δt, the nominal pulse duration of a source, requires the determination of the time during which the emission is > 50% of its peak value.		N/A
5.3	Analysis methods		P
5.3.1	Weighting curve interpolations		P
	To standardize interpolated values, use linear interpolation on the log of given values to obtain intermediate points at the wavelength intervals desired.	see table 4.1	P
5.3.2	Calculations		P
	The calculation of source hazard values shall be performed by weighting the spectral scan by the appropriate function and calculating the total weighted energy.		P
5.3.3	Measurement uncertainty		P
	The quality of all measurement results must be quantified by an analysis of the uncertainty.	see Annex C in the norm	P

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict
6	**LAMP CLASSIFICATION**		P
	For the purposes of this standard it was decided that the values shall be reported as follows:	see table 6.1	P
	– for lamps intended for general lighting service, the hazard values shall be reported as either irradiance or radiance values at a distance which produces an illuminance of 500 lux, but not at a distance less than 200 mm	Tested at worse case which corresponding to 200mm	P
	– for all other light sources, including pulsed lamp sources, the hazard values shall be reported at a distance of 200 mm		N/A
6.1	Continuous wave lamps		P
6.1.1	Exempt Group		P
	In the exempt group are lamps, which does not pose any photobiological hazard. The requirement is met by any lamp that does not pose:		P
	– an actinic ultraviolet hazard (E_S) within 8-hours exposure (30000 s), nor		P
	– a near-UV hazard (E_{UVA}) within 1000 s, (about 16 min), nor		P
	– a retinal blue-light hazard (L_B) within 10000 s (about 2,8 h), nor		P
	– a retinal thermal hazard (L_R) within 10 s, nor		P
	– an infrared radiation hazard for the eye (E_{IR}) within 1000 s		P
6.1.2	Risk Group 1 (Low-Risk)		N/A
	In this group are lamps, which exceeds the limits for the except group but that does not pose:		N/A
	– an actinic ultraviolet hazard (E_S) within 10000 s, nor		N/A
	– a near ultraviolet hazard (E_{UVA}) within 300 s, nor		N/A
	– a retinal blue-light hazard (L_B) within 100 s, nor		N/A
	– a retinal thermal hazard (L_R) within 10 s, nor		N/A
	– an infrared radiation hazard for the eye (E_{IR}) within 100 s		N/A
	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.		N/A
6.1.3	Risk Group 2 (Moderate-Risk)		N/A
	This requirement is met by any lamp that exceeds the limits for Risk Group 1, but that does not pose:		N/A

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict
	– an actinic ultraviolet hazard (E_S) within 1000 s exposure, nor		N/A
	– a near ultraviolet hazard (E_{UVA}) within 100 s, nor		N/A
	– a retinal blue-light hazard (L_B) within 0,25 s (aversion response), nor		N/A
	– a retinal thermal hazard (L_R) within 0,25 s (aversion response), nor		N/A
	– an infrared radiation hazard for the eye (E_{IR}) within 10 s		N/A
	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.		N/A
6.1.4	Risk Group 3 (High-Risk)		N/A
	Lamps which exceed the limits for Risk Group 2 are in Group 3.		N/A
6.2	Pulsed lamps		N/A
	Pulse lamp criteria shall apply to a single pulse and to any group of pulses within 0,25 s.		N/A
	A pulsed lamp shall be evaluated at the highest nominal energy loading as specified by the manufacturer.		N/A
	The risk group determination of the lamp being tested shall be made as follows:		N/A
	– a lamp that exceeds the exposure limit shall be classified as belonging to Risk Group 3 (High-Risk)		N/A
	– for single pulsed lamps, a lamp whose weighted radiant exposure or weighted radiance does is below the EL shall be classified as belonging to the Exempt Group		N/A
	– for repetitively pulsed lamps, a lamp whose weighted radiant exposure or weighted radiance dose is below the EL, shall be evaluated using the continuous wave risk criteria discussed in clause 6.1, using time averaged values of the pulsed emission		N/A

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 4.1	Spectral weighting function for assessing ultraviolet hazards for skin and eye	P

Wavelength[1] λ, nm	**UV hazard function $S_{UV}(\lambda)$**	**Wavelength λ, nm**	**UV hazard function $S_{UV}(\lambda)$**
200	0,030	313*	0,006
205	0,051	315	0,003
210	0,075	316	0,0024
215	0,095	317	0,0020
220	0,120	318	0,0016
225	0,150	319	0,0012
230	0,190	320	0,0010
235	0,240	322	0,00067
240	0,300	323	0,00054
245	0,360	325	0,00050
250	0,430	328	0,00044
254*	0,500	330	0,00041
255	0,520	333*	0,00037
260	0,650	335	0,00034
265	0,810	340	0,00028
270	1,000	345	0,00024
275	0,960	350	0,00020
280*	0,880	355	0,00016
285	0,770	360	0,00013
290	0,640	365*	0,00011
295	0,540	370	0,000093
297*	0,460	375	0,000077
300	0,300	380	0,000064
303*	0,120	385	0,000053
305	0,060	390	0,000044
308	0,026	395	0,000036
310	0,015	400	0,000030

[1] Wavelengths chosen are representative: other values should be obtained by logarithmic interpolation at intermediate wavelengths.
* Emission lines of a mercury discharge spectrum.

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 4.2	Spectral weighting functions for assessing retinal hazards from broadband optical sources	P

Wavelength nm	**Blue-light hazard function B (λ)**	**Burn hazard function R (λ)**
300	0,01	--
305	0,01	--
310	0,01	--
315	0,01	--
320	0,01	--
325	0,01	--
330	0,01	--
335	0,01	--
340	0,01	--
345	0,01	--
350	0,01	--
355	0,01	--
360	0,01	--
365	0,01	--
370	0,01	--
375	0,01	--
380	0,01	0,1
385	0,013	0,13
390	0,025	0,25
395	0,05	0,5
400	0,10	1,0
405	0,20	2,0
410	0,40	4,0
415	0,80	8,0
420	0,90	9,0
425	0,95	9,5
430	0,98	9,8
435	1,00	10,0
440	1,00	10,0
445	0,97	9,7
450	0,94	9,4
455	0,90	9,0
460	0,80	8,0
465	0,70	7,0
470	0,62	6,2
475	0,55	5,5
480	0,45	4,5
485	0,40	4,0
490	0,22	2,2
495	0,16	1,6
500-600	$10^{[(450-\lambda)/50]}$	1,0
600-700	0,001	1,0
700-1050	--	$10^{[(700-\lambda)/500]}$
1050-1150	--	0,2
1150-1200	--	$0{,}2 \cdot 10^{0{,}02(1150-\lambda)}$

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 4.2	Spectral weighting functions for assessing retinal hazards from broadband optical sources		P
1200-1400	--	0,02	

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 5.4	Summary of the ELs for the surface of the skin or cornea (irradiance based values)	P

Hazard Name	Relevant equation	Wavelength range nm	Exposure duration sec	Limiting aperture rad (deg)	EL in terms of constant irradiance $W \cdot m^{-2}$
Actinic UV skin & eye	$E_S = \sum E_\lambda \cdot S(\lambda) \cdot \Delta\lambda$	200 – 400	< 30000	1,4 (80)	30/t
Eye UV-A	$E_{UVA} = \sum E_\lambda \cdot \Delta\lambda$	315 – 400	≤1000 >1000	1,4 (80)	10000/t 10
Blue-light small source	$E_B = \sum E_\lambda \cdot B(\lambda) \cdot \Delta\lambda$	300 – 700	≤100 >100	< 0,011	100/t 1,0
Eye IR	$E_{IR} = \sum E_\lambda \cdot \Delta\lambda$	780 – 3000	≤1000 >1000	1,4 (80)	$18000/t^{0,75}$ 100
Skin thermal	$E_H = \sum E_\lambda \cdot \Delta\lambda$	380 – 3000	< 10	2π sr	$20000/t^{0,75}$

Table 5.5	Summary of the ELs for the retina (radiance based values)	P

Hazard Name	Relevant equation	Wavelength range nm	Exposure duration sec	Field of view radians	EL in terms of constant radiance $W \cdot m^{-2} \cdot sr^{-1}$)
Blue light	$L_B = \sum L_\lambda \cdot B(\lambda) \cdot \Delta\lambda$	300 – 700	0,25 – 10 10-100 100-10000 ≥ 10000	$0,011 \cdot \sqrt{(t/10)}$ 0,011 $0,0011 \cdot \sqrt{t}$ 0,1	$10^6/t$ $10^6/t$ $10^6/t$ 100
Retinal thermal	$L_R = \sum L_\lambda \cdot R(\lambda) \cdot \Delta\lambda$	380 – 1400	< 0,25 0,25 – 10	0,0017 $0,011 \cdot \sqrt{(t/10)}$	$50000/(\alpha \cdot t^{0,25})$ $50000/(\alpha \cdot t^{0,25})$
Retinal thermal (weak visual stimulus)	$L_{IR} = \sum L_\lambda \cdot R(\lambda) \cdot \Delta\lambda$	780 – 1400	> 10	0,011	6000/α

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

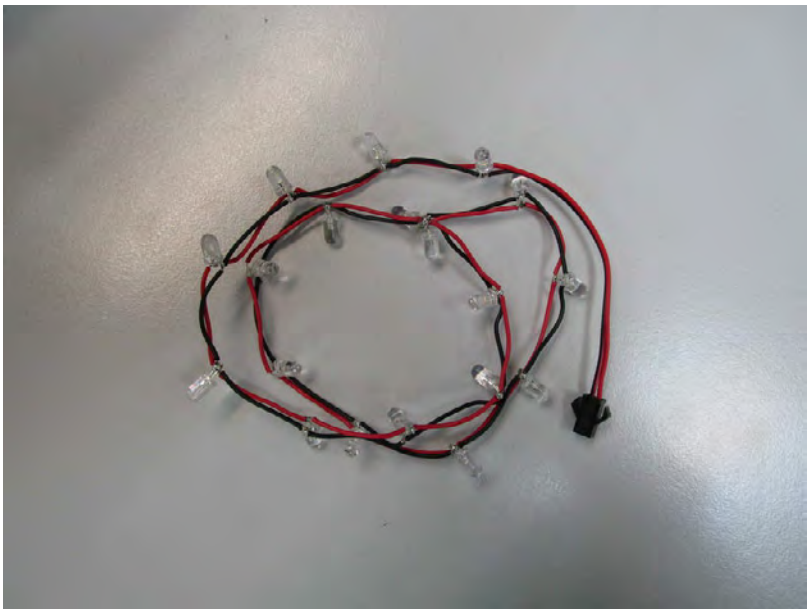
Table 6.1	Emission limits for risk groups of continuous wave lamps: (Light box)									P
Risk	Action spectrum	Symbol	Units	Emission Measurement						
				Exempt		Low risk		Mod risk		
				Limit	Result	Limit	Result	Limit	Result	
Actinic UV	$S_{UV}(\lambda)$	E_s	$W \cdot m^{-2}$	0,001	0.0050 m $W \cdot m^{-2}$	0,003	--	0,03	--	
Near UV		E_{UVA}	$W \cdot m^{-2}$	10	0.0000197	33	--	100	--	
Blue light	B(λ)	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	--	10000	--	4000000	--	
Blue light, small source	B(λ)	E_B	$W \cdot m^{-2}$	1,0*	0.0099	1,0	--	400	--	
Retinal thermal	R(λ)	L_R	$W \cdot m^{-2} \cdot sr^{-1}$	28000/α	--	28000/α	--	71000/α	--	
Retinal thermal, weak visual stimulus**	R(λ)	L_{IR}	$W \cdot m^{-2} \cdot sr^{-1}$	6000/α	0.2	6000/α	--	6000/α	--	
IR radiation, eye		E_{IR}	$W \cdot m^{-2}$	100	0.0918	570	--	3200	--	

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

Appendix 1: List of test equipment

Registration Number	Testing/measuring equipment/material used	Manufacturer	Model number
HK 391	Spectroradiometer	Bentham Instrument	IDR300
HK 512	Laser Range Finder	Bosch	DLE 40 Professional
HK 525	Datalogging Heavy Duty Light Meter	Extech	HD450

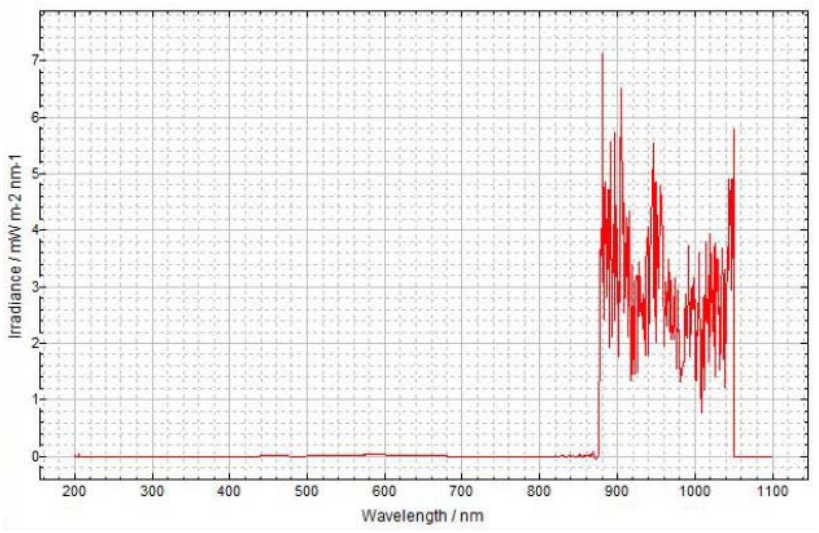
Appendix 2: Photo of document



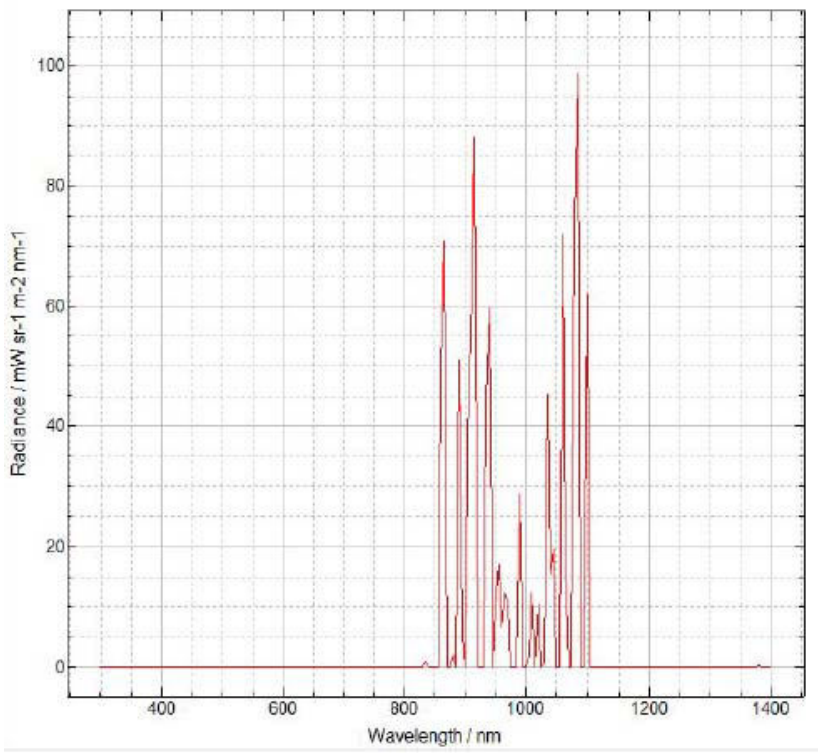
Outlook

LED

Appendix 3: Test Result



Light box measured spectral irradiance distribution



Light box measured spectral radiance distribution

Appendix 4: LED specification

Manufacturer	Model / Type no.	LED Color Temperature / LED Color	Technical Data	Reference Datasheet (if any)
Ningbo Decheng Electronic Co., Ltd.	LED ϕ5	Warm white	3,5 Vdc 80 mA	Not provided

Appendix 5: The difference between IEC 62471: 2006 and EN 62471: 2008

ATTACHMENT TO TEST REPORT IEC 62471 **EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES** Photobiological safety of lamps and lamps systems	
Differences according to .....:	EN 62471: 2008
Attachment Form No. .....:	EU_GD_IEC62471A
Attachment Originator.....:	IMQ S.p.A.
Master Attachment .....:	2009-07

	CENELEC COMMON MODIFICATIONS (EN)		—
4	**EXPOSURE LIMITS**		—
	Contents of the whole Clause 4 of IEC 62471:2006 moved into a new informative Annex ZB		—
	Clause 4 replaced by the following:		—
	Limits of the Artificial Optical Radiation Directive (2006/25/EC) have been applied instead of those fixed in IEC 62471:2006	See appended Table 6.2	P
4.1	General		—
	First paragraph deleted		—

EN 62471			
Clause	Requirement + Test	Result – Remark	Verdict
Table 6.2	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC): (Rear light for bicycle)		P

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	$W \cdot m^{-2}$	0,001	0.0050 m $W \cdot m^{-2}$				
Near UV		E_{UVA}	$W \cdot m^{-2}$	10	0.0000197				
Blue light	$B(\lambda)$	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	--	10000	1,01E+02	4000000	--
Blue light, small source	$B(\lambda)$	E_B	$W \cdot m^{-2}$	0,01*	0.0099	1,0	--	400	--
Retinal thermal	$R(\lambda)$	L_R	$W \cdot m^{-2} \cdot sr^{-1}$	28000/α	--	28000/α	--	71000/α	--
Retinal thermal, weak visual stimulus**	$R(\lambda)$	L_{IR}	$W \cdot m^{-2} \cdot sr^{-1}$	545000 0,0017≤ α ≤ 0,011	0.2				
				6000/α 0,011≤ α ≤ 0,1	--				
IR radiation, eye		E_{IR}	$W \cdot m^{-2}$	100	0.918	570	--	3200	--

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

NOTE The action functions: see Table 4.1 and Table 4.2
The applicable aperture diameters: see 4.2.1
The limitations for the angular subtenses: see 4.2.2
The related measurement condition 5.2.3 and the range of acceptance angles: see Table 5.5.

End of report

LABORATOIRES POURQUERY (HK) LTD.
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TEL : (852) 2548 9072 FAX : (852) 2540 4764

Hong Kong, 08/11/2017

CERTIFICATE OF CONTROL N° C2017-52739
ATTESTATION DE CONTROLE N°C2017-52739

For the account of : *Pour le compte de :*	**SUNRISE OUTDOOR LTD** Rm818, Tianyihaojing Block A, No.19 Hualou Lane,Ningbo,315000,China
Name of the product *Nom du produit :*	**SMD OF PARASOL ROMA SOLAIRE LED MAT ET BALEINE EN ALU POLYESTER 200G/M2**
Customer's product reference : *Référence produit du*	**U124**
Name of the supplier : *Nom du fournisseur :*	*/*
Suppliers's product reference : *Référence produit du fournisseur :*	**U124**
Order number : *Numéro de commande :*	*/*

Quantity of sample(s) *Echantillon(s) reçu(s) :*	**1**	**Received on :** *Reçu le :*	**17-10-2017**
LPHK's sample reference : *Référence échantillon LPHK :*	**S2017-54856-2**	**Test report :** *Rapport d'essais :*	**3042488.51**

SCOPE */ REFERENTIEL*:

EN 62471 (2008)

Summary of test results :
Compilation des résultats des essais :
See appendix
Voir annexe

Approved by / *Approuvé par :*

Eric LAOT
Technical Manager

These results only apply to the sample, product or material submitted to the laboratory and as defined in the present document.
This Certificate of Control summarizes the results of the performed test(s). It should not be used as a substitute for its associated test report(s).
Ces résultats ne s'appliquent qu'à l'échantillon, au produit ou au matériel soumis au laboratoire, et tel qu'il est défini dans le présent document.
Cette Attestation de Contrôle est un résumé des résultats des essais qui ont été réalisés. Elle ne peut se substituer aux rapports d'essais qui lui sont associés.

Test Report issued under the responsibility of:

DEKRA

TEST REPORT IEC 62471 Photobiological safety of lamps and lamp systems	
Report Reference No..... :	3042488.51
Date of issue ..... :	2017-11-03
Total number of pages ..... :	21 Pages
Testing Laboratory..... :	DEKRA Certification Hong Kong Limited
Address..... :	Unit 1-14, 6/F., Fuk Shing Commercial Building, 28 On Lok Mun Street, On Lok Tsuen, Fanling, N.T., Hong Kong
Applicant's name ..... :	LABORATORIES POURQUERY (H.K.) LTD.
Address..... :	Unit C, 10/F, Hang Cheong Factory, Building 1 Wing Ming Street, Lai Chi Kwok, Kowloon, Hong Kong
Test specification..... :	
Standard ..... :	IEC 62471: 2006 (1st edition)
Test procedure..... :	Type test
Non-standard test method……..:	N/A
Test Report Form No..... :	IEC62471A
TRF Originator ..... :	VDE Testing and Certification Institute
Master TRF ..... :	Dated 2009-05
Test item description ..... :	LED
Trade Mark..... :	N/A
Manufacturer..... :	(Same as applicant)
Factory ..... :	(Same as applicant)
Address..... :	(Same as applicant)
Model/Type reference ..... :	S2017-54856
Ratings..... :	3,5 Vdc, 80 mA

Testing procedure and testing location:	
☒ **Testing Laboratory**:	DEKRA Certification Hong Kong Limited
Testing location/ address .....:	Unit 1-14, 6/F., Fuk Shing Commercial Building, 28 On Lok Mun Street, On Lok Tsuen, Fanling, N.T., Hong Kong
Tested by (name + signature) .....:	Kit Ngan
Approved by (+ signature).....:	Cliff Fung

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
Have been tested according to the IEC 62471(first edition, 2006-07) **at 500 lux distance** and been classified as **Exempt group.** Have been tested according to the EN 62471:2008 **at 500 lux distance** and been classified as **Exempt group.** Have been tested according to the IEC/TR 62778:2014 **at 200 mm** and been classified as **Exempt group Unlimited for blue light hazard**.	DEKRA Certification Hong Kong Limited Unit 1-14, 6/F., Fuk Shing Commercial Building, 28 On Lok Mun Street, On Lok Tsuen, Fanling, N.T., Hong Kong

Summary of compliance with National Differences:

CENELEC common modification (EU) according to EN 62471: 2008.

Copy of marking plate:

N/A

Test item particulars ..... :	Compact lighting mirror
Tested lamp ..... :	☒ continuous wave lamps ☐ pulsed lamps
Tested lamp system ..... :	N/A
Lamp classification group ..... :	☒ exempt ☐ risk 1 ☐ risk 2 ☐ risk 3
Lamp cap ..... :	N/A
Bulb ..... :	Non-replaceable LED
Rated of the lamp ..... :	I_F: 80 mA , V_F = 3,5 V
Furthermore marking on the lamp ..... :	N/A
Seasoning of lamps according IEC standard ..... :	N/A
Used measurement instrument ..... :	Spectroradiometer
Temperature by measurement ..... :	25 °C
Information for safety use ..... :	--

Possible test case verdicts:

– test case does not apply to the test object ..... : N/A (Not applicable)

– test object does meet the requirement ..... : P (Pass)

– test object does not meet the requirement ..... : F (Fail)

Testing:

Date of receipt of test item ..... : 2017-10-26

Date (s) of performance of tests ..... : 2017-10-26 to 2017-11-03

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.
Throughout this report a comma (point) is used as the decimal separator.
List of test equipment must be kept on file and available for review.
Although not listed in this report, IEC/TR 62471-2: 2009 is also taken into account.

Full tests were performed.
The products considered as worst case which should be evaluated at 200 mm.

The model in this report were classified as Risk group 1, therefore these do not pose any photobiological hazard according to IEC 62471. No labelling is required.

The models in this report were classified as Exempt group Unlimited for blue light hazard according to blue light hazard required by IEC/TR 62778:2014. No threshold distance is needed

List of attachments:

Appendix 1: Lists of equipment (1 Page)
Appendix 2: Photo of document (2 Pages)
Appendix 3: Test Result (1 Pages)
Appendix 4: LED specification (1 Page)
Appendix 5: EU Group common modification according to EN 62471: 2008 (2 Pages)

General product information:

The product covered in this report is Light box.
Single LED is performed in testing.

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

4	**EXPOSURE LIMITS**		P
4.1	General		P
	The exposure limits in this standard is not less than 0,01 ms and not more than any 8-hour period and should be used as guides in the control of exposure		P
	Detailed spectral data of a light source are generally required only if the luminance of the source exceeds 10^4 cd·m^{-2}	see clause 4.3	P
4.3	Hazard exposure limits		P
4.3.1	Actinic UV hazard exposure limit for the skin and eye		P
	The exposure limit for effective radiant exposure is 30 J·m^{-2} within any 8-hour period		P
	To protect against injury of the eye or skin from ultraviolet radiation exposure produced by a broadband source, the effective integrated spectral irradiance , E_S, of the light source shall not exceed the levels defined by:		P
	$E_s \cdot t = \sum_{200}^{400} \sum_{t} E_\lambda(\lambda,t) \cdot S_{UV}(\lambda) \cdot \Delta t \cdot \Delta\lambda \le 30$ J·m^{-2}		P
	The permissible time for exposure to ultraviolet radiation incident upon the unprotected eye or skin shall be computed by:		P
	$t_{max} = \frac{30}{E_s}$ s		P
4.3.2	Near-UV hazard exposure limit for eye		P
	For the spectral region 315 nm to 400 nm (UV-A) the total radiant exposure to the eye shall not exceed 10000 J·m^{-2} for exposure times less than 1000 s. For exposure times greater than 1000 s (approximately 16 minutes) the UV-A irradiance for the unprotected eye, E_{UVA}, shall not exceed 10 W·m^{-2}.		P
	The permissible time for exposure to ultraviolet radiation incident upon the unprotected eye for time less than 1000 s, shall be computed by:		P
	$t_{max} \le \frac{10\,000}{E_{UVA}}$ s		P
4.3.3	Retinal blue light hazard exposure limit		P
	To protect against retinal photochemical injury from chronic blue-light exposure, the integrated spectral radiance of the light source weighted against the blue-light hazard function, B(λ), i.e., the blue-light weighted radiance , L_B, shall not exceed the levels defined by:		P

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict
	$L_B \cdot t = \sum_{300}^{700} \sum_{t} L_\lambda(\lambda,t) \cdot B(\lambda) \cdot \Delta t \cdot \Delta\lambda \le 10^6$ $J \cdot m^{-2} \cdot sr^{-1}$	for t ≤ 10^4 s $t_{max} = \frac{10^6}{L_B}$	P
	$L_B = \sum_{300}^{700} L_\lambda \cdot B(\lambda) \cdot \Delta\lambda \le 100$ $W \cdot m^{-2} \cdot sr^{-1}$	for t > 10^4 s	P
4.3.4	Retinal blue light hazard exposure limit - small source		N/A
	Thus the spectral irradiance at the eye E_λ, weighted against the blue-light hazard function B(λ) shall not exceed the levels defined by:	see table 4.2	N/A
	$E_B \cdot t = \sum_{300}^{700} \sum_{t} E_\lambda(\lambda,t) \cdot B(\lambda) \cdot \Delta t \cdot \Delta\lambda \le 100$ $J \cdot m^{-2}$	for t ≤ 100 s	N/A
	$E_B = \sum_{300}^{700} E_\lambda \cdot B(\lambda) \cdot \Delta\lambda \le 1$ $W \cdot m^{-2}$	for t > 100 s	N/A
4.3.5	Retinal thermal hazard exposure limit		P
	To protect against retinal thermal injury, the integrated spectral radiance of the light source, L_λ, weighted by the burn hazard weighting function R(λ) (from Figure 4.2 and Table 4.2), i.e., the burn hazard weighted radiance, shall not exceed the levels defined by:		P
	$L_R = \sum_{380}^{1400} L_\lambda \cdot R(\lambda) \cdot \Delta\lambda \le \frac{50\,000}{\alpha \cdot t^{0,25}}$ $W \cdot m^{-2} \cdot sr^{-1}$	(10 µs ≤ t ≤ 10 s)	P
4.3.6	Retinal thermal hazard exposure limit – weak visual stimulus		N/A
	For an infrared heat lamp or any near-infrared source where a weak visual stimulus is inadequate to activate the aversion response, the near infrared (780 nm to 1400 nm) radiance, L_{IR}, as viewed by the eye for exposure times greater than 10 s shall be limited to:		N/A
	$L_{IR} = \sum_{780}^{1400} L_\lambda \cdot R(\lambda) \cdot \Delta\lambda \le \frac{6\,000}{\alpha}$ $W \cdot m^{-2} \cdot sr^{-1}$	t > 10 s	N/A
4.3.7	Infrared radiation hazard exposure limits for the eye		P
	The avoid thermal injury of the cornea and possible delayed effects upon the lens of the eye (cataractogenesis), ocular exposure to infrared radiation, E_{IR}, over the wavelength range 780 nm to 3000 nm, for times less than 1000 s, shall not exceed:		P
	$E_{IR} = \sum_{780}^{3\,000} E_\lambda \cdot \Delta\lambda \le 18\,000 \cdot t^{-0,75}$ $W \cdot m^{-2}$	t ≤ 1000 s	P
	For times greater than 1000 s the limit becomes:		P

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict
	$E_{IR} = \sum_{780}^{3\,000} E_\lambda \cdot \Delta\lambda \le 100 \quad W \cdot m^{-2}$	t > 1000 s	P
4.3.8	Thermal hazard exposure limit for the skin		P
	Visible and infrared radiant exposure (380 nm to 3000 nm) of the skin shall be limited to:		P
	$E_H \cdot t = \sum_{380}^{3\,000} \sum_{t} E_\lambda(\lambda,t) \cdot \Delta t \cdot \Delta\lambda \le 20\,000 \cdot t^{0,25} \quad J \cdot m^{-2}$		P
5	**MEASUREMENT OF LAMPS AND LAMP SYSTEMS**		P
5.1	Measurement conditions		P
	Measurement conditions shall be reported as part of the evaluation against the exposure limits and the assignment of risk classification.		P
5.1.1	Lamp ageing (seasoning)		N/A
	Seasoning of lamps shall be done as stated in the appropriate IEC lamp standard.		N/A
5.1.2	Test environment		P
	For specific test conditions, see the appropriate IEC lamp standard or in absence of such standards, the appropriate national standards or manufacturer's recommendations.		P
5.1.3	Extraneous radiation		P
	Careful checks should be made to ensure that extraneous sources of radiation and reflections do not add significantly to the measurement results.		P
5.1.4	Lamp operation		P
	Operation of the test lamp shall be provided in accordance with:		P
	– the appropriate IEC lamp standard, or		N/A
	– the manufacturer' s recommendation		P
5.1.5	Lamp system operation		N/A
	The power source for operation of the test lamp shall be provided in accordance with:		N/A
	– the appropriate IEC standard, or		N/A
	– the manufacturer' s recommendation		N/A
5.2	Measurement procedure		P
5.2.1	Irradiance measurements		P
	Minimum aperture diameter 7mm.		P

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict
	Maximum aperture diameter 50 mm.		P
	The measurement shall be made in that position of the beam giving the maximum reading.		P
	The measurement instrument is adequate calibrated.		P
5.2.2	Radiance measurements		P
5.2.2.1	Standard method		P
	The measurements made with an optical system.		P
	The instrument shall be calibrated to read in absolute radiant power per unit receiving area and per unit solid angle to acceptance averaged over the field of view of the instrument.		P
5.2.2.2	Alternative method		N/A
	Alternatively to an imaging radiance set-up, an irradiance measurement set-up with a circular field stop placed at the source can be used to perform radiance measurements.		N/A
5.2.3	Measurement of source size		P
	The determination of α, the angle subtended by a source, requires the determination of the 50% emission points of the source.		P
5.2.4	Pulse width measurement for pulsed sources		N/A
	The determination of Δt, the nominal pulse duration of a source, requires the determination of the time during which the emission is > 50% of its peak value.		N/A
5.3	Analysis methods		P
5.3.1	Weighting curve interpolations		P
	To standardize interpolated values, use linear interpolation on the log of given values to obtain intermediate points at the wavelength intervals desired.	see table 4.1	P
5.3.2	Calculations		P
	The calculation of source hazard values shall be performed by weighting the spectral scan by the appropriate function and calculating the total weighted energy.		P
5.3.3	Measurement uncertainty		P
	The quality of all measurement results must be quantified by an analysis of the uncertainty.	see Annex C in the norm	P

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict
6	**LAMP CLASSIFICATION**		P
	For the purposes of this standard it was decided that the values shall be reported as follows:	see table 6.1	P
	– for lamps intended for general lighting service, the hazard values shall be reported as either irradiance or radiance values at a distance which produces an illuminance of 500 lux, but not at a distance less than 200 mm	Tested at worse case which corresponding to 200mm	P
	– for all other light sources, including pulsed lamp sources, the hazard values shall be reported at a distance of 200 mm		N/A
6.1	Continuous wave lamps		P
6.1.1	Exempt Group		P
	In the exempt group are lamps, which does not pose any photobiological hazard. The requirement is met by any lamp that does not pose:		P
	– an actinic ultraviolet hazard (E_S) within 8-hours exposure (30000 s), nor		P
	– a near-UV hazard (E_{UVA}) within 1000 s, (about 16 min), nor		P
	– a retinal blue-light hazard (L_B) within 10000 s (about 2,8 h), nor		P
	– a retinal thermal hazard (L_R) within 10 s, nor		P
	– an infrared radiation hazard for the eye (E_{IR}) within 1000 s		P
6.1.2	Risk Group 1 (Low-Risk)		N/A
	In this group are lamps, which exceeds the limits for the except group but that does not pose:		N/A
	– an actinic ultraviolet hazard (E_S) within 10000 s, nor		N/A
	– a near ultraviolet hazard (E_{UVA}) within 300 s, nor		N/A
	– a retinal blue-light hazard (L_B) within 100 s, nor		N/A
	– a retinal thermal hazard (L_R) within 10 s, nor		N/A
	– an infrared radiation hazard for the eye (E_{IR}) within 100 s		N/A
	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.		N/A
6.1.3	Risk Group 2 (Moderate-Risk)		N/A
	This requirement is met by any lamp that exceeds the limits for Risk Group 1, but that does not pose:		N/A

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict
	– an actinic ultraviolet hazard (E_S) within 1000 s exposure, nor		N/A
	– a near ultraviolet hazard (E_{UVA}) within 100 s, nor		N/A
	– a retinal blue-light hazard (L_B) within 0,25 s (aversion response), nor		N/A
	– a retinal thermal hazard (L_R) within 0,25 s (aversion response), nor		N/A
	– an infrared radiation hazard for the eye (E_{IR}) within 10 s		N/A
	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.		N/A
6.1.4	Risk Group 3 (High-Risk)		N/A
	Lamps which exceed the limits for Risk Group 2 are in Group 3.		N/A
6.2	Pulsed lamps		N/A
	Pulse lamp criteria shall apply to a single pulse and to any group of pulses within 0,25 s.		N/A
	A pulsed lamp shall be evaluated at the highest nominal energy loading as specified by the manufacturer.		N/A
	The risk group determination of the lamp being tested shall be made as follows:		N/A
	– a lamp that exceeds the exposure limit shall be classified as belonging to Risk Group 3 (High-Risk)		N/A
	– for single pulsed lamps, a lamp whose weighted radiant exposure or weighted radiance does is below the EL shall be classified as belonging to the Exempt Group		N/A
	– for repetitively pulsed lamps, a lamp whose weighted radiant exposure or weighted radiance dose is below the EL, shall be evaluated using the continuous wave risk criteria discussed in clause 6.1, using time averaged values of the pulsed emission		N/A

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 4.1	Spectral weighting function for assessing ultraviolet hazards for skin and eye	P

Wavelength[1] λ, nm	**UV hazard function $S_{UV}(\lambda)$**	**Wavelength λ, nm**	**UV hazard function $S_{UV}(\lambda)$**
200	0,030	313*	0,006
205	0,051	315	0,003
210	0,075	316	0,0024
215	0,095	317	0,0020
220	0,120	318	0,0016
225	0,150	319	0,0012
230	0,190	320	0,0010
235	0,240	322	0,00067
240	0,300	323	0,00054
245	0,360	325	0,00050
250	0,430	328	0,00044
254*	0,500	330	0,00041
255	0,520	333*	0,00037
260	0,650	335	0,00034
265	0,810	340	0,00028
270	1,000	345	0,00024
275	0,960	350	0,00020
280*	0,880	355	0,00016
285	0,770	360	0,00013
290	0,640	365*	0,00011
295	0,540	370	0,000093
297*	0,460	375	0,000077
300	0,300	380	0,000064
303*	0,120	385	0,000053
305	0,060	390	0,000044
308	0,026	395	0,000036
310	0,015	400	0,000030

[1] Wavelengths chosen are representative: other values should be obtained by logarithmic interpolation at intermediate wavelengths.
* Emission lines of a mercury discharge spectrum.

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 4.2	Spectral weighting functions for assessing retinal hazards from broadband optical sources	P

Wavelength nm	**Blue-light hazard function B (λ)**	**Burn hazard function R (λ)**
300	0,01	--
305	0,01	--
310	0,01	--
315	0,01	--
320	0,01	--
325	0,01	--
330	0,01	--
335	0,01	--
340	0,01	--
345	0,01	--
350	0,01	--
355	0,01	--
360	0,01	--
365	0,01	--
370	0,01	--
375	0,01	--
380	0,01	0,1
385	0,013	0,13
390	0,025	0,25
395	0,05	0,5
400	0,10	1,0
405	0,20	2,0
410	0,40	4,0
415	0,80	8,0
420	0,90	9,0
425	0,95	9,5
430	0,98	9,8
435	1,00	10,0
440	1,00	10,0
445	0,97	9,7
450	0,94	9,4
455	0,90	9,0
460	0,80	8,0
465	0,70	7,0
470	0,62	6,2
475	0,55	5,5
480	0,45	4,5
485	0,40	4,0
490	0,22	2,2
495	0,16	1,6
500-600	$10^{[(450-\lambda)/50]}$	1,0
600-700	0,001	1,0
700-1050	--	$10^{[(700-\lambda)/500]}$
1050-1150	--	0,2
1150-1200	--	$0{,}2 \cdot 10^{0{,}02(1150-\lambda)}$

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict
Table 4.2	Spectral weighting functions for assessing retinal hazards from broadband optical sources		P
1200-1400	--	0,02	

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

Table 5.4	Summary of the ELs for the surface of the skin or cornea (irradiance based values)	P

Hazard Name	Relevant equation	Wavelength range nm	Exposure duration sec	Limiting aperture rad (deg)	EL in terms of constant irradiance $W \cdot m^{-2}$
Actinic UV skin & eye	$E_S = \sum E_\lambda \cdot S(\lambda) \cdot \Delta\lambda$	200 – 400	< 30000	1,4 (80)	30/t
Eye UV-A	$E_{UVA} = \sum E_\lambda \cdot \Delta\lambda$	315 – 400	≤1000 >1000	1,4 (80)	10000/t 10
Blue-light small source	$E_B = \sum E_\lambda \cdot B(\lambda) \cdot \Delta\lambda$	300 – 700	≤100 >100	< 0,011	100/t 1,0
Eye IR	$E_{IR} = \sum E_\lambda \cdot \Delta\lambda$	780 – 3000	≤1000 >1000	1,4 (80)	$18000/t^{0,75}$ 100
Skin thermal	$E_H = \sum E_\lambda \cdot \Delta\lambda$	380 – 3000	< 10	2π sr	$20000/t^{0,75}$

Table 5.5	Summary of the ELs for the retina (radiance based values)	P

Hazard Name	Relevant equation	Wavelength range nm	Exposure duration sec	Field of view radians	EL in terms of constant radiance $W \cdot m^{-2} \cdot sr^{-1}$)
Blue light	$L_B = \sum L_\lambda \cdot B(\lambda) \cdot \Delta\lambda$	300 – 700	0,25 – 10 10-100 100-10000 ≥ 10000	$0,011 \cdot \sqrt{(t/10)}$ 0,011 $0,0011 \cdot \sqrt{t}$ 0,1	$10^6/t$ $10^6/t$ $10^6/t$ 100
Retinal thermal	$L_R = \sum L_\lambda \cdot R(\lambda) \cdot \Delta\lambda$	380 – 1400	< 0,25 0,25 – 10	0,0017 $0,011 \cdot \sqrt{(t/10)}$	$50000/(\alpha \cdot t^{0,25})$ $50000/(\alpha \cdot t^{0,25})$
Retinal thermal (weak visual stimulus)	$L_{IR} = \sum L_\lambda \cdot R(\lambda) \cdot \Delta\lambda$	780 – 1400	> 10	0,011	6000/α

IEC 62471			
Clause	Requirement + Test	Result – Remark	Verdict

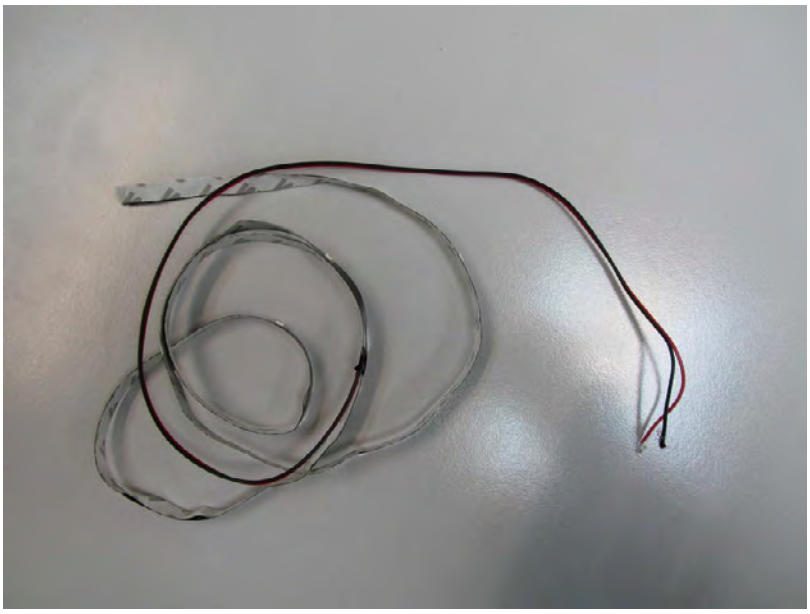
Table 6.1	Emission limits for risk groups of continuous wave lamps: (Light box)									P
Risk	Action spectrum	Symbol	Units	Emission Measurement						
				Exempt		Low risk		Mod risk		
				Limit	Result	Limit	Result	Limit	Result	
Actinic UV	$S_{UV}(\lambda)$	E_s	$W \cdot m^{-2}$	0,001	0.0000286	0,003	--	0,03	--	
Near UV		E_{UVA}	$W \cdot m^{-2}$	10	0.0000592	33	--	100	--	
Blue light	B(λ)	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	--	10000	--	4000000	--	
Blue light, small source	B(λ)	E_B	$W \cdot m^{-2}$	1,0*	0.0099	1,0	--	400	--	
Retinal thermal	R(λ)	L_R	$W \cdot m^{-2} \cdot sr^{-1}$	28000/α	--	28000/α	--	71000/α	--	
Retinal thermal, weak visual stimulus**	R(λ)	L_{IR}	$W \cdot m^{-2} \cdot sr^{-1}$	6000/α	0.2	6000/α	--	6000/α	--	
IR radiation, eye		E_{IR}	$W \cdot m^{-2}$	100	0.0981	570	--	3200	--	

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

Appendix 1: List of test equipment

Registration Number	Testing/measuring equipment/material used	Manufacturer	Model number
HK 391	Spectroradiometer	Bentham Instrument	IDR300
HK 512	Laser Range Finder	Bosch	DLE 40 Professional
HK 525	Datalogging Heavy Duty Light Meter	Extech	HD450

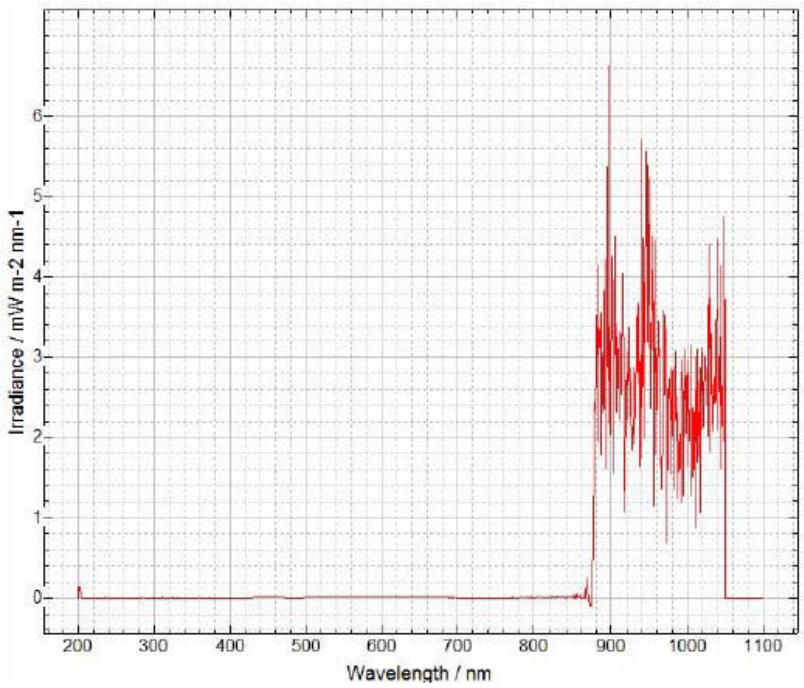
Appendix 2: Photo of document



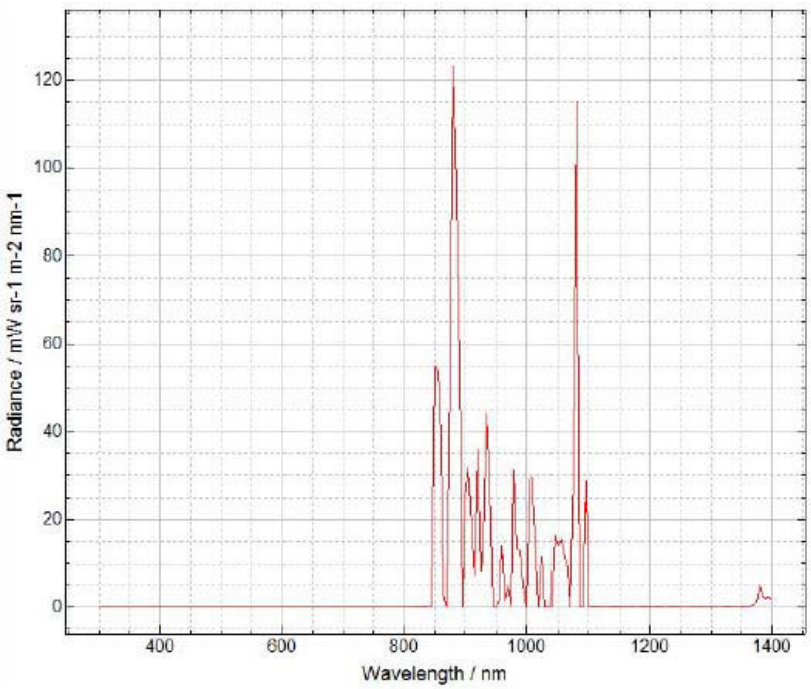
Outlook

LED

Appendix 3: Test Result



Light box measured spectral irradiance distribution



Light box measured spectral radiance distribution

Appendix 4: LED specification

Manufacturer	Model / Type no.	LED Color Temperature / LED Color	Technical Data	Reference Datasheet (if any)
Yiwu Yingkai photoelectric technology Co., Ltd.	2835	Warm white	3,5 V 80 mA	Not provided

Appendix 5: The difference between IEC 62471: 2006 and EN 62471: 2008

ATTACHMENT TO TEST REPORT IEC 62471 **EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES** Photobiological safety of lamps and lamps systems	
Differences according to .....:	EN 62471: 2008
Attachment Form No. .....:	EU_GD_IEC62471A
Attachment Originator.....:	IMQ S.p.A.
Master Attachment .....:	2009-07

	CENELEC COMMON MODIFICATIONS (EN)		—
4	**EXPOSURE LIMITS**		—
	Contents of the whole Clause 4 of IEC 62471:2006 moved into a new informative Annex ZB		—
	Clause 4 replaced by the following:		—
	Limits of the Artificial Optical Radiation Directive (2006/25/EC) have been applied instead of those fixed in IEC 62471:2006	See appended Table 6.2	P
4.1	General		—
	First paragraph deleted		—

EN 62471			
Clause	Requirement + Test	Result – Remark	Verdict
Table 6.2	Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC): (Rear light for bicycle)		P

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	$W \cdot m^{-2}$	0,001	0.0000286				
Near UV		E_{UVA}	$W \cdot m^{-2}$	10	0.0000592				
Blue light	B(λ)	L_B	$W \cdot m^{-2} \cdot sr^{-1}$	100	--	10000	1,01E+02	4000000	--
Blue light, small source	B(λ)	E_B	$W \cdot m^{-2}$	0,01*	0.0099	1,0	--	400	--
Retinal thermal	R(λ)	L_R	$W \cdot m^{-2} \cdot sr^{-1}$	28000/α	--	28000/α	--	71000/α	--
Retinal thermal, weak visual stimulus**	R(λ)	L_{IR}	$W \cdot m^{-2} \cdot sr^{-1}$	545000 0,0017≤ α ≤ 0,011	0.2				
				6000/α 0,011≤ α ≤ 0,1	--				
IR radiation, eye		E_{IR}	$W \cdot m^{-2}$	100	0.981	570	--	3200	--

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

NOTE The action functions: see Table 4.1 and Table 4.2
The applicable aperture diameters: see 4.2.1
The limitations for the angular subtenses: see 4.2.2
The related measurement condition 5.2.3 and the range of acceptance angles: see Table 5.5.

End of report

Test Report

Applicant : SUNRISE OUTDOOR LTD

Address : Rm818, Tianyihaojing Block A, No.19 Hualou Lane,Ningbo,315000,China

Sample Name : Solar LED Hanging umbrella

Quantity : 1pc

Model : U124

Lot No. : /

Supplier : /

Received Date : Oct. 13, 2017

Testing Period : Oct. 13, 2017~Nov. 06, 2017

Test Summary

No.	Test Item	Test Conclusion
1	Directive 2011/65/EU (RoHS)	Pass

Pass：Meet the requirements; Fail：Doesn't meet the requirements; N/A: Without conclusions or provide test results only.

Signed for and on behalf of
EMTEK (SUZHOU) CO., LTD

Prepared by: Danna
Mindandan, Danna
Assistant Engineer

Reviewed by: Damon
Du Shi, Damon
Technical supervisor

Approved by: Mickey
Yuan Qi, Mickey
Authorized signatory
Nov. 06, 2017

Test Report

Sample Description

Sample No.	Sample Number	Sample Name
01	EG17101303001	Solar LED Hanging umbrella

1.1 Test Method: IEC 62321-3-1:2013, IEC 62321-5:2013, IEC 62321-4:2013, IEC 62321-7-2:2017, IEC 62321-7-1:2015, IEC 62321-6:2015

1.2 Test Instrument

Instrument Name	Manufacturer	Instrument Model
XRF	SHIMADZU	EDX-LE
ICP-OES	Agilent	720
UV-Vis	SHIMADZU	UV-2600
GC-MS	Agilent	7890B-5977A

1.3 Test Result

Sample No.	Sample Description	EDXRF Result(1)					Wet Chemical Test Results(2) (mg/kg)	Remark
		Pb	Cd	Hg	Br	Cr		
1	Packing bag	BL	BL	BL	BL	BL	Cr^{6+}: Negative	
2	Umbrella cloth	BL	BL	BL	BL	BL		
3.1	X type base-coating	BL	BL	BL	BL	BL		
3.2	X type base-base material	BL	BL	BL	N.A.	BL		
4	Body frame	BL	BL	BL	N.A.	BL		
5	Film	BL	BL	BL	BL	BL		
6	Support	BL	BL	BL	BL	BL		
7	Y type support connection port	BL	BL	BL	BL	BL		
8	Battery film	BL	BL	BL	BL	BL		
9	Battery	BL	BL	BL	BL	BL		
10	Battery frame	BL	BL	BL	X	BL	PBBs: N.D. PBDEs: 146	
11	Spring	BL	BL	BL	N.A.	BL		

Test Report

Sample No.	Sample Description	EDXRF Result(1)					Wet Chemical Test Results(2) (mg/kg)	Remark
		Pb	Cd	Hg	Br	Cr		
12	Gum	BL	BL	BL	BL	BL		
13	Gasket	BL	BL	BL	N.A.	BL		
14	Black terminal male head	BL	BL	BL	BL	BL		
15	Black terminal female head	BL	BL	BL	X	BL	PBBs&PBDEs: N.D.	
16	White terminal	BL	BL	BL	BL	BL		
17	Kevlar line	BL	BL	BL	BL	BL		
18	Winding line	BL	BL	BL	BL	BL		
19	Electrical adhesive tape	BL	BL	BL	BL	BL		
20	Emulsion	BL	BL	BL	BL	BL		
21	Trademark	BL	BL	BL	BL	BL		
22	Wire jacket	BL	BL	BL	BL	BL		
23	Wire core	BL	BL	BL	N.A.	BL		
24	Capacitor	BL	BL	BL	BL	BL		
25	PCB board	BL	BL	BL	X	BL	PBBs&PBDEs: N.D.	
26	Plug wire	BL	BL	BL	N.A.	BL		
27	Tin solder	BL	BL	BL	N.A.	BL		
28	Solar panel	BL	BL	BL	BL	BL		
29	Metal frame	BL	BL	BL	N.A.	BL		
30	Metal ring	BL	BL	BL	N.A.	BL		
31	Red button	BL	BL	BL	BL	BL		
32	Terminal	BL	BL	BL	N.A.	BL		
33	LED light	BL	BL	BL	BL	BL		
34	FPC lamp belt	BL	BL	BL	X	BL	PBBs&PBDEs: N.D.	
35	Cap head screw	BL	BL	BL	N.A.	X	Cr^{6+}: Negative	
36	Flat head hexagonal screw	BL	BL	BL	N.A.	X	Cr^{6+}: Negative	

Test Report

Sample No.	Sample Description	EDXRF Result(1)					Wet Chemical Test Results(2) (mg/kg)	Remark
		Pb	Cd	Hg	Br	Cr		
37	Gasket	BL	BL	BL	N.A.	X	Cr^{6+}: Negative	
38	Nut	BL	BL	BL	N.A.	BL		
39	Flat cross screw	BL	BL	BL	N.A.	X	Cr^{6+}: Negative	
40	Black spring	BL	BL	BL	N.A.	X	Cr^{6+}: Negative	
41	Hexagon spanner	BL	BL	BL	N.A.	BL		
42	Heat-shrink tube	X	BL	BL	BL	BL	Pb: 619	
43	J connector	BL	BL	BL	X	BL	PBBs&PBDEs: N.D.	
44	Lamp beads	BL	BL	BL	X	BL	PBBs&PBDEs: N.D.	
45	Pallet	BL	BL	BL	BL	BL		
46	Handle	BL	BL	BL	BL	BL		

Note

(1) a: Results are obtained by XRF for primary screening, and further wet chemical testing by ICP-OES / AAS (for Cd, Pb, Hg), UV-Vis (for Cr(VI)) and GC/MS (for PBBs, PBDEs) is recommended to be performed, if an inconclusive result was found (as “X” in below table)(unit: mg/kg).

b: OL = Over Limit, BL = Below Limit, X = Inconclusive, N.A.= Not Applicable.

c: The XRF screening test for the elements – The reading may be different to the actual content in the sample be of non-uniformity composition.

Element	Polymer	Metal	Composite Materials
Cd	BL ≤(70-3σ)< X <(130+3σ)≤ OL	BL ≤(70-3σ)< X <(130+3σ)≤ OL	LOD < X <(150+3σ)≤ OL
Pb	BL ≤(700-3σ)< X <(1300+3σ)≤ OL	BL ≤(700-3σ)< X <(1300+3σ)≤ OL	BL ≤(500-3σ)< X <(1500+3σ)≤ OL
Hg	BL ≤(700-3σ)< X <(1300+3σ)≤ OL	BL ≤(700-3σ)< X <(1300+3σ)≤ OL	BL ≤(500-3σ)< X <(1500+3σ)≤ OL
Br	BL ≤ (300-3σ)< X	N.A.	BL ≤ (250-3σ)< X
Cr	BL ≤ (700-3σ)< X	BL ≤ (700-3σ)< X	BL ≤ (500-3σ)< X

(2) a: N.D. = Not Detected (Less than Detection limit).

b: Unit, Detection limit and limit in wet chemical test.

Test items	Pb	Cd	Hg	Cr^{6+}	PBBs	PBDEs
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Detection limit	2	2	2	2 (Non-metal) 0.02 (Metal)	5	5
Limit	1000	100	1000	1000	1000	1000

c: 0.02 mg/kg refers to the MQL of sample extraction liquid.

Result on Cr^{6+} for metal sample is shown as Positive/Negative.

Negative = Absence of Cr^{6+} in the metallic sample, Positive = Presence of Cr^{6+} in the metallic sample. (The tested sample should further verified by boiling-water-extraction method if the spot test result cannot be confirmed or spot test result is negative)

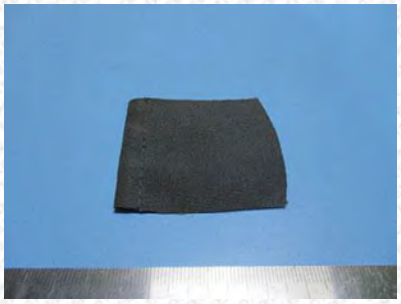
Storage condition and production date of the tested sample are uN.A.vailable and thus results of Cr^{6+} represent status of the sample at the time of testing.

(3) Sample 09, sample 19, sample 27 and sample 32 are provided again by the applicant to test.

Product Photo

Test Report

Sample Photos



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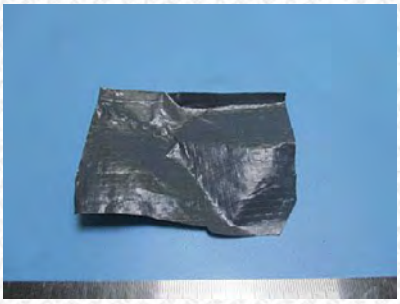

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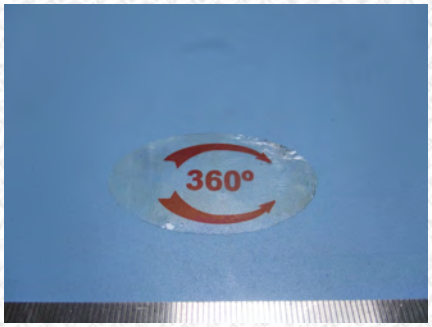

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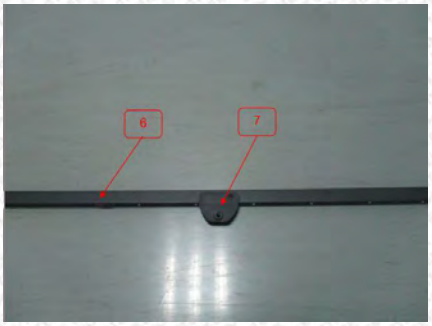

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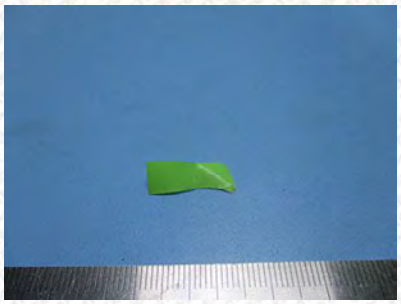

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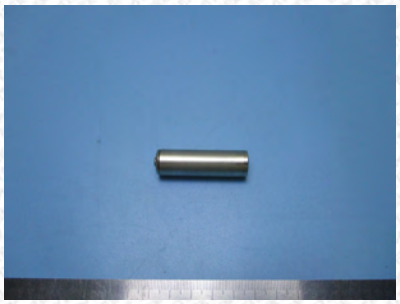

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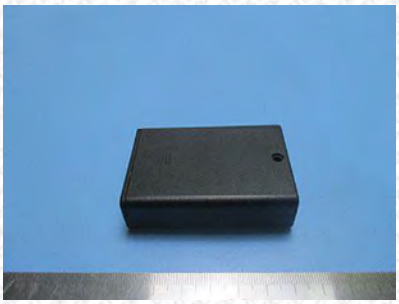

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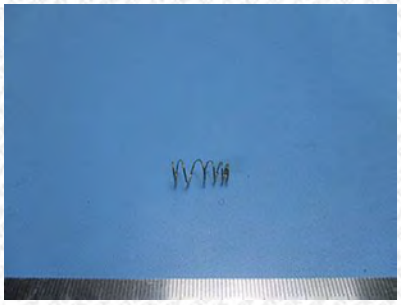

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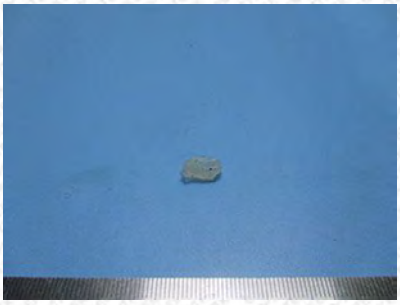

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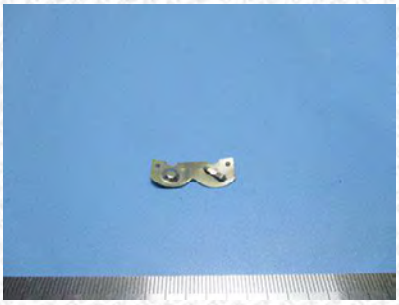

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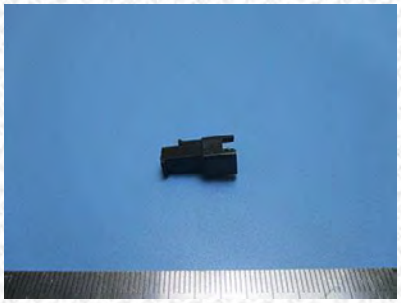
Test Report



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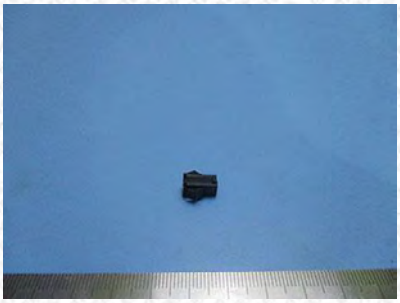

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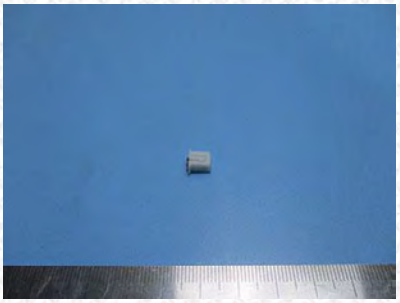

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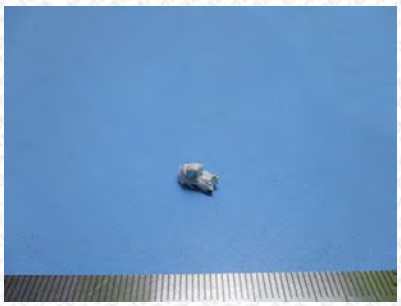

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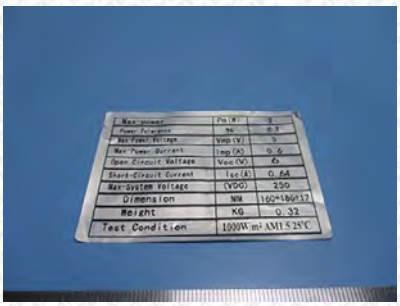

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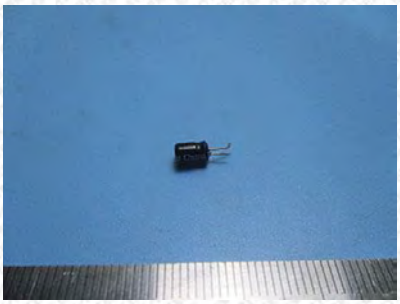

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Test Report

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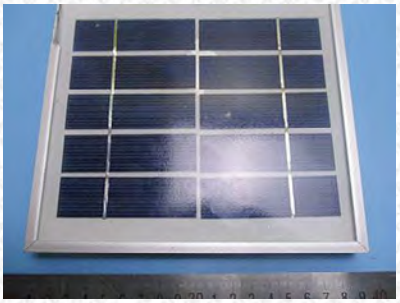

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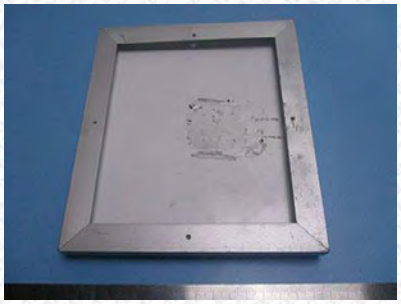

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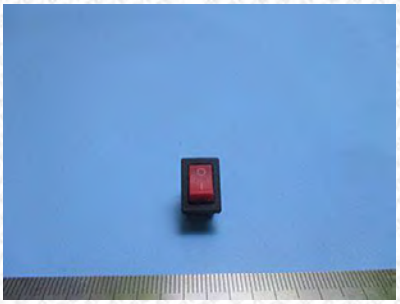

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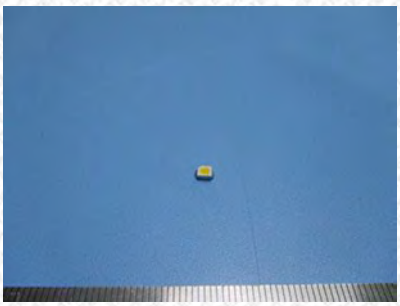

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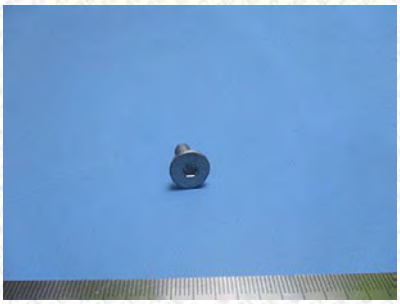

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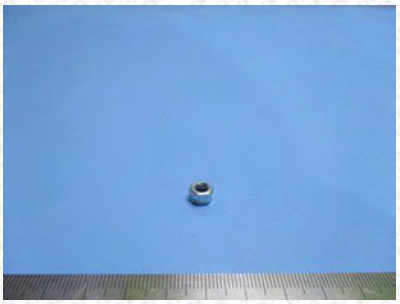

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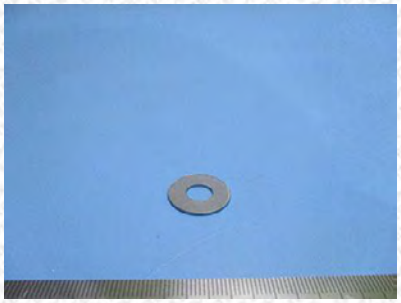
Test Report



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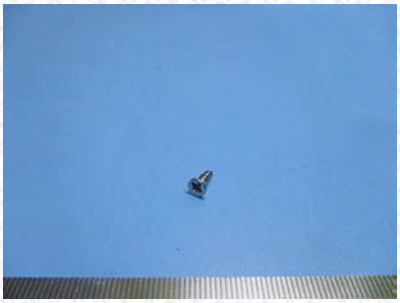

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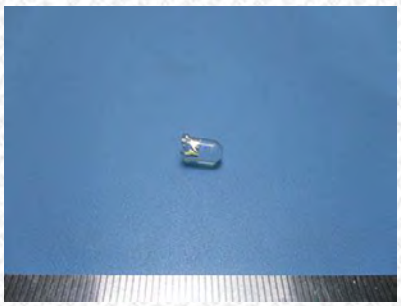

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*** End of Report ***

Unit C, 10/F., Hang Cheong Factory Building
1 Wing Ming Street, Lai Chi Kok, Kowloon, Hong Kong
香港九龍荔枝角永明街一號恒昌工業大廈十樓C 室
Tel: (852) 2548 9072
Fax: (852) 2540 4764

SUNRISE OUTDOOR LTD

Rm818, Tianyihaojing Block A,
No.19 Hualou Lane, Ningbo,
315000, CHINA

RAPPORT D'ESSAIS / *TEST REPORT* N° R2017-54113

Edité le / *Issued on*
17/01/2018

Annule et remplace le rapport d'essais / *Cancel and replace the test report*
N° R2017-53793

Donneur d'ordre / *Customer* :	SUNRISE OUTDOOR LTD
Devis / *Quotation* :	Q2017-49727, Q2017-50199 & Q2017-50436
Nom du produit / *Name of product* :	PARASOL ROMA SOLAIRE LED MAT ET BALEINE EN ALU POLYESTER 200G/M2
Référence produit du client / *Customer's product reference* :	U124
Fournisseur / *Supplier* :	/
Référence produit du fournisseur / *Supplier's product reference* :	/
Reçu le / *Received on* :	17/10/2017 – 27/12/2017
Date ou période d'essai / *Date or period of test* :	06/11/2017 – 04/01/2018

Responsable du Département de Contrôle / *Control Department Manager*
Eric LAOT

Il comporte 4 pages et 5 annexe(s).

It contains 4 pages and 5 appendix(es).

Les résultats ne s'appliquent qu'aux échantillons soumis au laboratoire et comme il est défini dans le présent document.
Pour déclarer, ou non, la conformité à la spécification, il n'a pas été tenu explicitement compte de l'incertitude associée au résultat.
The results relate only to the samples submitted to the laboratory as specified in the present document.
The uncertainties were not explicitly taken into account during the assessment of compliance with specification.

Laboratoires POURQUERY – France
2 Espace Henry Vallée – 69354 LYON CEDEX 07 – FRANCE
TEL : (33) 4 78 61 21 16 – FAX : (33) 4 78 61 01 90

GROUPE ESSAIS POURQUERY

LUMINAIRES
LUMINAIRES

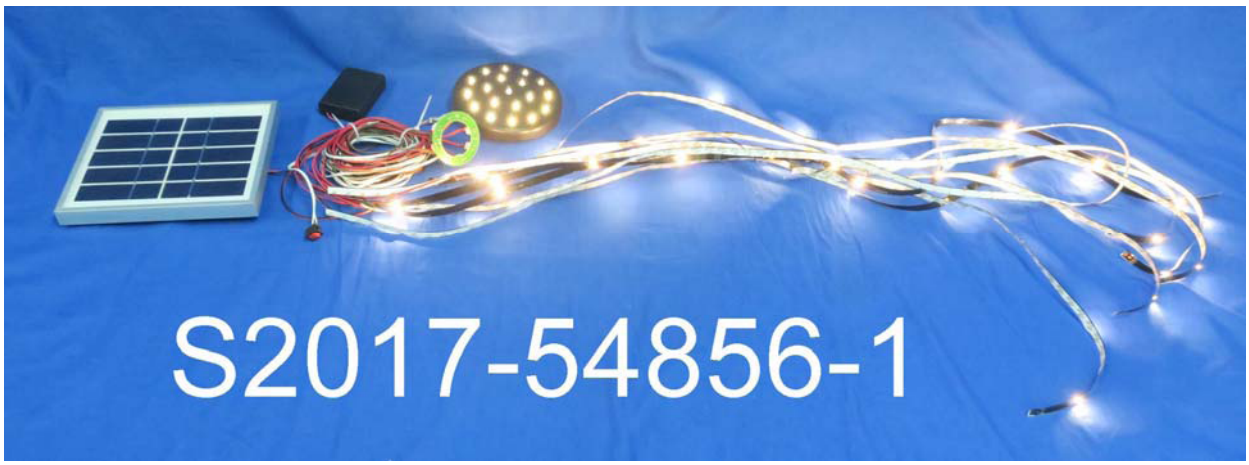
NF EN 60598-1 (2015)

Luminaires portatifs pour emploi dans les jardins
Portable luminaires for garden use

NF EN 60598-2-7 (1991) + A2 + A12 + A13

Désignation : *Description :*	Parasol with solar LED light
Référence client : *Customer's reference :*	U124
Référence fournisseur : *Supplier's reference :*	/

PHOTO / *PHOTO*



Description du produit / *Description of the product* :	
Tension nominale / *Rated voltage :*	3 x 1.2V AA Ni-MH
Puissance maximale admissible / *Rated wattage :*	2.8W
Nombre, type d'ampoule(s) / *Number, type of bulb(s) :*	99 LEDs
Masse du luminaire (kg) */ Weight of the product (kg) :*	25.7
Type de montage / *Type of installation :*	[ ] Murale / *Wall* [ ] Plafond / *Ceiling* [X] A poser / *To stand up* [ ] Autre : / *Other :*
Présence d'un transformateur / *Luminaire with transformer :*	[ ] Oui / *Yes* [X] Non / *No*
Présence d'un ballast / boîtier électronique : *Luminaire with ballast or electronic controller :*	[ ] Oui / *Yes* [X] Non / *No*

Classification des luminaires / *Classification of luminaires :*

Protection contre les chocs électriques / *Protection against electric shock :*

[ ] Classe I / *Class I*

[ ] Classe II / *Class II*

[X] Classe III / *Class III*

Degré de protection procuré par l'enveloppe / *Degree of protection :* **IP44**

Produit à monter sur une surface / *Supporting surface :*

[X] Normalement inflammable / *Normally flammable*

[ ] Non combustible */ Non-combustible*

Condition d'emploi / *Circumstances of use :*

[X] Luminaire pour usage normal / *Luminaire for normal use*

[ ] Luminaire pour conditions sévères d'emploi / *Luminaire for rough service*

Présence d'une marque de conformité / *Presence of a mark of conformity :*

Sur le produit / *On the product :* [ ] Oui / *Yes* [X] Non / *No* Marque / *Mark :* /

Sur l'emballage / *On the packaging :* [ ] Oui / *Yes* [X] Non / *No* Marquee / *Mark :* /

Présence du marquage CE / *Presence of the CE marking :*

Sur le produit / *On the product :* [X] Oui / *Yes* [ ] Non / *No*

Sur l'emballage / *On the packaging :* [X] Oui / *Yes* [ ] Non / *No*

CONCLUSION / *CONCLUSION* (*) :

SATISFAISANT
SATISFACTORY

COMPILATION DES RESULTATS DES ESSAIS : *SUMMARY OF TEST RESULTS* :	VOIR ANNEXE 1 *SEE APPENDIX 1*
LISTE DES COMPOSANTS : *LIST OF COMPONENTS* :	VOIR ANNEXE 2 *SEE APPENDIX 2*
PROGRAMME DES ESSAIS : *LIST OF PERFORMED TESTS* :	VOIR ANNEXE 3 *SEE APPENDIX 3*
EUROLAB FRANCE NT N°33 : *EUROLAB FRANCE NT N°33* :	VOIR ANNEXE 4 *SEE APPENDIX 4*
RELEVÉS DE TEMPÉRATURE : *TEMPERATURE RECORD* :	VOIR ANNEXE 5 *SEE APPENDIX 5*

(*) : La conclusion ne concerne que les essais réalisés comme mentionné dans le présent document
The conclusion only applies to the performed tests as mentioned in the present document

- FIN DU RAPPORT D'ESSAIS -
- END OF TEST REPORT -

ANNEXE 1 / *APPENDIX 1*

COMPILATION DES RESULTATS DES ESSAIS / *SUMMARY OF TEST RESULTS*

NON CONFORMITE(S) / ***NON CONFORMITY POINT(S)*** **:**

Néant / *None*

NON CONFORMITE(S) DE MARQUAGE / ***MARKING NON CONFORMITY POINT(S) :***

Néant / *None*

REMARQUE(S) / ***COMMENT(S)*** **:**

- No packaging provided for test.

ANNEXE 2 / *APPENDIX 2*

COMPOSANTS / *COMPONENTS*

Elément ***Component***	**Fabricant** ***Manufacturer***	**Référence** ***Reference***	**Caractéristiques** ***Rated Features***	**Remarques** ***Comments***	**Observations** ***Statements***		
					1	**2**	**3**
Interrupteur *Switch*	/	KCD1-108	3A, 250VAC	/			**X**
Câblage interne *Internal wiring*	/	2468	26AWG, 80°C 300V, VW-1	/			**X**
Connecteur TBTS *SELV connector (White/Green LED strip)*	/	/	2 pins type	/			**X**
Connecteur TBTS *SELV connector (Black)*	/	/	2 pins type	/			**X**
LED *LED*	/	/	Ø5mm warm white convex LED	/		**X**	
LED *LED*	/	/	2.8mm x 3.5mm warm white SMD LED	/		**X**	
Battery compartment	/	/	3 x 1.2V, AA	/			**X**
Rechargeable battery	/	/	1.2V AA, 1500mAh Ni-MH	/		**X**	
Solar plate	/	/	/	/			**X**
PCB (For LED strips)	/	NL3568	/	/			**X**
Heat-shrinkable tube	WOER	RSFR-H	125°C, 600V VW-1	/			**X**

Observations / *Statements* :

1 - Composant portant le sigle de la marque de conformité d'un pays de la CEE.
Component which bears a conformity mark from a EEC country.

2 - Composant bénéficiant d'un document attestant de sa conformité (vérification des normes correspondantes hors dates de validité).
Component with appropriate documents proving its conformity (checking based on the standard reference number and excluding validity date)

3 - Composant vérifié conformément aux détails appropriés des documents appliqués.
Component checked according to appropriate requirements of the applied documents.

ANNEXE 3 / *APPENDIX 3*

PROGRAMME DES ESSAIS REALISES / *LIST OF PERFORMED TESTS*

Note : La construction du produit analysé peut rendre certains de ces essais/examens non applicables.
The tested sample(s) may be so constructed that some tests/examinations are not applicable.

Article *Clause*	**Intitulé des essais** *Test description*	**RESULTATS** *RESULTS*				**Commentaires** *Comments*
		NA	**S**	**NS**	**NE**	
7.2 (0)	Exigences générales *General requirements*		X			
7.5 (3)	Marquage *Marking*		X			
7.6 (4)	Construction *Construction*		X			
7.7 (11)	Lignes de fuites et distances dans l'air *Creepage distances and clearances*	X				
7.8 (7)	Dispositions en vue de la mise à la terre *Provision for earthing*	X				
7.9 (14)	Bornes à vis *Screw terminals*	X				
7.9 (15)	Bornes sans vis et connexions électriques *Screwless terminals and electrical connections*	X				
7.10 (5)	Câblage externe et interne *External and internal wiring*		X			
7.11 (8)	Protection contre les chocs électriques *Protection against electric shock*		X			
7.12 (12)	Essais d'endurance et d'échauffement *Endurance test and thermal test*		X			
7.13 (9)	Résistance aux poussières, aux corps solides et à l'humidité *Resistance to dust, solid objects and moisture*		X			IP44
7.14 (10)	Résistance d'isolement et rigidité diélectrique, courant de contact et courant dans le conducteur de protection *Insulation resistance and electric strength, touch current and protective conductor current*		X			
7.15 (13)	Résistance à la chaleur, au feu et aux courants de cheminement *Resistance to heat, fire and tracking*		X			
Annexe ZC	Divergences A *A-deviations*	X				
Annexe O	Eurolab France NT n°33 Luminaires alimentés par piles ou accumulateurs *Battery operated luminaires*		X			

NA : Non Applicable / *Not Applicable*
S : Satisfaisant / *Satisfactory*
NS : Non Satisfaisant / *Not Satisfactory*
NE : Non Effectué / *Not carried out*

ANNEXE 4 / *APPENDIX 4*

EUROLAB France NT n°33

- ANNEXE O / ***ANNEX O*** **-**

Luminaires alimentés par piles ou accumulateurs / ***Battery operated luminaires***

Article ***Clause***	**Intitulé des essais** ***Test description***	**Commentaires** ***Comments***
O.3	**Marquage et indications** ***Marking and instructions***	
O.3.2	Le compartiment des piles/accumulateurs des appareils comportant des piles/accumulateurs destinés à être remplacées par l'utilisateur doit porter les marquages suivants : *The battery compartment of appliances incorporating batteries that are intended to be replaced by the user shall be marked with :*	
	• Tension des piles/accumulateurs *Battery voltage*	
	• Polarité des bornes *Polarity of the terminals*	
	Si plusieurs piles/accumulateurs sont utilisés, le compartiment à piles/accumulateurs doit porter les marquages suivants : *If more than one battery is used, the battery compartment shall be marked with :*	
	• Forme des piles/accumulateurs en grandeur proportionnelle *Shape of the batteries in proportional size*	
	• Tension nominales *Nominal voltage*	
	• Polarités *Polarities*	
O.3.3.21	Les instructions pour les appareils comportant des piles/accumulateurs non remplaçables doivent indiquer que les piles/accumulateurs ne sont pas remplaçables *Instructions for appliances incorporating non-replaceable batteries shall indicate that the batteries cannot be replaced*	
	Les instructions doivent donner des informations concernant l'opération de charge *The instructions shall give information regarding charging*	
	Les instructions pour les appareils comportant des piles/accumulateurs contenant des matériaux dangereux pour l'environnement : *Instructions for appliances incorporating a battery that contains materials that are hazardous to the environment :*	
	• « Les piles/accumulateurs doivent être retirés de l'appareil avant que celui-ci soit mis au rebut » *« The batteries must be removed from the appliance before it is scrapped »*	
	• « L'appareil doit être déconnecté du réseau d'alimentation lorsqu'on retire les piles ou accumulateurs » *« The appliance must be disconnected from the supply mains when removing the battery »*	
	• « Les piles et accumulateurs doivent être éliminés de façon sûre » *« Batteries are to be disposed of safely »*	

Article ***Clause***	**Intitulé des essais** ***Test description***	**Commentaires** ***Comments***
	Instructions pour les appareils comportant des piles/accumulateurs destinés à être remplacés par l'utilisateur : *The instructions for appliances incorporating batteries that are intended to be replaced by the user :*	
	• Référence du type de la pile/accumulateur *The type reference of the battery*	
	• Orientation des piles/accumulateurs en ce qui concerne la polarité *The orientation of the battery with regard to polarity*	
	• Instructions pour l'enlèvement et la mise en place des piles/accumulateurs *Instructions on how to remove and insert the batteries*	
	• Détails concernant l'élimination sûre des piles/accumulateurs usés *Details regarding safe disposal of used batteries*	
	• « Des piles (non-rechargeables) ne doivent pas être rechargées » *« Non-rechargeable batteries are not to be recharged »*	
	• Comment réagir en présence d'une pile ou d'accumulateur qui fuit *How to deal with leaking batteries*	
	• « Les bornes d'une pile ou d'un accumulateur ne doivent pas être mises en court-circuit » *« The supply terminals are not to be short-circuited »*	
	• « Différents types de piles ou accumulateurs ou des piles ou accumulateurs neufs et usagés ne doivent pas être mélangés » *« Different types of batteries or new and used batteries are not to be mixed »*	
	• « Les piles ou accumulateurs usés doivent être enlevés de l'appareil » *« Exhausted batteries are to be removed from the appliance »*	
	Pour les luminaires autres que les luminaires fixes, la notice d'instructions doit indiquer que les opérations de charge doivent être faites à l'intérieur lorsque protection contre la pénétration de l'humidité et des corps solides (indice IP) ne peut pas être conservée pendant les opérations de charge *For luminaires other than fixed luminaires, the instructions shall state that the charging operations shall be done indoor if the IP degree of protection cannot be maintained when charging*	
O.4	**Construction** ***Construction***	
	Pour les luminaires fixes non ordinaires dont la recharge est effectuée à l'aide d'un chargeur externe, la protection contre la pénétration de l'humidité et des corps solides (indice IP) doit être conservée même pendant les opérations de charge *For non-ordinary fixed luminaires to be recharged by external charger, the IP degree shall be maintained even during charging*	
	Pour les luminaires qui peuvent être rechargés à l'extérieur, la protection contre la pénétration de l'humidité et des corps solides (indice IP) doit être conservée même pendant les opérations de charge *For luminaires that can be recharge outdoor, the IP degree shall be maintained even during charging*	
	Pour les luminaires dont les piles/accumulateurs ne sont pas remplaçables, il ne doit pas être possible d'enlever les piles/accumulateurs à la main *For luminaires with non-replaceable batteries, the batteries shall not be removable by hand*	
	Luminaires à piles/accumulateurs tenus à la main en usage normal : *Hand-held battery operated luminaires :* • Essai de chutes (3 chutes de 1m sur un sol en béton) *Drop test (1m, 3 times on a concrete floor)*	

Article *Clause*	Intitulé des essais *Test description*	Commentaires *Comments*
O.8	**Protection contre les chocs électriques** ***Protection against electric shock***	
	Les parties actives des luminaires ne doivent pas être accessibles lorsqu'ils sont ouverts lors du remplacement des piles/accumulateurs même si cette opération nécessite l'emploi d'un outil *Luminaires shall be so constructed that their live parts are not accessible when the luminaire is opened as necessary for replacing the batteries, even if the operation requires the use of a tool*	
	Le compartiment des piles/accumulateurs ne doit pas donner accès à des parties à isolation principale sans protection supplémentaire contre le contact accidentel, si le luminaire peut fonctionner sans les piles/accumulateurs *Basic insulated parts shall not be used on the surface of the battery compartment without appropriate protection against accidental contact, if the luminaire can be operated without batteries*	
O.12	**Essais d'endurance et d'échauffement** ***Endurance test and thermal test***	
O.12.1	**Essais d'endurance** ***Endurance test***	
	Essai d'endurance pour les luminaires à piles/accumulateurs dont la puissance en fonctionnement normal est supérieure à 15VA *Endurance test for a luminaire having a measured power during normal operation greater than 15VA*	
O.12.4	**Essais d'échauffement** ***Thermal test***	
	Essai d'échauffement en fonctionnement normal *Thermal test under normal operation*	
O.12.5	**Fonctionnement anormaux** ***Abnormal operation***	
a)	Luminaires avec dispositif de charge intégré : *Luminaires with built-in charge device :* • Essai d'échauffement avec remplacement de l'accumulateur par un court-circuit à la sortie du chargeur *Heating test with a short-circuit link across the battery charger output*	
b)	Luminaires à raccorder au réseau pour les opérations de charge : *Luminaires to be connected to the mains when charging :* • Essai d'échauffement pendant 168h ; l'accumulateur étant continuellement en charge *Heating test during 168h; the battery being continually charged*	
c)	Luminaires à piles ou accumulateurs dont la puissance en fonctionnement normal est supérieure à 15VA : *Luminaires with batteries having a power during normal use greater than 15VA :* • Essai de court-circuit avec une barre droite *Short-circuit test with a straight bar*	
d)	Luminaires à piles ou accumulateurs destinés à être remplacés par l'utilisateur : *Luminaires with batteries intended to be replaced by the user :* • Essai d'échauffement avec une ou plusieurs piles ou accumulateurs retirés ou placés dans toutes les positions permises par la construction *Heating test with any battery being removed or put in any position allowed by the construction*	

ANNEXE 5 / *APPENDIX 5*

RELEVE DE TEMPERATURE / *TEMPERATURE RECORD*

7.12 (12.4) - ECHAUFFEMENTS en fonctionnement normal / *HEATING under normal operation*

U = 3 x 1.2V AA Ni-MH
$T_{ambiant}$ = 21.7°C

TEMPERATURES MAXIMALES POUR LES PARTIES PRINCIPALES
(note : un dépassement de 5°C des limites ci-dessous est admis)
MAXIMUM TEMPERATURES FOR THE MAIN PARTS
(note : the temperatures shall not exceed the below mentioned limits by more than 5°C)

Parties ***Parts***	**Description** ***Description***	**Températures max. admissibles** ***Maximum temperature*** **(°C)**	**Température relevée** ***Measured temperature (°C)***
Interrupteurs portant la marque de leurs caractéristiques individuelles : ***Switches marked with individual ratings :***			
• Sans marquage T *Without T marking*	Switch knob	55	<30
Surface d'appui : ***Mounting surface :***			
• Surface normalement inflammable *Normally flammable surface*	Under battery case	90	<30
Isolement de câbles (interne et externe) fournis avec le luminaire : ***Insulation of wiring (internal and external) supplied with the luminaire :***			
• Polychlorure de vinyle ordinaire (PVC) et caoutchouc ordinaire *Ordinary polyvinyl chloride (PVC) and ordinary rubber*	Internal wire at the cable entry of solar plate	90	38.5
• Polychlorure de vinyle ordinaire (PVC) et caoutchouc ordinaire *Ordinary polyvinyl chloride (PVC) and ordinary rubber*	Internal wire at the cable entry of battery compartment	90	<30
• Polychlorure de vinyle ordinaire (PVC) et caoutchouc ordinaire *Ordinary polyvinyl chloride (PVC) and ordinary rubber*	Internal wire at the cable entry of LED compartment	90	<30
• Polychlorure de vinyle ordinaire (PVC) et caoutchouc ordinaire *Ordinary polyvinyl chloride (PVC) and ordinary rubber*	Bifurcation point of LED strip	90	<30

§O.12.4 - Fonctionnement normal *Normal operation*			
Parties ***Parts***	**Description** ***Description***	**Limite** ***Limit*** **(K)**	**Echauffement** ***Temperature rise*** ***(K)***
Piles / accumulateurs *Batteries*	Battery surface	45	5.5
Parties métalliques *Parts of metal*	Metal part under battery case	45	2.6
Parties métalliques *Parts of metal*	Metal part under Led strip	45	1.8
Parties constituées en autres matériaux *Parts of other materials*	Switch knob	45	0.9

§O.12.5 - Fonctionnement anormal *Abnormal operation*	[X] **a)**	[ ] **b)**	[ ] **c)**	[ ] **d)**	
Parties ***Parts***		**Description** ***Description***		**Limite** ***Limit*** **(K)**	**Echauffement** ***Temperature rise*** ***(K)***
Piles / accumulateurs remplaçables *Replaceable batteries*		Battery surface		45	4.7
Piles / accumulateurs remplaçables *Replaceable batteries*		Battery surface		45	3.2
Piles / accumulateurs remplaçables *Replaceable batteries*		Battery surface		45	3.2

Compliance Laboratory

D E C L A R A T I O N

of Conformity

Order No.: MTE/EAH/8070719

Holder:	**Shenzhen JMN Battery Co., Ltd.** **Bldg 31, 33 Tongfucun Ind. Park, Shiao Village, Dalang,** **Baoan Dist. Shenzhen**
Equipment Description:	NI-MH BATTERY
Model Name:	AA SERIES
Technical Data:	DC 1.2V

The submitted products have been tested by us with the listed standards and found in compliance with the following European Directives:

The EMC directive 2004/108/EC

EN 61000-6-3:2007
EN 61000-6-1:2007

The tests were performed in normal operation mode. The test results apply only to the particular sample tested and to the specific tests carried out.

This certificate applies specifically to the sample investigated in our test reference number only.

The CE markings as shown below can be affixed on the product after preparation of necessary technical documentation.

Other relevant Directives have to be observed.

July 21, 2018

Mark Wen
For Chief Executives

MOST COMPLIANCE LABORATORY LIMITED
COMMON SEAL

CE

Most Compliance Laboratory Limited
No. 5, 2nd Langshan Road, North District, Hi-tech Industrial Park,
Nanshan, Shenzhen, Guangdong, China
Tel: 86 755 8617 0306 Fax: 86 755 8617 0310