

Report Number:	LCGP14080293	Total Page(s): 16
Applicant Name:	P.Q.L., Inc.	
Applicant Address:	2285 Ward Avenue Simi Valley, CA 93065	
Test Item:	LED Lamps	
Model / Type Reference:	90792	
Date of Issue:	2014-09-17	
Testing Laboratory:	LCTECH (Zhongshan) Testing Service Co.,Ltd 2/F.,Technology and Enterprise Development Center, Guangyuan Road, Xiaolan, Zhongshan, Guangdong, China	
Test Specification:	COMMISSION REGULATION (EU) No 1194/2012 of 12 December 2012 COMMISSION REGULATION (EU) NO 874/2012 of 12 July 2012	
Test Result:	Refer to page 3	
Compiled by:	Approved by:	
2014-09-17	Thomas Liu	Thomas Liu
2014-09-17	Richard Li	Richard Li
_____	_____	_____
Date	Name	Signature
Date	Name	Signature
Remark:	Final report after 6000 hours life test.	
<p>The duplication of this report or parts of it and its use for advertising purposes is only allowed with permission of the testing laboratory. This report contains the result of the examination of the product sample submitted by the applicant. A general statement concerning the quality of the products from the series manufacture cannot be derived therefore.</p>		



Test item description	
Trademark	Superior Life®
Model Number.....	90792
Lighting Products.....	<input checked="" type="checkbox"/> Lamps/modules <input type="checkbox"/> Directional filament lamps <input type="checkbox"/> Directional compact fluorescent lamps <input type="checkbox"/> Directional LED lamps/modules <input checked="" type="checkbox"/> Non-Directional LED lamps/modules <input type="checkbox"/> Directional HID lamps <input type="checkbox"/> Others: _____ <input type="checkbox"/> Lamp control gears <input type="checkbox"/> Filament lamps <input type="checkbox"/> LED lamps <input type="checkbox"/> HID lamps <input type="checkbox"/> Others: _____ <input type="checkbox"/> Luminaires
Lamps with anti-glare shield or not.....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Rated voltage and frequency	100-250Vac ,50/60Hz
Rated wattage	27 W
Rated life time	50000h
Declared luminous flux.....	3200 lm
Declared CRI.....	>80
Declared CCT, beam angle and dimmable.....	5000K ,-, -
Declared lamp contains mercury	No mercury
Intended use.....	<input checked="" type="checkbox"/> General <input type="checkbox"/> Outdoor/industrial
Test case verdicts:	
Test case does not apply to the test object	N/A
Test item does meet the requirement	P(ass)
Test item does not meet the requirement	F(ail)
Testing date:	
Date of receipt of test item	2013-9-1
Date(s) of performance of test	2013-9-1 to 2014-8-29
General remarks:	
<p>This report shall not be reproduced except in full without the written approval of the testing laboratory. The test results presented in this report relate only to the item(s) tested. "(see remark #)" refers to a remark appended to the report. "(See Annex #)" refers to an annex appended to the report. Throughout this report a comma is used as the decimal separator. When determining of test conclusion, measurement uncertainty of test has been considered.</p>	



Summary of test:

The Lamps were subjected to energy efficiency and functional requirements tests .

The following test procedures were followed in LCTECH (Zhongshan) Testing Service Co.,Ltd:

The sample of S1 was subjected to light distribution test, and after the test, there was 25.164% light output within a solid angle of π sr, so the products were classified as **non-directional lamps**. All the light outputs recorded in this report were corrected by the light output tested in goniophotometer.

Then 20 samples were subjected to all the tests as follows in Shenzhen GuanKe Technologies Co.,Ltd:

- Energy Efficiency(Luminous efficacy)
- Lamp survival factor at 6 000 h
- Lumen Maintenance at 6 000 h
- Number of switching cycles before failure(15000 times)
- Starting time
- Lamp warm-up time to 95 % Φ
- Premature failure rate(1000 hours)
- Colour rendering (Ra)
- Colour consistency
- Power factor

It was found that the products fulfil the functional requirements of COMMISSION REGULATION (EU) NO 1194/2012 after all the tests.

The energy efficiency class was also calculated based on COMMISSION REGULATION (EU) NO 874/2012, and the products were classified as: **A⁺ class**

The energy efficiency and product information do not need to check for non-directional LED Lamps based on COMMISSION REGULATION (EU) NO 1194/2012 product information requirements and is marked as "N/A" in this report.

Characteristic data:

Dimensions: unit(mm)
Not provided

Marks:
Not provided

(EU) No 1194/2012				
Clouse	Ecodesign requirement		Test Result	Verdict
1	ENERGY EFFICIENCY REQUIREMENTS			N/A
1.1	Energy efficiency requirements for directional lamps			N/A
	The energy efficiency index (EEI) of the lamp is calculated as: $EEI = P_{cor}/P_{ref}$	Model: $P_{cor} =$; $P_{ref} =$; $EEI =$		N/A
1.1.1	Corrected power (P_{cor}) shall be corrected where appropriate as follows			N/A
	Lamps operating on external halogen lamp control gear	$P_{rated} \times 1,06 =$		N/A
	Lamps operating on external LED lamp control gear	$P_{rated} \times 1,10 = 44,89 \times 1,10 =$		N/A
	Fluorescent lamps of 16 mm diameter (T5 lamps) and 4-pin single capped fluorescent lamps operating on external fluorescent lamp control gear	$P_{rated} \times 1,10 =$		N/A
	Other lamps operating on external fluorescent lamp control gear	$P_{rated} \times \frac{0,24\sqrt{\phi_{use}} + 0,0103\phi_{use}}{0,15\sqrt{\phi_{use}} + 0,0097\phi_{use}}$ =		N/A
	Lamps operating on external high-intensity discharge lamp control gear	$P_{rated} \times 1,10 =$		N/A
	Compact fluorescent lamps with colour rendering index ≥ 90	$P_{rated} \times 0,85 =$		N/A
	Lamps with anti-glare shield	$P_{rated} \times 0,80 =$		N/A
	P_{ref} is the reference power obtained from the useful luminous flux of the lamp (ϕ_{use}) by the following formula:			N/A
	For models with $\phi_{use} < 1\,300$ lumen	$P_{ref} = 0,88\sqrt{\phi_{use}} + 0,049\phi_{use}$ =		N/A
	For models with $\phi_{use} \geq 1\,300$ lumen	$P_{ref} = 0,07341\phi_{use} =$		N/A
1.1.2	The maximum EEI of directional lamps is indicated below:			N/A
	Stage 1	Mains-voltage filament lamps If $\phi_{use} > 450$ lm: 1,75		N/A
	Stage 1	Other filament lamps: If $\phi_{use} \leq 450$ lm: 1,20 If $\phi_{use} > 450$ lm: 0,95		N/A
		High-intensity discharge lamps: 0,50		N/A
		Other lamps: 0,50		N/A



(EU) No 1194/2012

Clouse	Ecodesign requirement	Test Result	Verdict
	Stage 2	Mains-voltage filament lamps: 1,75	N/A
		Other filament lamps:0,95	N/A
		High-intensity discharge lamps:0,50	N/A
		Other lamps: 0,50	N/A
	Stage 3	Mains-voltage filament lamps: 0,95	N/A
		Other filament lamps:0,95	N/A
		High-intensity discharge lamps:0,36	N/A
		Other lamps: 0,20	N/A
1.2	Energy efficiency requirements for lamp control gear		N/A
	As from stage 2, the no-load power of a lamp control gear intended for use between the mains and the switch for turning the lamp load on/off shall not exceed 1,0 W		N/A
	As from stage 3, the limit shall be 0,50 W. For lamp control gear with output power (P) over 250 W, the no-load power limits shall be multiplied by P/250 W		N/A
	As from stage 3, the standby power of a lamp control gear shall not exceed 0,50 W		N/A
	As from stage 2, the efficiency of a halogen lamp control gear shall be at least 0,91 at 100 % load		N/A
2	FUNCTIONALITY REQUIREMENTS		N/A
2.1	Functionality requirements for directional lamps other than LED lamps		N/A
2.1.1	Functionality requirements for directional compact fluorescent lamps		N/A
2.1.1.1	Lamp survival factor at 6000 h		N/A
	Stage 1 , From 1 March 2014: $\geq 0,50$		N/A
	Stage 3, $\geq 0,70$		N/A
2.1.1.2	Lumen maintenance		N/A
	Stage 1 , At 2 000 h: $\geq 80 \%$		N/A
	Stage 3, At 2 000 h: $\geq 83 \%$ At 6 000 h: $\geq 70 \%$		N/A
2.1.1.3	Number of switching cycles before failure		N/A



(EU) No 1194/2012

Clouse	Ecodesign requirement	Test Result	Verdict
	Stage 1, \geq half the lamp lifetime expressed in hours		N/A
	Stage 1, \geq 10 000 if lamp starting time $>$ 0,3 s		N/A
	Stage 3, \geq lamp lifetime expressed in hours		N/A
	Stage 3, \geq 30 000 if lamp starting time $>$ 0,3 s		N/A
2.1.1.4	Starting time		N/A
	Stage 1, $<$ 2,0 s		N/A
	Stage 3, $<$ 1,5 s if $P <$ 10 W		N/A
	Stage 3, $<$ 1,0 s if $P \geq$ 10 W		N/A
2.1.1.5	Lamp warm-up time to 60 % Φ		N/A
	$<$ 40 s		N/A
	$<$ 100 s for lamps containing mercury in amalgam form		N/A
2.1.1.6	Premature failure rate		N/A
	Stage 1, \leq 5,0 % at 500 h		N/A
	Stage 3, \leq 5,0 % at 1 000 h		N/A
2.1.1.7	Lamp power factor		N/A
	\geq 0,50 if $P <$ 25 W		N/A
	\geq 0,90 if $P \geq$ 25 W		N/A
2.1.1.8	Colour rendering (Ra)		N/A
	\geq 80		N/A
	\geq 65 if the lamp is intended for outdoor or industrial applications according to point 3.1.3(l) of this Annex		N/A
2.1.2	Functionality requirements for other directional lamps (excluding LED lamps, compact fluorescent lamps and high-intensity discharge lamps)		N/A
2.1.2.1	Rated lamp lifetime at 50 % lamp survival		N/A
	Stage 1 and 2, \geq 1 000 h (\geq 2 000 h in stage 2)		N/A
	Stage 1 and 2, \geq 2 000 h for extra low voltage lamps not complying with the stage 3 filament lamp efficiency requirement in point 1.1 of this Annex		N/A
	Stage 3, \geq 2 000 h		N/A



(EU) No 1194/2012

Clouse	Ecodesign requirement	Test Result	Verdict
	Stage 3, $\geq 4\ 000$ h for extra low voltage lamps		N/A
2.1.2.2	Lumen maintenance		N/A
	$\geq 80\%$ at 75 % of rated average lifetime		N/A
2.1.2.3	Number of switching cycles		N/A
	\geq four times the rated lamp life expressed in hours		N/A
2.1.2.4	Starting time		N/A
	$< 0,2$ s		N/A
2.1.2.5	Lamp warm-up time to 60 % Φ		N/A
	$\leq 1,0$ s		N/A
2.1.2.6	Premature failure rate		N/A
	Stage 1 and 2, $\leq 5,0\%$ at 100 h		N/A
	Stage 3, $\leq 5,0\%$ at 200 h		N/A
2.1.2.7	Lamp power factor		N/A
	$\geq 0,50$ if $P < 25$ W		N/A
	$\geq 0,90$ if $P \geq 25$ W		N/A
2.2	Functionality requirements for non-directional and directional LED lamps		P
2.2.1	Lamp survival factor at 6 000 h		P
	From 1 March 2014: $\geq 0,90$	1.0	P
2.2.2	Lumen Maintenance at 6 000 h		P
	From 1 March 2014: $\geq 0,80$	0.991	P
2.2.3	Number of switching cycles before failure		P
	$\geq 15\ 000$ if rated lamp life $\geq 30\ 000$ h	>15000	P
	Otherwise: \geq half the rated lamp life expressed in hours		N/A
2.2.4	Starting time		P
	$< 0,5$ s	0.44 s	P
2.2.5	Lamp warm-up time to 95 % Φ		P



(EU) No 1194/2012

Clouse	Ecodesign requirement	Test Result	Verdict
	< 2 s	1.66 s	P
2.2.6	Premature failure rate		P
	≤ 5,0 % at 1 000 h	0.0%	P
2.2.7	Colour rendering (Ra)		P
	≥ 80	82.3	N/A
	≥ 65 if the lamp is intended for outdoor or industrial applications in accordance with point 3.1.3(l) of this Annex		P
2.2.8	Colour consistency		P
	Variation of chromaticity coordinates within a six-step MacAdam ellipse or less	1.6	P
2.2.7	Lamp power factor		P
	P ≤ 2 W: no requirement		N/A
	2 W < P ≤ 5 W: PF > 0,4		N/A
	5 W < P ≤ 25 W: PF > 0,5		N/A
	P > 25 W: PF > 0,9	0.952	P
2.3	Functionality requirement for equipment designed for installation between the mains and the lamps		N/A
2.3.1	As from stage 2, equipment designed for installation between the mains and the lamps shall comply with state-of- the-art requirements for compatibility with lamps whose energy efficiency index is at most:		N/A
	0,24 for non-directional lamps		N/A
	0,40 for directional lamps		N/A
2.3.2	When a dimming control device is switched on at its lowest control setting for which the operated lamps consume power, the operated lamps shall emit at least 1 % of their luminous flux at full load.	No dimming control devices	N/A
2.3.3	When a luminaire is placed on the market and intended to be marketed to the end-users, and lamps that the end-user can replace are included with the luminaire, these lamps shall be of one of the two highest energy classes, according to Commission Delegated Regulation (EU) No 874/2012, with which the luminaire is labelled to be compatible.		N/A
3	PRODUCT INFORMATION REQUIREMENTS		N/A
3.1	Product information requirements for directional lamps		N/A



(EU) No 1194/2012

Clouse	Ecodesign requirement	Test Result	Verdict
	The following information shall be provided as from stage 1		N/A
	These information requirements do not apply to:		N/A
	Filament lamps not fulfilling the efficacy requirements of Stage 2		N/A
	LED modules when marketed as part of a luminaire from which they are not intended to be removed by the end-user.		N/A
3.1.1	Information to be displayed on the lamp itself		N/A
	For lamps other than high-intensity discharge lamps, the value and unit ('lm', 'K' and '°') of the nominal useful luminous flux, of the colour temperature and of the nominal beam angle shall be displayed in a legible font on the surface of the lamp if, after the inclusion of safety-related information such as power and voltage, there is sufficient space available for it on the lamp without unduly obstructing the light coming from the lamp.		N/A
	If there is room for only one of the three values, the nominal useful luminous flux shall be provided.		N/A
	If there is room for two values, the nominal useful luminous flux and the colour temperature shall be provided.		N/A
3.1.2	Information to be visibly displayed to end-users, prior to their purchase, on the packaging and on free access websites		N/A
a)	Nominal useful luminous flux displayed in a font at least twice as large as any display of the nominal lamp power		N/A
b)	Nominal life time of the lamp in hours (not longer than the rated life time)		N/A
c)	Colour temperature, as a value in Kelvins and also expressed graphically or in words		N/A
d)	Number of switching cycles before premature failure		N/A
e)	Warm-up time up to 60 % of the full light output (may be indicated as 'instant full light' if less than 1 second)		N/A
f)	A warning if the lamp cannot be dimmed or can be dimmed only on specific dimmers; in the latter case a list of compatible dimmers shall be also provided on the manufacturer's website		N/A
g)	If designed for optimum use in non-standard conditions (such as ambient temperature $T_a \neq 25 \text{ }^\circ\text{C}$ or specific thermal management is necessary), information on those conditions		N/A
h)	Lamp dimensions in millimetres (length and diameter)		N/A



(EU) No 1194/2012

Clouse	Ecodesign requirement	Test Result	Verdict
i)	Nominal beam angle in degrees		N/A
j)	If the lamp's beam angle is $\geq 90^\circ$ and its useful luminous flux as defined in point 1.1 of this Annex is to be measured in a 120° cone, a warning that the lamp is not suitable for accent lighting		N/A
k)	If the lamp cap is a standardised type also used with filament lamps, but the lamp's dimensions are different from the dimensions of the filament lamp(s) that the lamp is meant to replace, a drawing comparing the lamp's dimensions to the dimensions of the filament lamp(s) it replaces		N/A
l)	An indication that the lamp is of a type listed in the first column of Table 6 may be displayed only if the luminous flux of the lamp in a 90° cone (Φ_{90°) is not lower than the reference luminous flux indicated in Table 6 for the smallest wattage among the lamps of the type concerned. The reference luminous flux shall be multiplied by the correction factor in Table 7. For LED lamps, it shall be in addition multiplied by the correction factor in Table 8		N/A
m)	An equivalence claim involving the power of a replaced lamp type may be displayed only if the lamp type is listed in Table 6 and if the luminous flux of the lamp in a 90° cone (Φ_{90°) is not lower than the corresponding reference luminous flux in Table 6. The reference luminous flux shall be multiplied by the correction factor in Table 7. For LED lamps, it shall be in addition multiplied by the correction factor in Table 8. The intermediate values of both the luminous flux and the claimed equivalent lamp power (rounded to the nearest 1 W) shall be calculated by linear interpolation between the two adjacent values		N/A
	If the lamp contains mercury:		N/A
n)	Lamp mercury content as X,X mg		N/A
o)	Indication of which website to consult in case of accidental lamp breakage to find instructions on how to clean up the lamp debris		N/A
3.1.3	Information to be made publicly available on free-access websites and in any other form the manufacturer deems appropriate		N/A
	As a minimum, the following information shall be expressed at least as values		N/A
a)	The information specified in point 3.1.2		N/A
b)	Rated wattage (0,1 W precision)		N/A
c)	Rated useful luminous flux		N/A



(EU) No 1194/2012

Clouse	Ecodesign requirement	Test Result	Verdict
d)	Rated lamp life time		N/A
e)	Lamp power factor		N/A
f)	Lumen maintenance factor at the end of the nominal life(except for filament lamps)		N/A
g)	Starting time (as X,X seconds);		N/A
h)	Colour rendering		N/A
i)	Colour consistency (only for LEDs)		N/A
j)	Rated peak intensity in candela (cd)		N/A
k)	Rated beam angle		N/A
l)	If intended for use in outdoor or industrial applications, an indication to this effect		N/A
m)	Spectral power distribution in the range 180-800 nm		N/A
	If the lamp contains mercury		N/A
n)	Instructions on how to clean up the lamp debris in case of accidental lamp breakage		N/A
o)	Recommendations on how to dispose of the lamp at the end of its life for recycling in line with Directive 2012/19/EU of the European Parliament and of the Council		N/A
3.2	Additional product information requirements for LED lamps replacing fluorescent lamps without integrated ballast		N/A
	Claims that an LED lamp replaces a fluorescent lamp without integrated ballast of a particular wattage may be made only if:		N/A
	The luminous intensity in any direction around the tube axis does not deviate by more than 25 % from the average luminous intensity around the tube, and		N/A
	The luminous flux of the LED lamp is not lower than the luminous flux of the fluorescent lamp of the claimed wattage. The luminous flux of the fluorescent lamp shall be obtained by multiplying the claimed wattage with the minimum luminous efficacy value corresponding to the fluorescent lamp in Commission Regulation (EC) No 245/2009 (1), and		N/A
	The wattage of the LED lamp is not higher than the wattage of the fluorescent lamp it is claimed to replace		N/A
3.3	Product information requirements for equipment other than luminaires, designed for installation between the mains and the lamps		N/A



(EU) No 1194/2012

Clouse	Ecodesign requirement	Test Result	Verdict
	As from stage 2, if the equipment provides no compatibility with any of the energy-saving lamps according to part 2.3 of this Annex, a warning that the equipment is not compatible with energy-saving lamps shall be published on publicly available free-access websites and in other forms the manufacturer deems appropriate.		N/A
3.4	Product information requirements for lamp control gears		N/A
	As from stage 2, the following information shall be published on publicly available free access websites and in other forms the manufacturer deems appropriate		N/A
	— Indication that the product is intended to be used as a lamp control gear		N/A
	— If applicable, the information that the product may be operated in no-load mode.		N/A

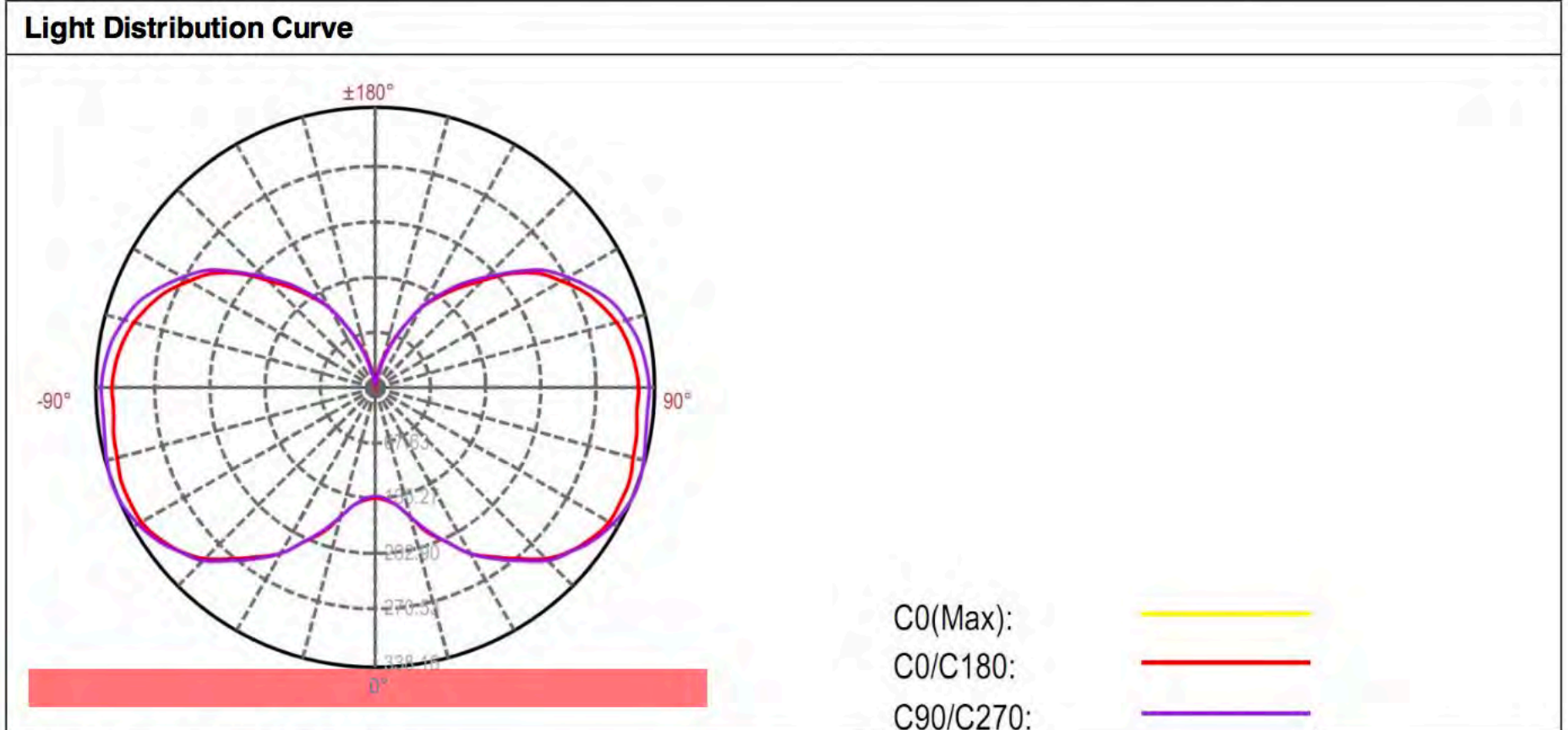
Test Data Summary(LED Lamps)							
No	Power	PF	Ra	SDCM	Starting time (s)	Warm-up time to 95% Φ (s)	Switching cycles
S1	27.29	0.950	82.2	1.7	0.41	1.10	>15000
S2	26.95	0.949	82.5	1.0	0.42	1.50	>15000
S3	27.04	0.954	82.4	1.5	0.46	1.60	>15000
S4	26.68	0.953	82.5	1.4	0.40	1.20	>15000
S5	27.47	0.954	82.2	1.4	0.47	1.60	>15000
S6	27.25	0.954	82.1	1.7	0.44	1.80	>15000
S7	27.63	0.952	82.1	1.4	0.48	1.90	>15000
S8	27.13	0.950	82.1	1.4	0.40	1.00	>15000
S9	27.27	0.955	82.1	1.5	0.46	1.70	>15000
S10	27.25	0.946	82.0	1.9	0.48	1.80	>15000
S11	27.44	0.951	82.3	1.7	0.42	1.60	>15000
S12	26.75	0.954	82.5	1.9	0.41	1.65	>15000
S13	27.28	0.955	82.3	2.8	0.49	1.95	>15000
S14	27.22	0.954	82.5	1.7	0.48	1.86	>15000
S15	27.50	0.953	82.0	1.7	0.46	1.85	>15000
S16	27.26	0.953	82.4	1.6	0.42	1.75	>15000
S17	27.31	0.947	82.6	1.6	0.45	1.92	>15000
S18	27.24	0.950	82.2	1.8	0.48	1.87	>15000
S19	27.04	0.953	82.7	1.4	0.42	1.95	>15000
S20	27.11	0.953	82.2	1.7	0.46	1.56	>15000
Avg	27.21	0.952	82.3	1.6	0.44	1.66	>15000

Test Data Summary-Con.(LED Lamps)							
No	Initial lumen flux(lm)	Lumen efficacy(lm/w)	Φ_{used}	lumen flux at 6000h(lm)	Lumen Maintenance	Premature failure at 1000h or not	Lamp survival at 6000h
S1	3255.50	119.29	3255.50	3243.08	99.6%	No	Survival
S2	3268.20	121.27	3268.20	3267.15	100.0%	No	Survival
S3	3283.58	121.43	3283.58	3246.71	98.9%	No	Survival
S4	3221.98	120.76	3221.98	3234.30	100.4%	No	Survival
S5	3274.98	119.22	3274.98	3216.82	98.2%	No	Survival
S6	3317.86	121.76	3317.86	3288.07	99.1%	No	Survival
S7	3306.97	119.69	3306.97	3247.00	98.2%	No	Survival
S8	3314.14	122.16	3314.14	3347.28	101.0%	No	Survival
S9	3275.17	120.10	3275.17	3198.49	97.7%	No	Survival
S10	3338.01	122.50	3338.01	3280.90	98.3%	No	Survival
S11	3341.74	121.78	3341.74	3279.95	98.2%	No	Survival
S12	3210.90	120.03	3210.90	3226.66	100.5%	No	Survival
S13	3183.02	116.68	3183.02	3115.40	97.9%	No	Survival
S14	3317.86	121.89	3317.86	3341.45	100.7%	No	Survival
S15	3257.70	118.46	3257.70	3198.39	98.2%	No	Survival
S16	3322.64	121.89	3322.64	3263.14	98.2%	No	Survival
S17	3290.07	120.47	3290.07	3232.68	98.3%	No	Survival
S18	3263.71	119.81	3263.71	3222.55	98.7%	No	Survival
S19	3251.97	120.27	3251.97	3268.68	100.5%	No	Survival
S20	3321.49	122.52	3321.49	3333.52	100.4%	No	Survival
Avg	3280.87	120.60	3280.87	3252.61	99.1%	Failure rate: 0%	Survival

Note: Φ_{used} is calculated by Initial lumen flux and Intensity distribution data.

Appendix 1: Intensity Distribution(LED Lamps)

Power(W)	Lumens(lm)	Beam angle(°)	Output flux ratio in π solid angle (%)	Output flux ratio in 90° solid angle (%)
26.93	3254.66	--	25.164	--



Zonal flux distribution table

Zone	Lumens	%Lamp	%Fixt	0-10	13.16
0-30	154.97	4.76%	4.76%	10-20	46.17
0-40	311.78	9.58%	9.58%	20-30	95.63
0-60	819.00	25.16%	25.16%	30-40	156.81
0-90	1826.70	56.13%	56.13%	40-50	223.91
90-120	934.99	28.73%	28.73%	50-60	283.31
90-130	1149.22	35.31%	35.31%	60-70	322.58
90-150	1379.92	42.40%	42.40%	70-80	340.29
90-180	1427.90	43.87%	43.87%	80-90	344.82
0-180	3254.65	100.00%	100.00%	90-100	341.21
				100-110	318.44
				110-120	275.34
				120-130	214.23
				130-140	144.74
				140-150	85.96
				150-160	38.06
				160-170	9.38
				170-180	0.54

Appendix 2: Sample Photos



Picture Over view

-----End of report-----