



TEST REPORT IES LM-79-08	
TÜV SÜD Test Report for Electrical and Photometric Measurements of Solid-State Lighting Products	
Report reference No. :	70.402.17.014.42-05
Date of issue :	2018-09-01
Project handler..... :	Mr. Kaishuang LI
Testing laboratory..... :	TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
Address :	No. 151 Hengtong Roadc, 200070, Shanghai,
Testing procedure :	<input type="checkbox"/> \$MTL <input type="checkbox"/> LTR
Testing location :	No. 1999, Duhui Road, Shanghai, 201108, P. R. China
Client :	Everlite LED Lighting Co., Limited 91783
Client number..... :	
Address :	Room 2105, Trend Centre, 29-31, Cheung Lee Street, Chaiwan, Hong Kong
Contact person..... :	Jackie ZHANG
Standard..... :	This TÜV SÜD test program is based on the following requirements: IES LM-79-08
TRF originated by..... :	TÜV SÜD Product Service GmbH, Mr. Kenneth Lau
Copyright blank test report..... :	This test report is based on the content of the standard (see above). The test report considered selected clauses of the a.m. standard(s) and experience gained with product testing. It was prepared by TÜV SÜD Product Service GmbH. TUV SUD Group takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.
Test procedure :	<input type="checkbox"/> TÜV Mark <input checked="" type="checkbox"/> without certification
Non-standard test method..... :	N/A
National deviations :	N/A
Number of pages (Report) :	18
Number of pages (Attachments)..... :	N/A
Compiled by..... :	Approved by..... :
(+ signature) Mr. Kaishuang LI	(+ signature) Ms. Lucy LU



Test sample	LED Luminaire (LED Street Light)	
Type of test object	Fixed	
Trade mark	N/A	
Model and/or type reference	EL-SL18LA-100W-4000K	
Lens type	TYPE II	
Rating(s)	220-240V AC, 50/60Hz, 100W, Class II, IP66	
Manufacturer	Ningbo Shishang Photoelectricity Technology Co., Ltd.	
Manufacturer number	92974	
Address	No.19, KeSan Road, Ninghai, 315600, Ningbo, Zhejiang, People's Republic of China	
Sub-contractors/ tests (clause)	N/A	
Name	N/A	
Order description	<input type="checkbox"/>	Complete test according to TRF
	<input checked="" type="checkbox"/>	Partial test according to manufacturer's specifications
	<input type="checkbox"/>	Preliminary test
	<input type="checkbox"/>	Spot check
	<input type="checkbox"/>	Other:
Date of order	2017-12-29	
Date of receipt of test item	2018-08-27	
Date(s) of performance of test	2018-08-31	
Test item particulars (declared):		
Lamp type :	<input type="checkbox"/> Bare lamp <input type="checkbox"/> Covered lamp, no reflector <input type="checkbox"/> Lamp with reflector <input checked="" type="checkbox"/> other: LED Street Light	
Lamp cap installed :	N/A	
Rated Voltage (V) :	220-240	
Rated Power (W) :	100	
Rated Power Factor :	N/A	
Rated Luminous Flux (lm) :	N/A	
Rated CCT (K) :	4000	
Rated CRI :	N/A	



Attachments:

1. Test Equipment List

General remarks:

"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

The test results presented in this report relate only to the object tested.

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Summary of testing:

☐ deviation(s) found

☒ no deviations found

The test was operated at 230V, 50Hz, in accordance with the applicant's instruction.

Model	Luminous Efficacy (Lumens/Watt)	Total Luminous Flux (Lumens)	Input Power (Watts)
EL-SL18LA-100W-4000K	151,92	15663,3	103,1
Power Factor	CCT (K)	CRI	Stabilisation Time (minutes)
0,9843	3997	72,2	90

Copy of marking plate:

Not provide



Picture of the product:



Characteristic data

Dimension (mm, Height x Width x Length): 260mm*380mm*830mm
Weight: approximately : 6,8Kg

Purpose of the product

LED Street light for generally lighting purpose.

Possible test case verdicts:

- test case does not apply to the test object:: N(.A.) / not included in the order
- test object does meet the requirement.....: P(ass)
- test object does not meet the requirement:: F(ail)

Possible suffixes to the verdicts:

- suffix for detailed information for the client.....:- C(omment)
- suffix for important information for factory inspection....: - M(anufacturing)

Clause	Requirement	Test	Measuring result	Remark	Verdict
2.0	Ambient Conditions				P
2.1	General				P
2.2	Air Temperature				P
2.3	Thermal Condition for Mounting SSL Products				P
2.4	Air Movement				P
3.0	Power Supply Characteristics				P
3.1	Waveshape of AC power supply				P
3.2	Voltage regulation				P
4.0	Seasoning of SSL Product		No seasoning of SSL product		P
5.0	Stabilisation of SSL Product		Sufficiently stabilised before measurement		P
6.0	Operation Orientation				P
	SSL product shall be stabilized and measured in intended operating orientation				P
7.0	Electrical Settings				P
	SSL product shall be operated at rated voltage				P
	SSL product with dimming capability are tested at maximum input power condition				N/A
	SSL product with different modes are measured in all relevant modes				N/A
8.0	Electrical Instrumentations				P
8.1	Circuits				P
8.2	Uncertainties				P
9.0	Test methods for Luminous Flux measurement				P
9.1	Integrating sphere with a spectroradiometer (Sphere-spectroradiometer system)				N/A
9.2	Integrating sphere with a photometer head (Sphere-photometer system)				N/A
9.3	Goniophotometer				P
10.0	Luminous Intensity Distribution				P
	Reporting acc. to IEC LM-63		See table 3		P
11.0	Luminous Efficacy		See table 1		P
12.0	Test Methods for Color Characteristics of SSL Products				P
	Measurements		See table 1		P
13.0	Uncertainty statement				P

Table 1	Test data			
Model	EL-SL18LA-100W-4000K			
Rated Voltage (V):		AC 220-240	Rated Power (W):	100
Rated luminous flux (lm):		N/A	Ambient temperature 25 ±1°C (°C):	25,3
Test item			Measured Value	
			Integrating Sphere	Goniophotometer
Key Photometric Results				
Luminous Efficacy (Lumens/Watt)			-	151,92
Total Luminous Flux (Lumens)			-	15663,3
Correlated Color Temperature (CCT)			3997	-
Color Rendering Index (CRI)			72,2	-
Chromaticity (Chroma x / Chroma y)			0,3824/0,3835	-
Chromaticity (Chroma u / Chroma v)			-	-
Chromaticity (Chroma u' / Chroma v')			0,2237/0,5048	-
Duv Value			0,0025	-
SDCM			1,36	-
Color Angular Uniformity (Max. du'v')			-	-
Stabilization Time (Light and Power) (Minutes)			90	
Total Run Time – Goniophotometer (Minutes)			150	
Spacing Criteria				C=15° / γ=1°
Electrical Input Results				
Input Power (Watts)			-	103,1
Input Voltage (Volts AC)			-	230,0
Input Current (Amps)			-	0,4551
Input Frequency (Hertz)			-	50,0
Power Factor			-	0,9843
A-THD (Current – Total Harmonic Distortion)			-	-
Additional Information				
Ambient Temperature (°C):			25,3	25,3
Photometric measurement condition			-	Photometric distance: 26m
Number of hours operated prior to measurement			0h	
Orientation (burning position)			Base up, center of the Goniophotometer	
Supplementary Information:				
- Absorbtion Correction used: Yes				
Stabilisation was considered reached by: the variation (maximum-minimum) of at least 3 readings				
- of the light output and electrical power over a period of 30 minutes is less than 0.5%.				

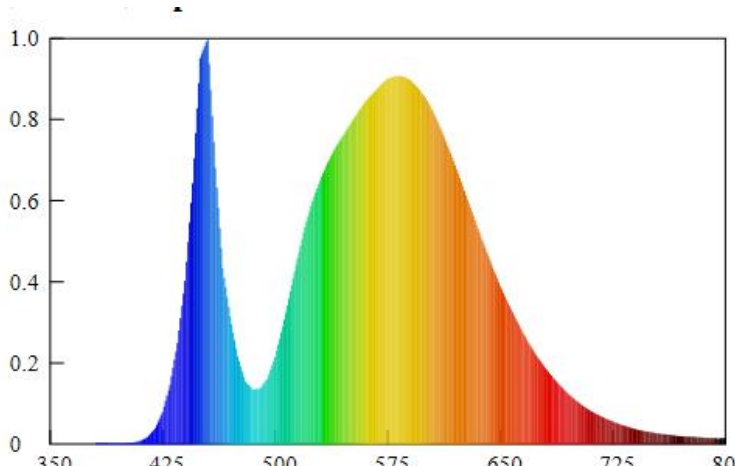
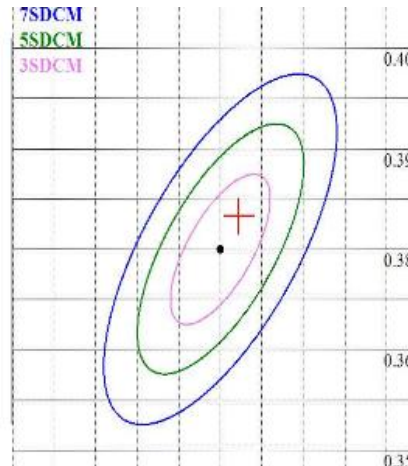
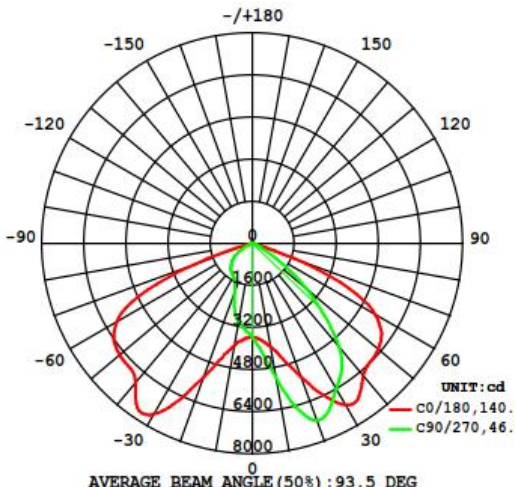
Table 2	SPECTRAL DISTRIBUTION and CHROMATICITY DIAGRAM- CIE 1931
Model	EL-SL18LA-100W-4000K
The following graph shows the spectral response curve of the radiant flux for the sample: (350nm to 780nm – calibrated range of the Spectroradiometer)	
<div>  <p>光谱分布 Spectral Distribution</p> </div> <div>  <p>7SDCM 5SDCM 3SDCM</p> <p>Nominal CCT:IEC_F4000 x0=0.3824 y0=0.3835</p> </div>	

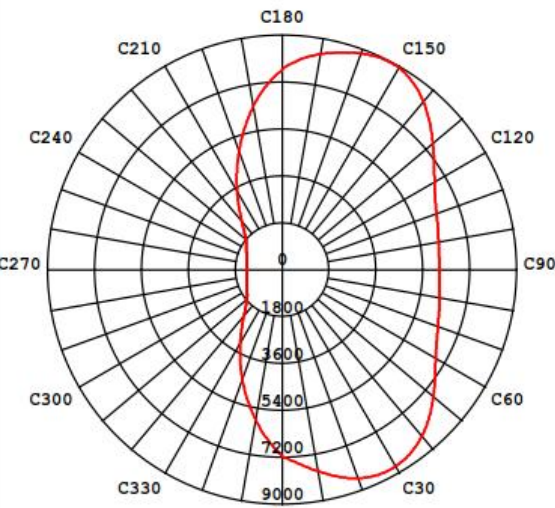
Table 3		LIGHT DISTRIBUTION DIAGRAM			
Model:		EL-SL18LA-100W-4000K			
DATA OF LAMP		PHOTOMETRIC DATA Eff: 151.92 lm/W			
MODEL		I _{max} (cd)	8959	η street_up (%)	0.0
NOMINAL POWER (W)		LOR (%)	100.0	η street_down (%)	68.6
RATED VOLTAGE (V)		TOTAL FLUX (lm)	15663.3	η house_up (%)	0.0
NOMINAL FLUX (lm)	15663.3	MAXIMUM @ (C, γ)	150,34.0	η house_down (%)	31.4
LAMPS INSIDE	1	η up (%)	0.0	76 FLASHAREA (m2)	
TEST VOLTAGE (V)	230	η down (%)	100.0	SLI	

**INTENSITY DISTRIBUTION DIAGRAM
IN C PLANS**



AVERAGE BEAM ANGLE (50%): 93.5 DEG

**MAX INTENSITY CONE SURFACE
DISTRIBUTION DIAGRAM**



HOUSE SIDE Max @ γ = 34.0DEG STREET SIDE

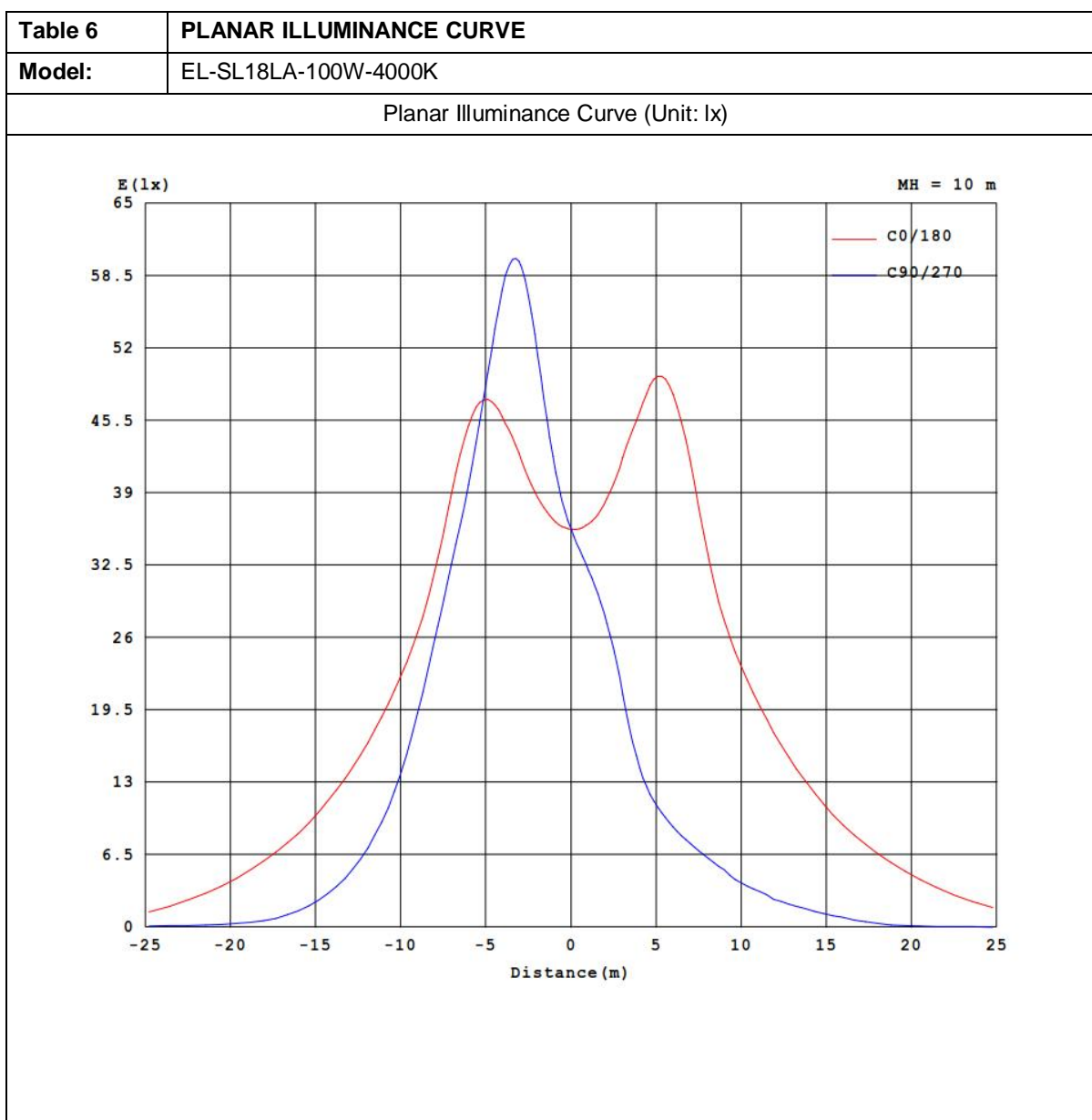
Table 4a		LUMINOUS DISTRIBUTION INTENSITY DATA (unit: cd)							
Model:		EL-SL18LA-100W-4000K							
$\gamma \backslash C$		0	15	30	45	60	75	90	105
0		3577.32	3577.32	3577.32	3577.32	3577.32	3577.32	3577.32	3577.32
5		4126.13	4099.63	4044.64	3944.19	3852.96	3744.90	3649.93	3561.64
10		5173.01	5112.34	4959.53	4694.91	4445.73	4159.87	3926.03	3743.14
15		6446.38	6376.50	6185.89	5836.84	5462.49	4987.41	4496.32	4113.77
20		7153.88	7167.54	7131.26	7054.44	6863.84	6244.10	5382.62	4567.13
25		6941.36	7076.30	7327.84	7833.04	8268.28	7869.14	6544.04	5010.03
30		6397.39	6581.59	7083.48	8080.43	8854.81	8724.00	7493.50	5523.76
35		5929.51	6081.97	6653.23	7946.23	8948.00	8542.93	7631.79	5610.08
40		5137.69	5360.40	6111.73	7585.66	8578.83	7942.31	6919.39	5229.70
45		3888.54	4185.11	5230.84	6989.59	8083.14	7783.09	6630.59	4830.32
50		2695.75	2870.65	3807.84	5956.79	7906.55	7821.46	6593.39	4388.01
55		1595.10	1682.10	2192.34	4259.97	7364.30	7758.04	6422.00	3756.33
60		666.31	731.20	967.61	2117.13	5823.17	7429.89	5963.52	2917.57
65		303.83	308.47	337.31	682.01	3319.56	6229.74	4771.68	1867.84
70		180.57	189.09	231.19	264.05	1279.04	3504.08	2347.19	867.07
75		104.09	107.10	133.70	198.61	496.47	858.33	376.73	264.54
80		27.20	35.64	44.27	68.04	112.86	131.94	64.65	57.94
85		1.62	1.42	1.83	1.75	2.15	2.81	2.36	2.13
90		0	0	0	0	0	0	0	0
95		0	0	0	0	0	0	0	0
100		0	0	0	0	0	0	0	0
105		0	0	0	0	0	0	0	0
110		0	0	0	0	0	0	0	0
115		0	0	0	0	0	0	0	0
120		0	0	0	0	0	0	0	0
125		0	0	0	0	0	0	0	0
130		0	0	0	0	0	0	0	0
135		0	0	0	0	0	0	0	0
140		0	0	0	0	0	0	0	0
145		0	0	0	0	0	0	0	0
150		0	0	0	0	0	0	0	0
155		0	0	0	0	0	0	0	0
160		0	0	0	0	0	0	0	0
165		0	0	0	0	0	0	0	0
170		0	0	0	0	0	0	0	0
175		0	0	0	0	0	0	0	0
180		0	0	0	0	0	0	0	0

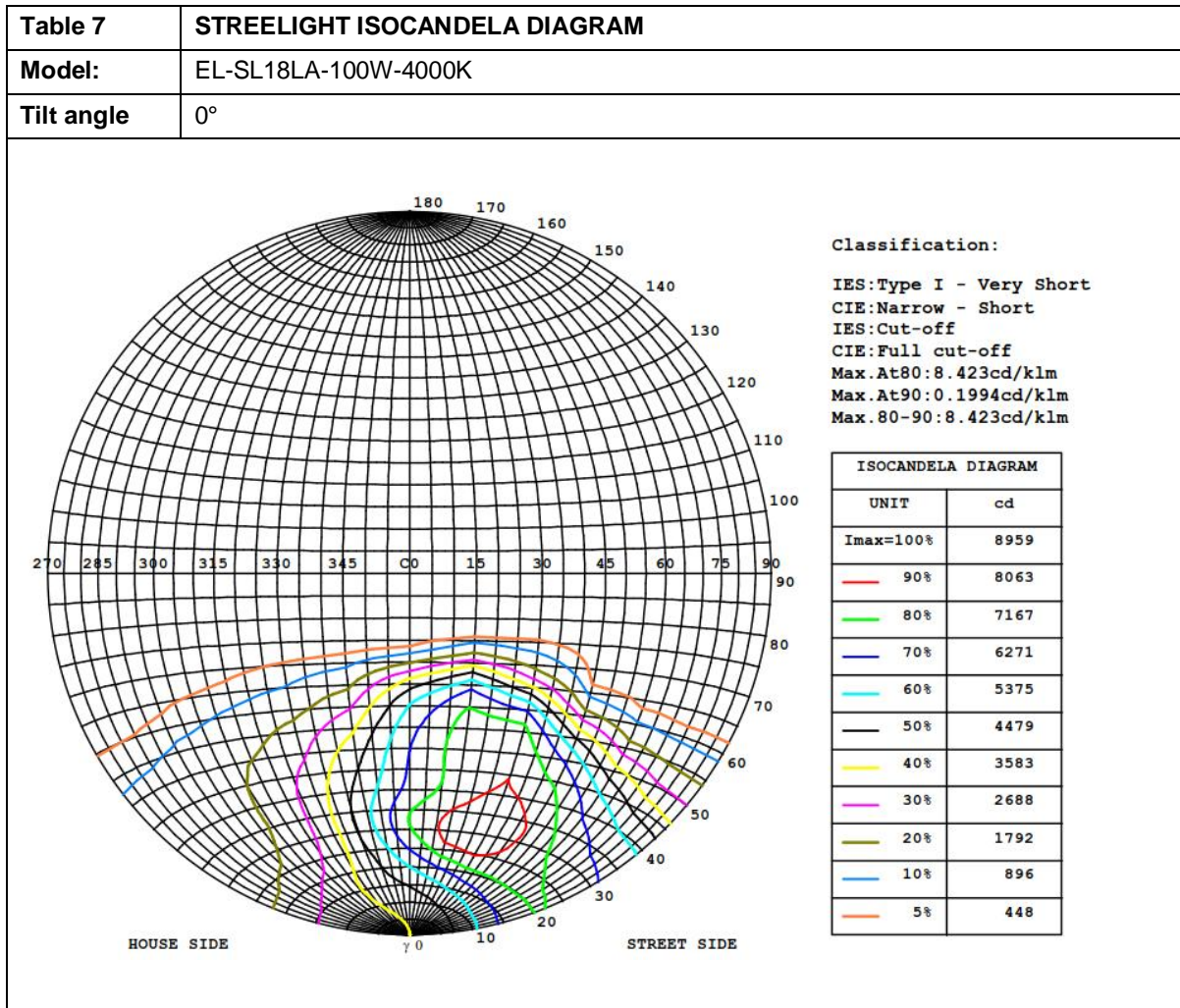
Table 4b		LUMINOUS DISTRIBUTION INTENSITY DATA (unit: cd)							
Model:		EL-SL18LA-100W-4000K							
$\gamma \backslash C$		120	135	150	165	180	195	210	225
0		3577.32	3577.32	3577.32	3577.32	3577.32	3577.32	3577.32	3577.32
5		3475.07	3409.90	3347.23	3313.75	3297.99	3316.72	3356.82	3418.80
10		3554.13	3376.76	3207.88	3096.08	3048.92	3090.87	3210.56	3380.58
15		3709.55	3307.09	2964.70	2722.00	2637.27	2701.46	2931.83	3264.41
20		3741.93	2989.12	2447.33	2108.64	2002.29	2083.04	2386.58	2877.72
25		3592.20	2547.93	1943.49	1671.63	1600.62	1664.75	1910.59	2440.21
30		3483.24	2199.51	1682.45	1495.22	1449.00	1496.41	1669.30	2112.11
35		3477.96	2070.84	1588.64	1409.50	1369.64	1408.22	1568.19	1986.03
40		3376.59	2099.85	1537.06	1341.58	1295.85	1330.29	1505.59	1998.60
45		3129.86	2071.14	1495.78	1183.67	1131.97	1158.61	1452.05	1953.95
50		2700.58	1914.58	1337.95	1079.16	961.04	1030.86	1277.04	1783.39
55		2188.29	1506.67	1100.23	882.31	775.33	831.40	1040.24	1424.04
60		1626.99	1078.31	807.81	557.44	409.72	467.05	724.39	1026.63
65		1029.20	699.02	470.32	214.00	113.04	155.96	405.09	630.65
70		565.27	360.48	218.19	81.37	69.89	67.54	182.80	307.81
75		216.18	157.31	92.51	54.96	20.85	46.47	66.58	130.34
80		44.68	67.67	41.25	6.95	0.83	2.14	27.40	46.78
85		1.52	0.84	0.32	0.27	0.39	0.28	0.34	0.77
90		0	0	0	0	0	0	0	0
95		0	0	0	0	0	0	0	0
100		0	0	0	0	0	0	0	0
105		0	0	0	0	0	0	0	0
110		0	0	0	0	0	0	0	0
115		0	0	0	0	0	0	0	0
120		0	0	0	0	0	0	0	0
125		0	0	0	0	0	0	0	0
130		0	0	0	0	0	0	0	0
135		0	0	0	0	0	0	0	0
140		0	0	0	0	0	0	0	0
145		0	0	0	0	0	0	0	0
150		0	0	0	0	0	0	0	0
155		0	0	0	0	0	0	0	0
160		0	0	0	0	0	0	0	0
165		0	0	0	0	0	0	0	0
170		0	0	0	0	0	0	0	0
175		0	0	0	0	0	0	0	0
180		0	0	0	0	0	0	0	0

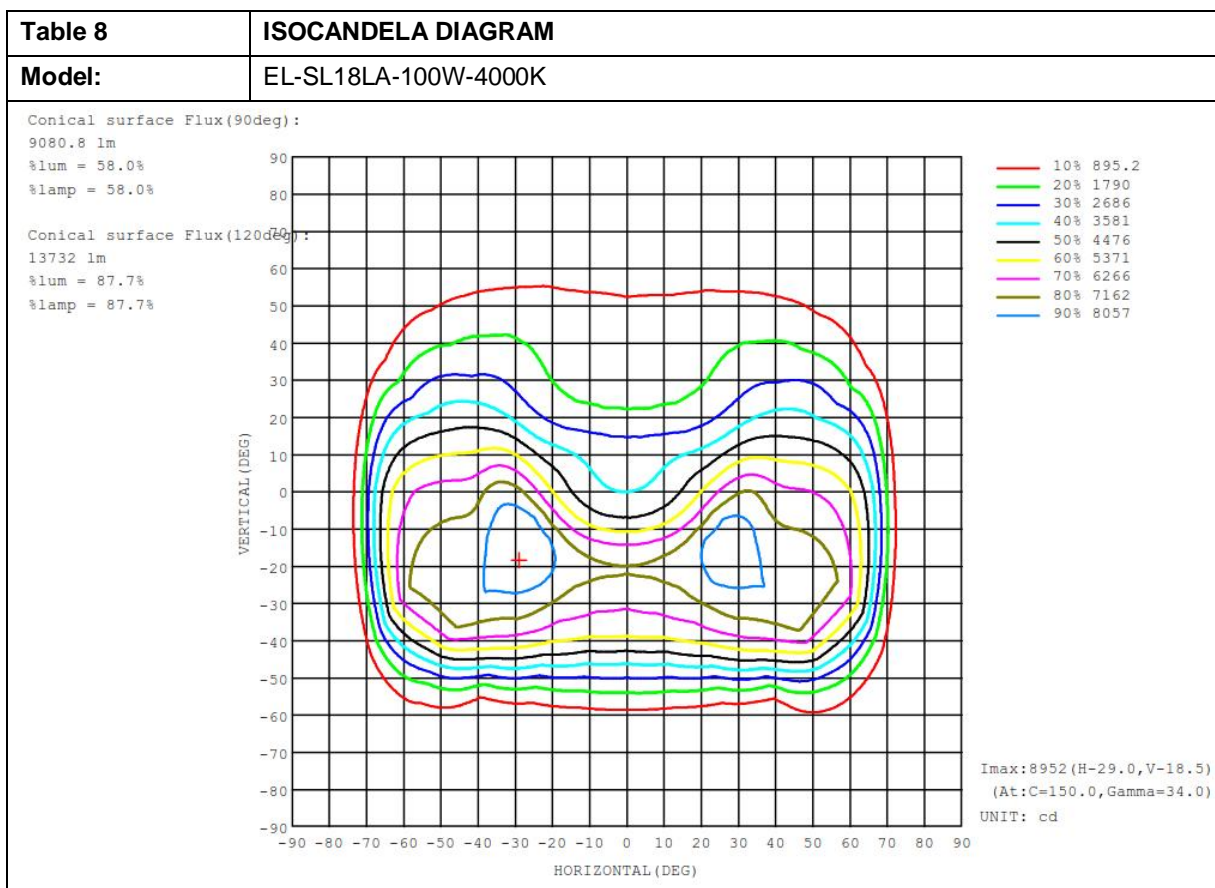
Table 4c		LUMINOUS DISTRIBUTION INTENSITY DATA (unit: cd)							
Model:		EL-SL18LA-100W-4000K							
$\gamma \backslash C$		240	255	270	285	300	315	330	345
0		3577.32	3577.32	3577.32	3577.32	3577.32	3577.32	3577.32	3577.32
5		3496.90	3578.93	3679.71	3771.11	3879.01	3968.24	4059.47	4101.75
10		3577.12	3772.59	3991.53	4223.88	4513.55	4763.63	4994.89	5109.21
15		3685.09	4107.96	4558.33	5040.43	5515.16	5895.34	6223.02	6388.80
20		3611.43	4456.33	5384.19	6199.91	6853.04	7095.63	7184.73	7180.82
25		3414.75	4790.85	6343.19	7687.19	8166.62	7817.40	7354.78	7079.43
30		3284.60	5123.69	7084.03	8377.20	8638.36	7997.24	7109.60	6637.87
35		3241.51	5150.71	7087.92	8115.26	8698.52	7910.40	6701.66	6124.09
40		3138.43	4855.61	6564.91	7604.31	8342.65	7537.80	6175.94	5398.27
45		2915.97	4496.79	6366.76	7563.84	8035.51	7007.91	5328.40	4222.20
50		2542.59	4049.59	6253.00	7642.06	7919.42	6079.63	3911.05	2887.29
55		2083.28	3422.26	6000.94	7569.74	7497.09	4474.03	2251.31	1690.72
60		1449.91	2579.21	5409.68	7144.81	6144.59	2271.26	988.89	725.44
65		924.70	1585.70	4066.19	5867.14	3689.89	723.66	344.71	307.82
70		497.91	725.64	1704.65	3110.60	1518.32	286.94	234.81	187.69
75		167.54	193.18	270.85	730.88	512.78	191.36	131.76	103.69
80		31.70	44.21	44.26	110.29	102.43	56.70	38.02	31.92
85		1.42	2.50	2.34	2.53	2.62	1.96	1.62	2.02
90		0	0	0	0	0	0	0	0
95		0	0	0	0	0	0	0	0
100		0	0	0	0	0	0	0	0
105		0	0	0	0	0	0	0	0
110		0	0	0	0	0	0	0	0
115		0	0	0	0	0	0	0	0
120		0	0	0	0	0	0	0	0
125		0	0	0	0	0	0	0	0
130		0	0	0	0	0	0	0	0
135		0	0	0	0	0	0	0	0
140		0	0	0	0	0	0	0	0
145		0	0	0	0	0	0	0	0
150		0	0	0	0	0	0	0	0
155		0	0	0	0	0	0	0	0
160		0	0	0	0	0	0	0	0
165		0	0	0	0	0	0	0	0
170		0	0	0	0	0	0	0	0
175		0	0	0	0	0	0	0	0
180		0	0	0	0	0	0	0	0



Table 5		ZONAL FLUX DIAGRAM										
Model:		EL-SL18LA-100W-4000K										
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lamp
10	3992	4764	5173	4695	3926	3377	3049	3381	0- 10	363.5	363.5	2.32
20	5384	7096	7154	7054	5383	2989	2002	2878	10- 20	1305	1668	10.7
30	7084	7997	6397	8080	7494	2200	1449	2112	20- 30	2435	4103	26.2
40	6565	7538	5138	7586	6919	2100	1296	1999	30- 40	3249	7352	46.9
50	6253	6080	2696	5957	6593	1915	961.0	1783	40- 50	3438	10790	68.9
60	5410	2271	666.3	2117	5964	1078	409.7	1027	50- 60	2942	13732	87.7
70	1705	286.9	180.6	264.1	2347	360.5	69.89	307.8	60- 70	1607	15339	97.9
80	44.26	56.70	27.20	68.04	64.65	67.67	0.1990	46.78	70- 80	313.9	15652	99.9
90	2.451	1.115	0.6086	0.6990	2.054	0.7085	0.2575	0.6407	80- 90	10.88	15663	100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd Less than 25% Percent = 20.1 %									UNIT:lm		







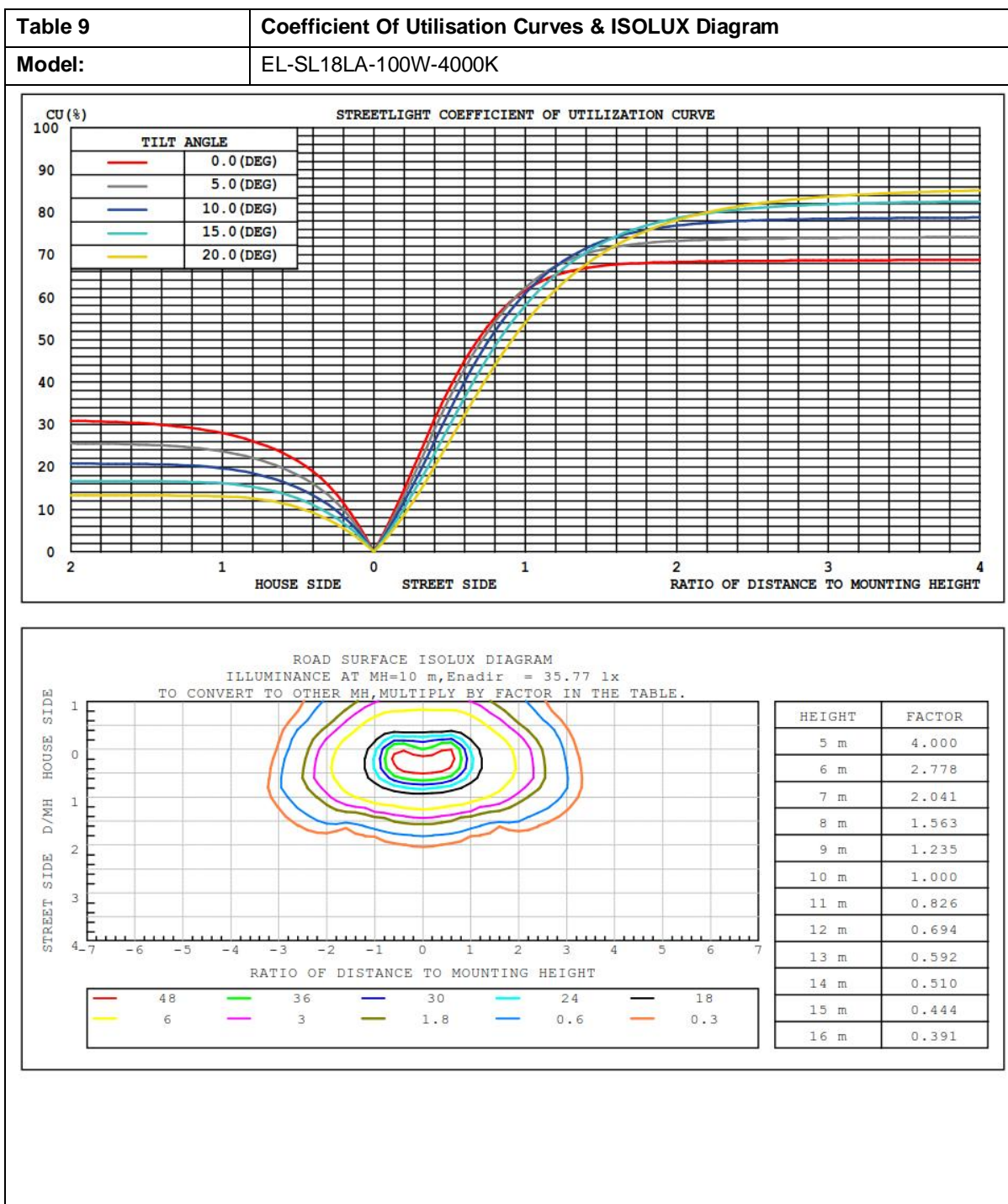
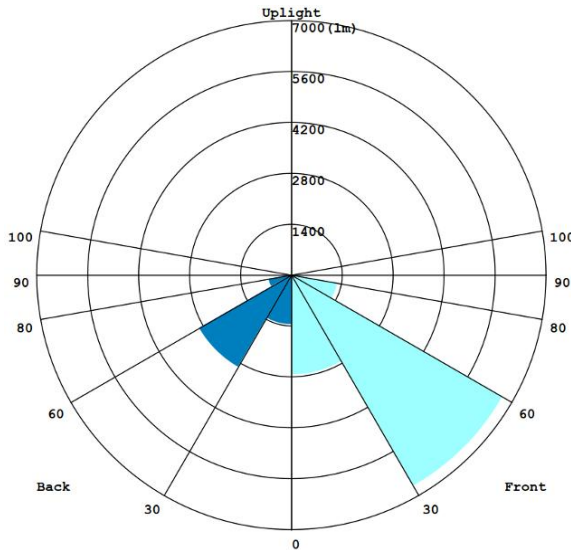




Table 10	LCS
Model:	EL-SL18LA-100W-4000K



IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	2606.7	17.0
FM - Front-Medium(30-60)	6760.3	44.2
FH - Front-High(60-80)	1390.8	9.1
FVH - Front-Very High(80-90)	12.502	0.1
Total Forward Light	10770	70.4
BL - Back-Low(0-30)	1303.1	8.5
BM - Back-Medium(30-60)	2694.6	17.6
BH - Back-High(60-80)	530.31	3.5
BVH - Back-Very High(80-90)	3.4493	0.0
Total Back Light	4531.4	29.6
UL - Uplight-Low(90-100)	0	0.0
UH - Uplight-High(100-180)	0	0.0
Total Up Light	0	0.0

BUG(Back,Up,Glare) Rating	B3-U0-G2
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	10770	0	10770
Street Side	4531.4	0	4531.4

Attachment 1: Equipment List

No.	Type	Manufacture	Model	Equipment ID	Next Calibration
1	Full-field Speed Goniophotometer	Everfine	GO-R5000	S1207714-YQ	May. 18.2019
2	High-accuracy Digital Photometer Head	Everfine	ID-1000_P-B/ID-1000_P-C	S1207714a-YQ	May. 18.2019
3	High-accuracy Digital Photometer Head	Everfine	ID-1000_P-B/ID-1000_P-C	S1207714b-YQ	May. 18.2019
4	High Accuracy Array Spectroradio Meter	Labsphere	CDS-600	S1312826-YQ	May. 18.2019
5	Standard Light Source	Everfine	D908	S1207714d-YQ	May. 18.2019
6	Digital Power Meter	Yokogawa	WT310	S1310805-YQ	May. 18.2019
7	Digital CC & CV DC Power Supply	Everfine	WY12010	S1207714f-YQ	May. 18.2019
8	Intelligent AC Power Source	Everfine	DPS1060	S1207714g-YQ	May. 18.2019
10	DC Power Supply	Everfine	WY3010	S1108624-YQ	May. 18.2019
11	Flux Reference Lamp	Labsphere	SCL-1400	S1602991-YQ	May. 18.2019
12	luminance Source	Everfine	SLS-150	S1108626-YQ	May. 18.2019
13	Thermometer	Fluke	Fluke 52-II	S0712414-YQ	May. 18.2019

-- END OF TEST REPORT --