

APPLICATION FOR TEST REPORT

On Behalf of

Global Tech China Limited

LED Flood Light

Model: 403002X with PIR, 40300XX without PIR

**Prepared For : Global Tech China Limited
3 Flat A, Wai Yip Industrial Building, 171 Wai Yip Street, Kwun Tong,
Kowloon, Hong Kong**

**Prepared By : Shenzhen LCS Compliance Testing Laboratory Ltd.
1F., Xingyuan Industrial Park, Tongda Road, Bao'an Blvd., Bao'an
District, Shenzhen, Guangdong, China**

Date of Test : March 20, 2013 – April 09, 2013

Date of Report : April 09, 2013

Report Number : LCS130319386TS

TEST REPORT**EN 62471****Photobiological safety of lamps and lamp systems**

Report reference No. : LCS130319386TS

Tested by(name + signature) : Olivia Yang



Approved by(name +signature) : Hart QiU



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Contents : 15 pages

Testing laboratory

Name : Shenzhen LCS Compliance Testing Laboratory Ltd.

Address..... : 1F., Xingyuan Industrial Park, Tongda Road, Bao'an Blvd,
Bao'an District, Shenzhen, Guangdong, China

Testing location : As above

Client

Name : Global Tech China Limited

Address..... : 3 Flat A, Wai Yip Industrial Building,171 Wai Yip Street, Kwun Tong,
Kowloon, Hong Kong**Manufacturer**

Name : Global Tech China Limited

Address..... : 3 Flat A, Wai Yip Industrial Building,171 Wai Yip Street, Kwun Tong,
Kowloon, Hong Kong**Test specification**

Standard : EN 62471: 2008;

Test procedure : Compliance with EN 62471: 2008

Non-standard test method : N.A.

Test item Description : LED Flood Light

Trademark : Mighty Lite

Model and/or type reference..... : 403002X with PIR, 40300XX without PIR

Rating(s) : Input: 230V~, 50Hz, Power consumption: 15W; Class III, IP20

EN 62471			
Clause	Requirement - Test	Result - Remark	Verdict
1	SCOPE		P
	More sections applicable	Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>]	—
4	EXPOSURE LIMITS		P
4.1	General		P
	The exposure limits in this standard apply to continuous sources where the exposure duration 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. The values should not be regarded as precisely defined lines between safe and unsafe levels.		P
	detailed spectral data of a light source are generally required only if the luminance of the source exceeds 104 cd•m ⁻² .	See clause 4.3	P
4.2	Specific factors involved in the determination and application of retinal exposure limits		N
4.2.1	Pupil diameter		P
4.2.2	Angular subtense of source and measurement field-of-view		P
4.3	Hazard exposure limits		P
4.3.1	Actinic UV hazard exposure limit for the skin and eye	Led light source	N
	The limits for exposure to ultraviolet radiation incident upon the unprotected skin or eye apply to exposure within any 8-hour period.		N
	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:		N
	$E_s \cdot t = \sum_{200}^{400} \sum_t E_\lambda(\lambda, t) \cdot S_{UV}(\lambda) \Delta t \cdot \Delta \lambda$ J•m ⁻²		N
	The permissible time for exposure to ultraviolet radiation incident upon the unprotected eye or skin shall be computed by:		N
	$t_{\max} = \frac{30}{E_s}$		N
4.3.2	Near-UV hazard exposure limit for the eye		N

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Clause	Requirement - Test	Result - Remark	Verdict
	For the spectral region 315 nm to 400 nm (UV-A) the total radiant exposure to the eye shall not exceed 10000 Jm ⁻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, EUVA, shall not exceed 10 Wm ⁻² .		N
	$E_{SUV} \cdot t = \sum_{315}^{400} \sum_t E_{\lambda}(\lambda, t) \cdot \Delta t \cdot \Delta \lambda \leq 10000$ J•m ⁻² (t < 1000 s)		N
	The permissible time for exposure to ultraviolet radiation incident upon the unprotected eye for times less than 1000 s, shall be computed by:		N
	$t_{max} \leq \frac{1000}{E_{UVA}} \quad S$		N
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, LB, shall not exceed the levels defined by:		P
	$L_B \cdot t = \sum_{300}^{700} \sum_t L_{\lambda}(\lambda, t) \cdot B_{(\lambda)} \cdot \Delta t \cdot \Delta \lambda \leq 1$ J•m ⁻² •sr ⁻¹	(for t ≤ 10 ⁴ s)	N
	$L_B = \sum_{300}^{700} L_{\lambda} \cdot B_{(\lambda)} \cdot \Delta \lambda \leq 100 \text{ W} \cdot \text{m}^{-2} \cdot \text{sr}^{-1}$	For t > 10 ⁴ S	P
4.3.4	Retinal blue light hazard exposure limit - small source		P
	Thus the spectral irradiance at the eye Eλ, weighted against the blue-light hazard function B(λ) (see Table 4.2) shall not exceed the levels defined by:		N
	$E_B \cdot t = \sum_{300}^{700} \sum_t E_{\lambda}(\lambda, t) \cdot B(\lambda) \cdot \Delta t \cdot \Delta \lambda \leq 1$	(for t ≥ 100s)	N
	$E_B = \sum_{300}^{700} E_{\lambda} \cdot B(\lambda) \cdot \Delta \lambda \leq 1$	For t ≤ 100s	N

EN 62471			
Clause	Requirement - Test	Result - Remark	Verdict
4.3.5	Retinal thermal hazard exposure limit		N
	To protect against retinal thermal injury, the integrated spectral radiance of the light source, L_{λ} , weighted by the burn hazard weighting function $B(\lambda)$ (from Figure 4.2 and Table 4.2), i.e., the burn hazard weighted radiance, shall not exceed the levels defined by:		N
	$L_R = \sum_{380}^{1400} L_{\lambda} \cdot B(\lambda) \cdot \Delta\lambda \leq \frac{50000}{\alpha \cdot t^{0.25}} \text{ J}\cdot\text{m}^{-2}\cdot\text{sr}^{-1}$	10us≤t≤10s	N
4.3.6	Retinal thermal hazard exposure limit – weak visual stimulus		P
	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:		P
	$L_{IR} = \sum_{780}^{1400} L_{\lambda} \cdot B(\lambda) \cdot \Delta\lambda \leq \frac{6000}{\alpha} \text{ J}\cdot\text{m}^{-2}\cdot\text{sr}^{-1}$	t>10s	P
4.3.7	Infrared radiation hazard exposure limits for the eye		N
	To 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:		N
	$E_{IR} = \sum_{780}^{3000} E_{\lambda} \cdot \Delta\lambda \leq 1800 \cdot t^{-0.75} \text{ W}\cdot\text{m}^{-2}$	T≤1000s	N
	For times greater than 1000 s the limit becomes:		N
	$E_{IR} = \sum_{780}^{3000} E_{\lambda} \cdot \Delta\lambda \leq 100 \text{ W}\cdot\text{m}^{-2}$	T>1000s	N
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

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Clause	Requirement - Test	Result - Remark	Verdict
	$E_H \cdot t = \sum_{380}^{3000} \sum_t E_\lambda(\lambda, t) \cdot \Delta\lambda \leq 20000 \cdot t^{0.25}$		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)		P
	Seasoning of lamps shall be done as stated in the appropriate IEC lamp standard.		P
5.1.2	Test environment		P
	For specific test conditions, see the appropriate IEC lamp standard or in the absence of such standards, the appropriate national standards or manufacturer's recommendations.		P
5.1.3	Extraneous radiation		N
	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.		P
	--the lamp manufacturer's recommendation		P
5.1.5	Lamp system operation.....		P
	The power source for operation of the test lamp shall be provided in accordance with		P
	--the appropriate IEC standard.		P
	-- the lamp manufacturer's recommendation		N
5.2	Measurement procedure		P
5.2.1	Irradiance measurements		P
	minimum input aperture diameter of 7 mm		N
	maximum input aperture diameter of 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

EN 62471			
Clause	Requirement - Test	Result - Remark	Verdict
5.2.2.1	Standard method..... :		P
	The measurement made with an optical system		P
	The instrument shall be calibrated to read in absolute incident radiant power per unit receiving area and per unit solid angle of acceptance averaged over the field of view (FOV) of the instrument.		P
5.2.2.2	Alternative method :		P
	Alternative 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		
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 point of the source	0.188	P
5.2.4	Pulse width measurement for pulsed sources :		N
	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
5.3	Analysis methods		P
5.3.1	Weighting curve interpolations..... :		P
	The standardized interpolated values, use linear interpolation on the log of given values to obtain intermediate point 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	P
6	LAMP CLASSIFICATION		P
	For the purposes of this standard it was decided that the values shall be reported as follows:		N
	for lamps intended for general lighting service (GLS), 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;		P
	for all other light sources, including pulsed lamp sources, the hazard values shall be reported at a distance of 200 mm.		N
6.1	Continuous wave lamps		P

EN 62471			
Clause	Requirement - Test	Result - Remark	Verdict
6.1.1	Exempt group		P
	the exempt group are lamps, which does not pose any photobiological. This requirement is met by any lamp that does not pose		P
	--an actinic ultraviolet hazard (<i>Es</i>) within 8-hours exposure (30000 s), nor		N
	--a near-UV hazard (<i>EUVA</i>) within 1000 s, (about 16 min) nor		N
	--a retinal blue-light hazard (<i>LB</i>) within 10000 s (about 2,8 h), nor		P
	--a retinal thermal hazard (<i>LR</i>) within 10 s, nor		P
	--an infrared radiation hazard for the eye (<i>EIR</i>) within 1000 s.		N
6.1.2	Risk Group 1 (Low-Risk)		N
	In this group are lamps, which exceeds the limited for the except group but that does not pose:		N
	--an actinic ultraviolet hazard (<i>Es</i>) within 10000 s, nor		N
	--a near ultraviolet hazard (<i>EUVA</i>) within 300 s, nor		N
	--a retinal blue-light hazard (<i>LB</i>) within 100 s, nor		N
	--a retinal thermal hazard (<i>LR</i>) within 10 s, nor		N
	--an infrared radiation hazard for the eye (<i>EIR</i>) within 100 s.		N
	lamps that emit infrared radiation without a strong visual stimulus (i.e., less than $10 \text{ cd}\cdot\text{m}^{-2}$) and do not pose a near-infrared retinal hazard (<i>LIR</i>), within 100 s are in Risk Group 1 (Low-Risk).		N
6.1.3	Risk Group 2 (Moderate-Risk)		N
	This requirement is met by any lamp that exceeds the limits for risk Group 1, but that does not pose:		N
	--an actinic ultraviolet hazard (<i>Es</i>) within 1000 s exposure, nor		N
	--a near ultraviolet hazard (<i>EUVA</i>) within 100 s, nor		N
	--a retinal blue-light hazard (<i>LB</i>) within 0,25 s (aversion response), nor		N
	--a retinal thermal hazard (<i>LR</i>) within 0,25 s (aversion response), nor		N
	--an infrared radiation hazard for the eye (<i>EIR</i>) within 10 s.		N
	lamps that emit infrared radiation without a strong visual stimulus (i.e., less than $10 \text{ cd}\cdot\text{m}^{-2}$) and do not pose a near infrared retinal hazard (<i>LIR</i>) within 10 s are in Risk Group 2 (Moderate-Risk).		N
6.1.4	Risk Group 3 (High-Risk)		N
	Lamps which exceed the limits for Risk Group 2 (Moderate-Risk) are in Risk Group3 (High-Risk).		N
6.2	Pulsed lamps		N

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Clause	Requirement - Test	Result - Remark	Verdict
	Pulsed lamp criteria shall apply to a single pulse and to any group of pulses within 0,25 second.		N
	A pulsed lamp shall be evaluated at the highest nominal energy loading as specified by the manufacturer		N
	The risk group determination of the lamp being tested shall be made as follows:		N
	-- A lamp that exceeds the exposure limit shall be classified as belonging to Risk Group 3 (High-Risk).		N
	-- For single pulsed lamps, a lamp whose weighted radiant exposure or weighted radiance dose is below the EL shall be classified as belonging to the Exempt Group.		N
	-- 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
ANNEX A	SUMMARY OF BIOLOGICAL EFFECTS		--
	Bioeffect datasheet #1: Infrared cataract		N
A.1	Bioeffect: INFRARED CATARACT also known as "industrial heat cataract, "furnaceman's cataract", or "glassblower's cataract".		N
A.1.1	Organ/Site: Eye/Crystalline Lens.		N
A.1.2	Spectral range: 700 nm to 1400 nm and possibly to 3000 nm.		N
A.1.3	Peak of action spectrum: Not known; probably between 900-1000 nm.		N
A.1.4	State of knowledge: Limited threshold data available for acute cataract for rabbit at 1064 nm (Wolbarsht, 1992) and IR-A region (Pitts and Cullen, 1981); no data for man. Degree of additivity and action spectrum unknown. Good epidemiological evidence (Lydahl, 1984).		N
A.1.5	Time course: Noticeable clouding of the lens generally following years of chronic high-level exposure, the elapsed time depending upon how much difference between exposure and threshold, heavy exposures producing reaction in shortest time.		N
A.1.6	Mechanism: Generally presumed to be thermal, although recent evidence suggests possible photochemical reaction - details not understood. The lens may be heated either from direct irradiation (Vogt, 1919) or by conductive heating from the heated iris (Goldman, 1983).		N
A.1.7	Symptoms: Clouding of vision.		N

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Clause	Requirement - Test	Result - Remark	Verdict
A.1.8	Needed information: Action spectrum, if existent, for acute and for effects of concomitant ultraviolet radiation exposure; additivity of multiple exposures, and the possibility of delayed effects from recurrent exposures.		N
A.1.9	Experience with lamps: Accidental injury is not known, even from exposure to heat lamps. Limited population exposed.		N
A.1.10	Key references		N
	Bioeffect datasheet #2		--
A.2	Bioeffect		P
A.2.1	Organ/Site		P
A.2.2	Spectral range		P
A.2.3	Peak of action spectrum		P
A.2.4	State of knowledge		P
A.2.5	Time course		P
A.2.6	Mechanism		P
A.2.7	Symptoms		P
A.2.8	Needed information		P
A.2.9	Experience with lamps		P
A.2.10	Key references		P
	Bioeffect datasheet #3		--
A.3	Bioeffect		N
A.3.1	Organ/Site		N
A.3.2	Spectral range		N
A.3.3	Peak of action spectrum		N
A.3.4	State of knowledge		N
A.3.5	Time course		N
A.3.6	Mechanism		N
A.3.7	Symptoms		N
A.3.8	Needed information		N
A.3.9	Experience with lamps		N
A.3.10	Key references		N
	Bioeffect datasheet #4		--
A.4	Bioeffect		N
A.4.1	Organ/Site		N
A.4.2	Spectral range		N

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Clause	Requirement - Test	Result - Remark	Verdict
A.4.3	Peak of action spectrum		N
A.4.4	State of knowledge		N
A.4.5	Time course		N
A.4.6	Mechanism		N
A.4.7	Symptoms		N
A.3.8	Needed information		N
A.4.9	Experience with lamps		N
A.4.10	Key references		N
	Bioeffect datasheet #5		--
A.5	Bioeffect		N
A.5.1	Organ/Site		N
A.5.2	Spectral range		N
A.5.3	Peak of action spectrum		N
A.5.4	State of knowledge		N
A.5.5	Time course		N
A.5.6	Mechanism		N
A.5.7	Symptoms		N
A.5.8	Needed information		N
A.5.9	Experience with lamps		N
A.5.10	Key references		N
ANNEX B	MEASUREMENT METHOD		N
B.1	Instrumentation		N
B.1.1	Double monochromator: Recommended instrument		N
B.1.2	Broadband detectors		N
B.2	Instrument limitations		N
B.2.1	Noise equivalent irradiance		N
B.2.2	Instrument spectral response		N
B.2.3	Wavelength accuracy		N
B.2.4	Stray radiant power		N
B.2.5	Input optics for spectral irradiance measurements: Recommendation		N
B.2.6	Linearity		N
B.3	Calibration sources		N
ANNEX C	UNCERTAINTY ANALYSIS		P

EN 62471			
Clause	Requirement - Test	Result - Remark	Verdict
ANNEX D	GENERAL REFERENCES		P
ANNEX ZA	Normative references to international publications with their corresponding European publications		N

Table 4.1		Spectral weighting function for assessing ultraviolet hazards for skin and eye.		P
Wavelength ¹ λ , nm	UV hazard function SUV(λ)	Wavelength λ , nm	UV hazard function SUV(λ)	
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	0,960	350	0,00020	
285	0,880	355	0,00016	
290	0,770	360	0,00013	
295	0,540	370	0,00009	
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	
<p>¹ Wavelengths chosen are representative: other values should be obtained by logarithmic interpolation at intermediate wavelengths.</p> <p>* Emission lines of a mercury discharge spectrum.</p>				

Table 4.2	Spectral weighting functions for assessing retinal hazards from broadband optical sources.		P
Wavelength nm	Blue-light hazard function $B(\lambda)$	Burn hazard function $R(\lambda)$	
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

Table 4.2	Spectral weighting functions for assessing retinal hazards from broadband optical sources.		P
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		$0,2 \cdot 10^{0,02(1150-\lambda)}$	
1200-1400		0,02	

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	2 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 irradiance $W \cdot m^{-2} \cdot sr^{-1}$	
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 · $\sqrt{(\theta/10)}$ 0,011 0,0011 · \sqrt{t} 0,1	106/t 106/t 106/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 · $\sqrt{(\theta/10)}$	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	

Table 6.6		Emission limits for risk groups of continuous wave lamps.				P
Risk	Action spectrum	Symbol	Emission limits			Units
			Exempt	Low risk	Mod risk	
Actinic UV	$S_{UV}(\lambda)$	E_s	0,001	0,003	0,03	$W \cdot m^{-2}$
Near UV		E_{UVA}	10	33	100	$W \cdot m^{-2}$
Blue light	$B(\lambda)$	L_B	100	10000	4000000	$W \cdot m^{-2} \cdot sr^{-1}$
Blue light, small source	$B(\lambda)$	E_B	1,0*	1,0	400	$W \cdot m^{-2}$
Retinal thermal	$R(\lambda)$	L_R	28000/ α	28000/ α	71000/ α	$W \cdot m^{-2} \cdot sr^{-1}$
Retinal thermal, weak visual stimulus**	$R(\lambda)$	L_{IR}	6000/ α	6000/ α	6000/ α	$W \cdot m^{-2} \cdot sr^{-1}$
IR radiation, eye		E_{IR}	100	570	3200	$W \cdot m^{-2}$
<p>* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.</p> <p>** Involves evaluation of non-GLS source</p>						

ATTACHMENT 1

Photo Documentation

View:
Model:
403002X
with PIR

- General
- Front
- Rear
- Internal
- Top
- Bottom
- PWB

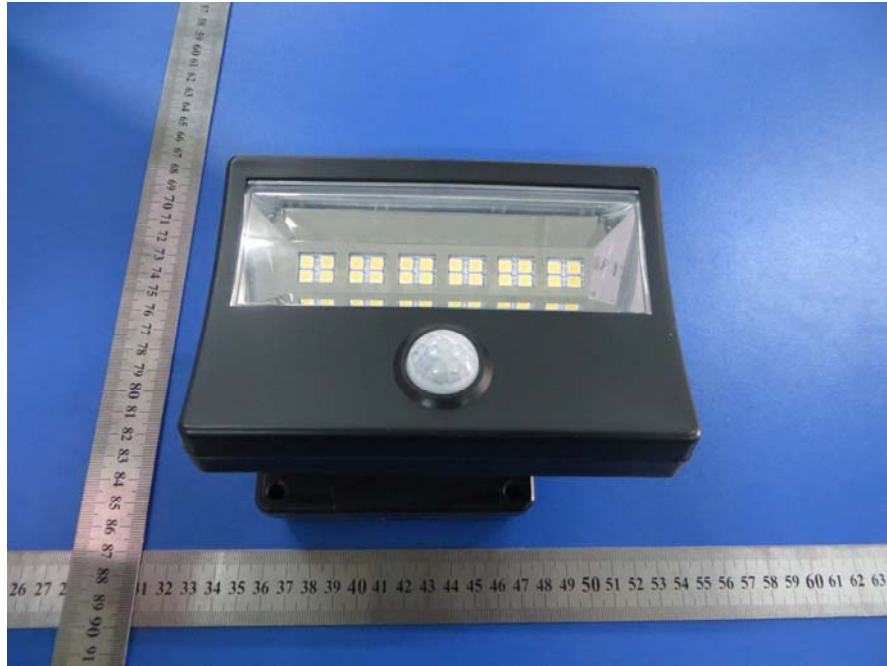


Figure 1

View:

- General
- Front
- Rear
- Internal
- Top
- Bottom
- PWB



Figure 2

ATTACHMENT 1

Photo Documentation

View:

- General
- Front
- Rear
- Internal
- Top
- Bottom
- PWB

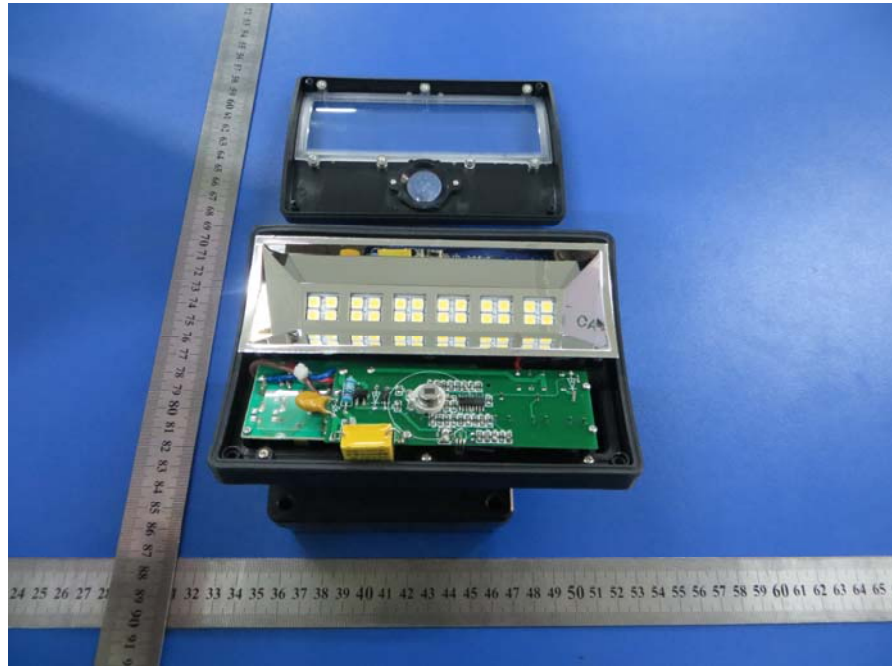


Figure 3

View:

- General
- Front
- Rear
- Internal
- Top
- Bottom
- PWB



Figure 4

ATTACHMENT 1

Photo Documentation

View:

- General
- Front
- Rear
- Internal
- Top
- Bottom
- PWB

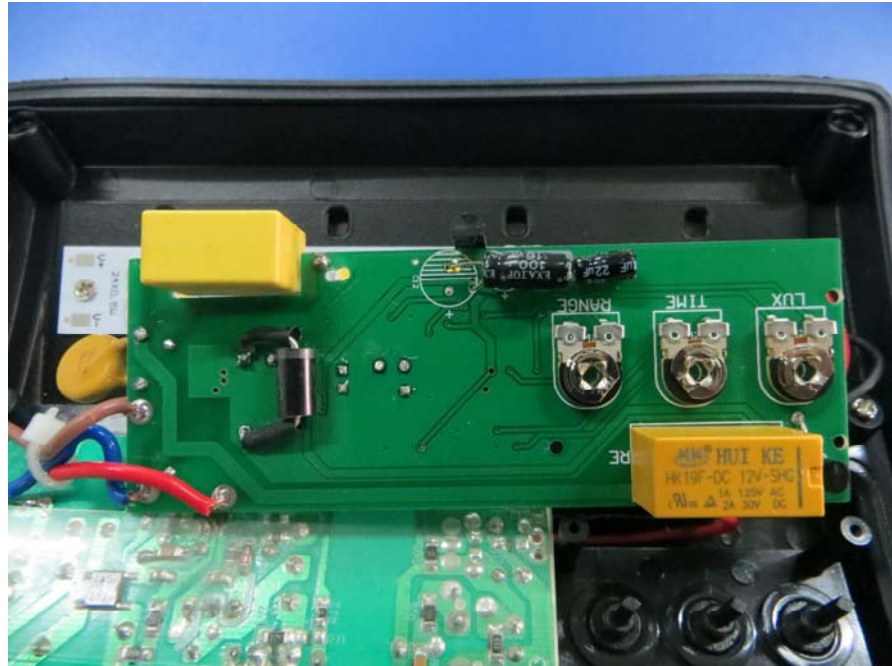


Figure 5

View:

- General
- Front
- Rear
- Internal
- Top
- Bottom
- PWB

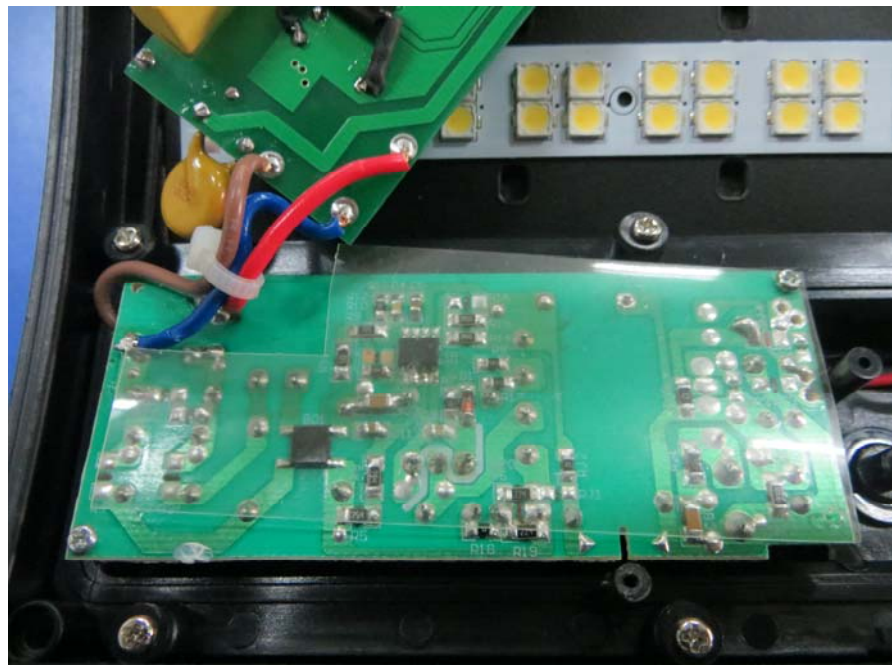


Figure 6

ATTACHMENT 1

Photo Documentation

View:

- General
- Front
- Rear
- Internal
- Top
- Bottom
- PWB



Figure 7