



Prüfbericht <i>Test report</i>			Auftragsnr. / order no.: 244268555 Berichtsnr. / report no.: 60397061 001		
Auftraggeber <i>client:</i>			Auftragsdatum / <i>date of order:</i> 23.09.2020		
NISKO GROUP LTD. 41 HAMAAYAN MODI'IN, Israel.			AG-Referenz-Nr. / <i>client reference no.:</i> -		
Inhalt des Auftrags <i>content of order:</i>			Electrical and Photometric Measurement to LM-79-08		
Prüfgrundlagen <i>test specifications:</i>			IES LM-79-08		
Prüfgegenstand <i>test item:</i>			LED Street Light		
Bezeichnung <i>identification:</i>			EL-SL18LA-120W CLASS I T2STF 3000K		
Eingang Prüfgegenstand <i>receipt of test item:</i>			23.09.2020		
Prüfgegenstands-Nr. <i>test item no.:</i>			A002073542-013		
Prüfzeitraum und -ort <i>period of test and location:</i>			23.09.2020-28.08.2020, Shanghai Xingshang Photoelectric technology Co., Ltd		
Prüflaboratorium <i>testing laboratory:</i>			TÜV Rheinland (Shanghai) Co., Ltd.		
Prüfergebnis <i>test result *):</i>			N/A		
Sonstiges / other aspects:			<i>Tests at client's request and there is only test data available in this report and no further ratings for test result. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government..</i>		
geprüft / tested by:			kontrolliert / reviewed by:		
06.11.2020 Fernando Dai /PE			06.11.2020 Alex Yan /Reviewer		
					
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. Dieser Prüfbericht wird neben der Dokumentation der Einzelergebnisse durch eine Bewertung des Produktes ergänzt. Diese Bewertung stützt sich nicht in jedem Fall auf ein durchgängiges Punkte- oder Bewertungssystem, wohl aber auf die Erfahrung der Experten des TÜV Rheinland. Die Bewertung ist keine rechtsverbindliche Interpretation der Mängelfreiheit eines Produktes.</p> <p>This test report relates to the a. m. test sample. Without permission of the testing laboratory this report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety or other mark on this product. Besides single test results this test report contains an assessment of the product. This assessment is not always based on a continuous rating system, but on experience of the experts of TÜV Rheinland Group. This assessment is not a legally binding interpretation of the flawlessness of the product.</p>					

General Remarks:

Factory: NINGBO SKYZON ENERGY CO., LTD
Address: No.19, Ke San Road, Ninghai 315600, Ningbo China

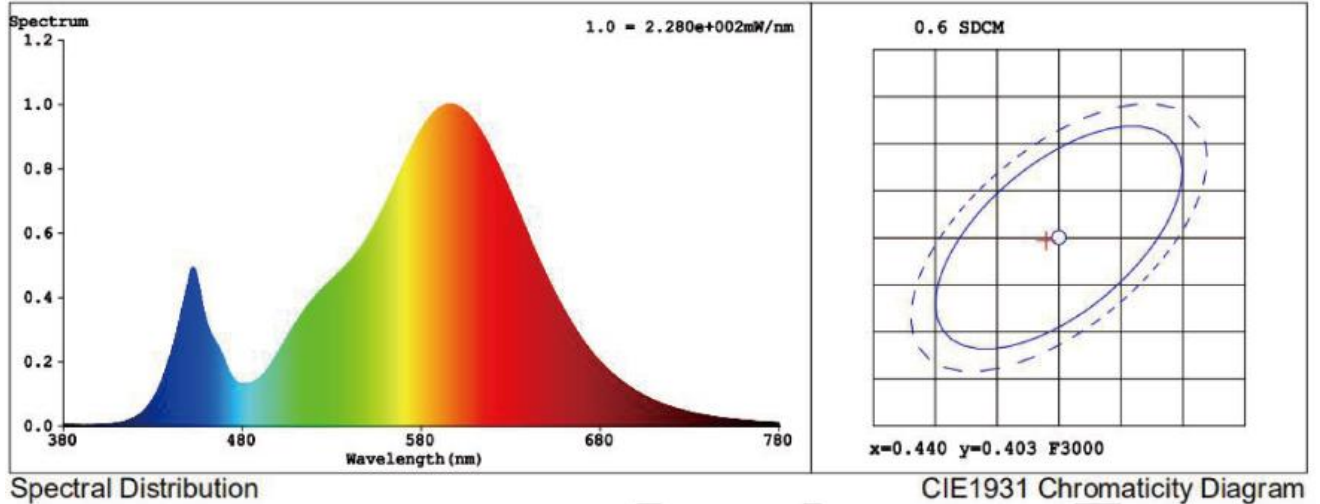
Product Information

Model name	Sample number	Rated voltage, frequency (V, Hz)	Nominal CCT (K)	Rated Wattage (W)	Type of LED Chip
EL-SL18LA-120W CLASS I T2STF 3000K	A002073542-013	200-240Vac, 50/60Hz	3000K	120W	LUMILEDS LUXEON 5050- L15030705006000 00 14S2P 2MODULE

Test conditions:	
Number of hours operated prior to measurement	<u>0</u> hours
Total operating time of the product for measurements including stabilization	<u>2</u> hours and <u>30</u> minutes
Ambient	25 °C
Orientation	As normal use
Stabilization time	<u>90</u> minutes
Test method	Type C Gonio-photometer with moving mirror was used for photometric measurement (C- γ system)
Designation and type of reference standard lamp	For standard luminous flux lamp Current: 1.389A Reference luminous flux: 4310 lm Lamp type: Filament lamp Intensity distribution type: Omni-directional
	For standard luminous intensity lamp: Current: 9.6217A Reference luminous intensity: 571.9 cd Lamp type: Tungsten halogen lamp Intensity distribution type: Omni-directional
Correction factor applied	N/A
Photometric distance	3.0m for photometric measurement
	8.98m for luminous intensity measurement

Measured Results	
	EL-SL18LA-120W CLASS I T2STF 3000K
Total luminous flux (lm)	17357
Input wattage (W)	119.92
Input current (A)	0.5536
Frequency (Hz)	50
Power factor	0.9850
Efficacy (Lm/W)	144.74
CCT (K)	2954
Chromaticity x	0.4390
Chromaticity y	0.4027
Chromaticity u'	0.2525
Chromaticity v'	0.5211
CRI	74
R9	0
Du'v' (Max.)	-0.000836
THDI(%)	5.103
LCS BUG Rating	B3-U0-G2, Full cut-off

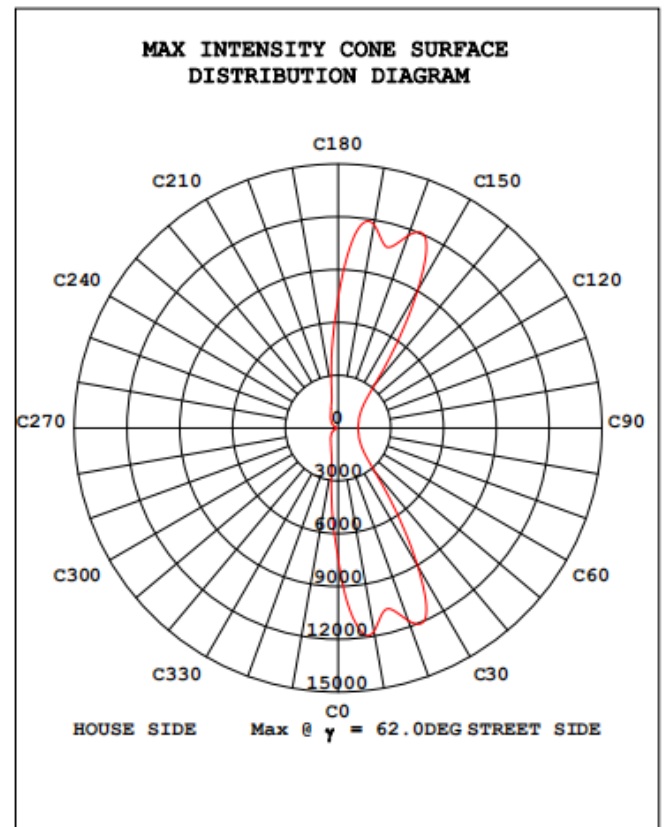
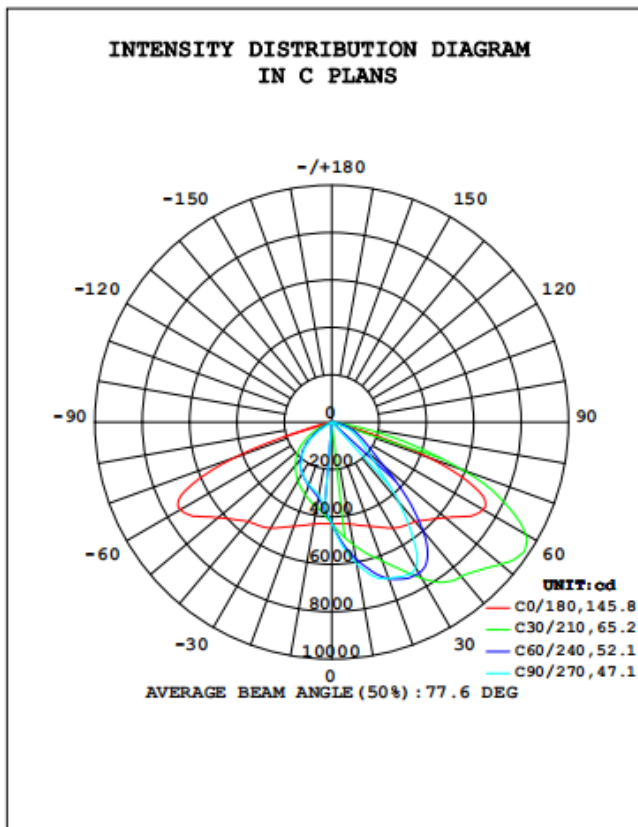
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Spectral power distribution: (Clause 10 of LM-79)
EL-SL18LA-120W CLASS I T2STF 3000K

Dominant WL: 583.3nm
Peak WL: 598nm
Luminous Intensity Distribution, Ambient temperature: 25°C (Clause 10 of LM-79)

Description	Data
Model	EL-SL18LA-120W CLASS I T2STF 3000K
Test voltage (V)	220VAC
Test current (A)	0.5536
Test wattage (W)	119.92
Frequency (Hz)	50
Power factor	0.9850
Central luminous intensity (cd)	4287
Max. luminous intensity(cd)	11810.21 (C=65, Gamma=62)

For the distribution curve see next page.
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DATA OF LAMP		PHOTOMETRIC DATA Eff: 144.74 lm/W			
MODEL	EL-SL18LA	I _{max} (cd)	11810.21	η street_up(%)	0.0
NOMINAL POWER(W)	120	LOR(%)	100.0	η street_down(%)	75.0
RATED VOLTAGE(V)	220-240	TOTAL FLUX(lm)	17357	η house_up(%)	0.0
NOMINAL FLUX(lm)	17357.3	MAXIMUM @ (C, γ)	65, 62.0	η house_down(%)	25.0
LAMPS INSIDE	1	η up(%)	0.0	76 FLASHAREA(m2)	0.05000
TEST VOLTAGE (V)	220	η down(%)	100.0	SLI	20.721



Zonal Lumen Summary and Percentages**Zonal Lumen Summary**

Zone	Lumens	%Lamp	%Fixt
0-20	1752.77	10.10	10.10
0-30	4053.00	23.40	23.40
0-40	7127.28	41.10	41.10
0-60	13543.32	78.00	78.00
0-80	17297.49	99.70	99.70
0-90	17357.35	100.00	100.00
10-90	16936.64	97.60	97.60
20-40	5374.51	31.00	31.00
20-50	8621.62	49.70	49.70
40-70	9122.86	52.60	52.60
60-80	3754.19	21.60	21.60
70-80	1047.38	6.00	6.00
80-90	59.85	0.30	0.30
90-110	0.00	0.00	0.00
90-120	0.00	0.00	0.00
90-130	0.00	0.00	0.00
90-150	0.00	0.00	0.00
90-180	0.00	0.00	0.00
110-180	0.00	0.00	0.00
0-180	17357.35	100.00	100.00

Total Luminaire Efficiency = 100.00%

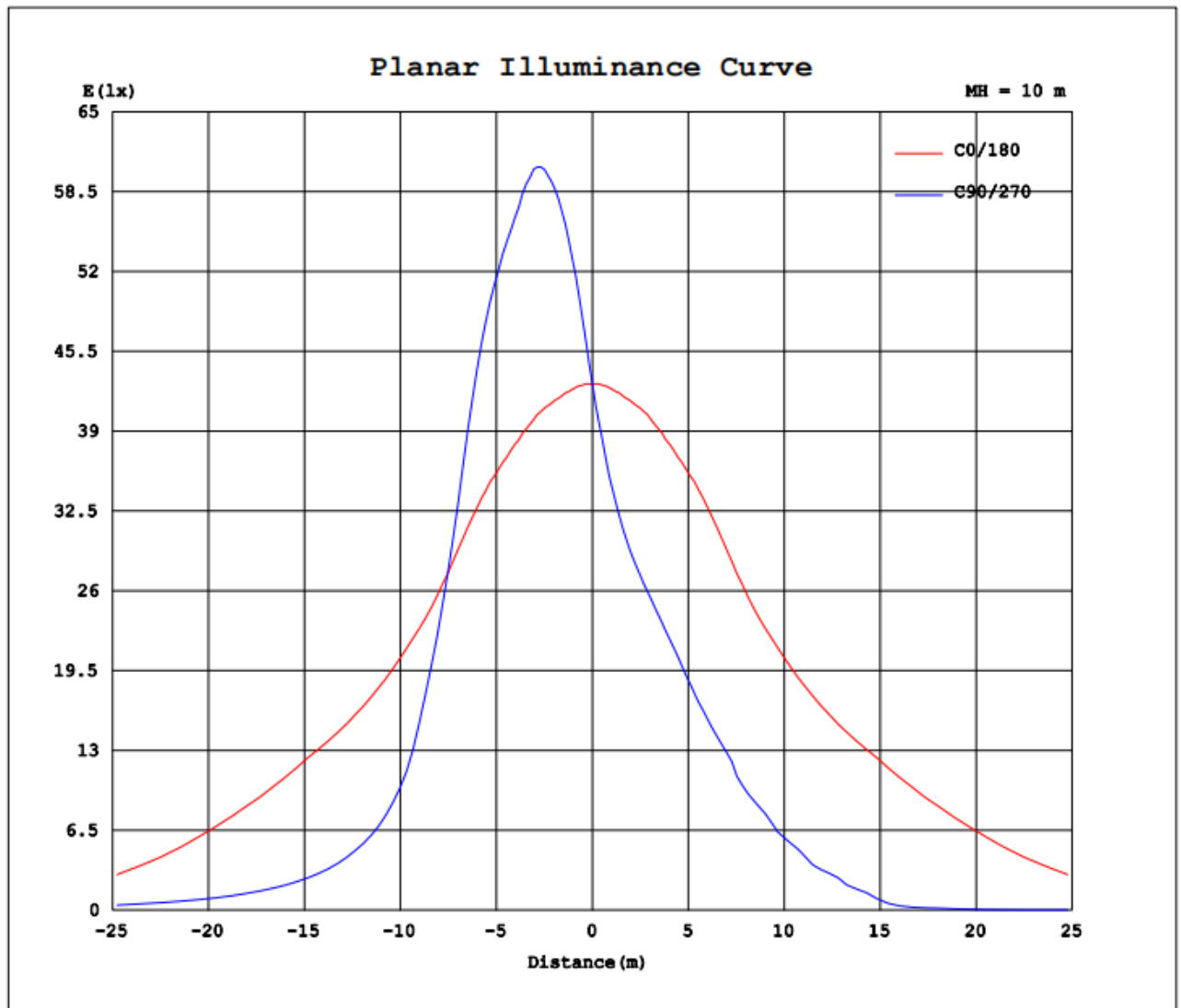
Produkte /
Products

Prüfbericht Nr. / Test report no. 60397061 001

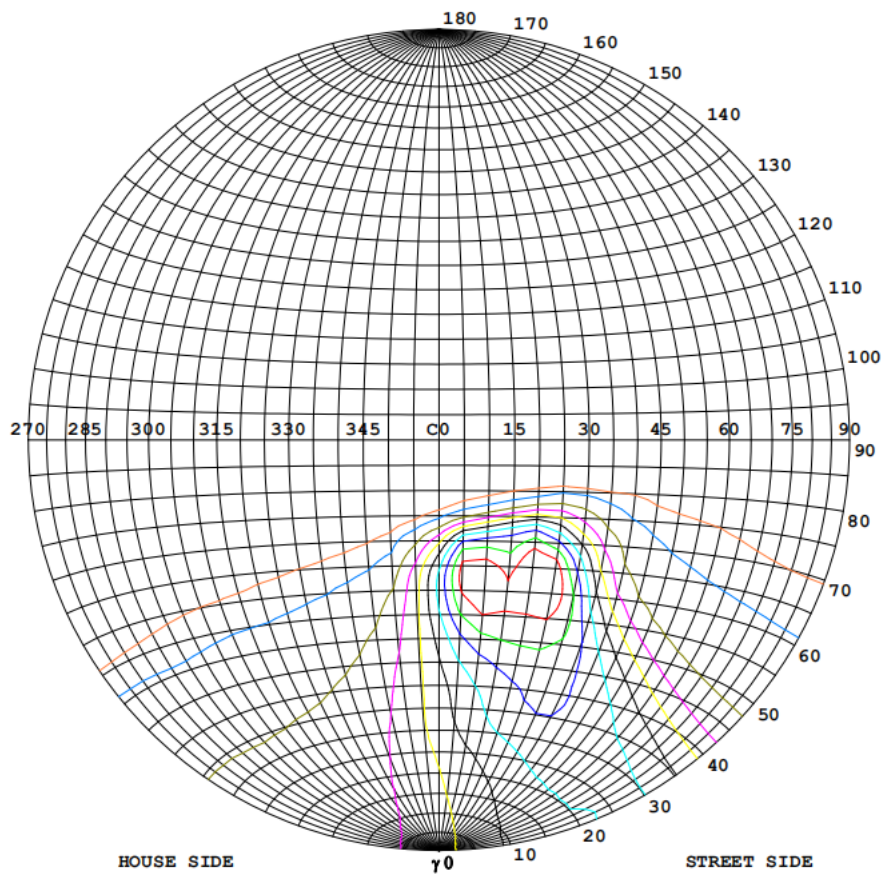
Luminous Intensity Distribution Data

Tool_View EL-SL18LA 120W CLASS I T2STF 3000K.IES																							
Keywords												Candela											
Horizontal Angles												2D											
Multiplier=1												3D											
Max Cd																							
0												5											
10												15											
20												25											
30												35											
40												45											
50												55											
60												65											
70												75											
80												85											
90												95											
100												105											
37	5378.34	5414.27	5535.17	5742.53	6030.67	6368.74	6720.05	7089.46	7481.04	7812.63	8129.71	8337.13	8389.23	8205.52	7802.25	7347.53	6807.58	6164.27	5379.04	4616.10	3972.95	3405.51	
38	5061.46	5096.75	5223.46	5438.94	5734.35	6111.73	6516.32	6975.74	7385.99	7787.79	8148.82	8369.41	8450.69	8287.87	7871.79	7427.74	6886.37	6213.14	5418.86	4624.54	3960.27	3363.90	
39	4729.75	4776.93	4909.97	5113.85	5418.77	5820.14	6284.56	6794.71	7282.88	7732.87	8134.75	8383.99	8481.71	8359.70	7964.15	7511.94	6957.19	6273.68	5445.83	4622.08	3917.12	3300.07	
40	4419.80	4440.00	4579.69	4792.85	5099.04	5530.59	5990.49	6566.95	7155.10	7680.64	8131.96	8389.27	8507.86	8427.32	8069.98	7604.25	7068.04	6376.94	5477.62	4617.71	3878.88	3256.15	
41	4084.23	4096.43	4231.04	4468.68	4775.68	5205.31	5707.82	6339.25	6973.32	7577.13	8081.65	8400.11	8539.91	8494.72	8200.19	7749.49	7193.31	6474.51	5529.47	4606.59	3846.44	3197.30	
42	3729.51	3762.39	3896.73	4139.25	4453.47	4888.84	5411.53	6084.12	6794.46	7459.41	8030.46	8406.92	8601.65	8612.81	8336.25	7911.98	7331.42	6595.15	5592.49	4593.39	3811.15	3140.33	
43	3370.58	3406.81	3547.30	3793.52	4111.26	4593.68	5092.32	5798.89	6560.45	7319.72	7974.54	8435.38	8674.34	8730.69	8475.18	8073.25	7489.40	6725.63	5669.24	4584.09	3772.08	3080.59	
44	3060.45	3093.02	3219.57	3443.37	3780.44	4220.77	4783.52	5502.44	6323.68	7154.87	7902.99	8447.29	8751.22	8851.15	8634.33	8232.55	7697.45	6858.91	5739.19	4591.80	3719.32	3006.92	
45	2835.83	2860.71	2941.13	3116.26	3442.14	3894.16	4457.50	5182.37	6046.56	6950.86	7811.41	8449.34	8831.37	8977.95	8804.50	8395.56	7877.79	7000.20	5812.07	4576.40	3662.03	2938.91	
46	2643.57	2661.71	2731.81	2866.10	3125.72	3564.18	4115.03	4891.14	5753.22	6727.88	7722.39	8451.33	8913.21	9105.12	8957.01	8586.82	8077.56	7189.92	5888.32	4578.39	3613.27	2887.91	
47	2467.00	2482.00	2543.72	2673.57	2956.21	3237.45	3786.80	4557.93	5453.64	6479.30	7571.28	8468.33	9009.51	9249.01	9107.67	8809.94	8295.53	7372.14	5967.31	4596.58	3547.10	2802.02	
48	2308.51	2335.13	2381.54	2495.01	2654.61	2942.87	3456.65	4215.23	5137.02	6195.31	7413.33	8452.95	9103.63	9378.70	9261.71	9012.08	8541.99	7578.79	6068.65	4591.55	3493.14	2728.26	
49	2172.90	2185.67	2239.77	2326.76	2468.19	2709.58	3134.18	3869.65	4805.39	5902.71	7209.07	8420.19	9232.79	9515.31	9442.14	9236.94	8823.13	7789.90	6162.24	4570.16	3426.96	2654.41	
50	2053.15	2068.10	2114.33	2192.00	2310.82	2519.82	2854.23	3521.31	4460.10	5594.35	6975.78	8346.62	9312.09	9685.82	9628.32	9442.75	9088.71	8016.44	6265.61	4565.70	3361.06	2576.01	
51	1949.61	1953.79	1998.04	2070.62	2175.45	2350.63	2628.60	3185.60	4118.87	5291.60	6724.85	8268.09	9433.07	9888.11	9830.21	9684.12	9367.29	8270.73	6388.95	4566.94	3306.98	2496.53	
52	1842.76	1851.34	1897.04	1961.42	2054.94	2211.27	2446.12	2891.00	3774.78	4975.36	6432.63	8191.65	9553.84	10048.59	9977.32	9908.32	9679.74	8542.76	6496.85	4545.15	3223.57	2405.94	
53	1747.37	1755.50	1795.60	1856.16	1941.26	2091.56	2287.74	2651.47	3417.80	4633.82	6128.69	8020.83	9637.31	10240.89	10152.47	10124.16	9988.15	8840.32	6842.15	4550.57	3146.86	2314.63	
54	1658.78	1665.52	1705.72	1766.94	1849.16	1974.67	2153.98	2470.15	3101.28	4301.81	5814.96	7848.32	9632.67	10464.17	10305.79	10202.13	10132.00	9151.99	6792.55	4546.93	3064.00	2233.00	
55	1577.84	1583.41	1624.89	1678.57	1747.73	1874.97	2032.91	2299.12	2818.57	3972.11	5506.30	7597.51	9742.01	10685.94	10516.99	10484.00	10609.45	9448.67	6934.45	4531.12	2965.68	2138.14	
56	1501.78	1503.56	1543.76	1594.82	1664.03	1771.63	1915.00	2166.84	2591.69	3625.92	5208.48	7324.03	9797.75	10900.21	10717.97	10631.60	10896.25	9746.80	7095.73	4458.04	2877.23	2053.75	
57	1436.00	1439.33	1467.14	1520.06	1580.76	1681.54	1822.85	2043.30	2406.22	3231.28	4504.63	7050.99	9758.75	11168.29	10912.38	10745.94	11147.07	9988.28	7179.55	4459.47	2772.67	1964.96	
58	1370.57	1375.34	1401.94	1452.53	1506.76	1598.27	1726.24	1931.14	2262.17	2984.80	4578.69	6750.91	9685.38	11398.59	11096.15	10843.96	11358.29	10284.62	7270.08	4404.89	2668.10	1872.25	
59	1305.15	1311.35	1337.05	1387.65	1437.23	1523.15	1642.43	1833.35	2138.20	2732.49	4226.53	6490.88	9626.47	11568.37	11257.68	10863.42	11581.67	10522.95	7344.25	4404.09	2563.29	1782.68	
60	1250.12	1260.06	1278.89	1322.84	1372.36	1451.49	1569.22	1733.80	2012.35	2518.69	3886.74	6216.69	9461.39	11732.80	11364.70	10831.87	11673.45	10536.73	7366.01	4339.05	2422.23	1682.84	
61	1191.40	1200.53	1225.33	1265.42	1307.57	1381.57	1495.74	1654.00	1902.07	2355.60	3560.03	5932.27	9249.37	11783.15	11490.04	10763.96	11725.62	10907.53	7414.17	4311.08	2297.03	1590.71	
62	1135.17	1142.12	1166.75	1205.47	1254.14	1311.67	1418.55	1567.07	1798.41	2221.09	3264.76	5667.95	9021.31	11891.21	11633.26	10646.37	11742.78	11043.52	7362.90	4234.39	2152.68	1482.47	
63	1075.60	1079.56	1105.33	1146.87	1192.97	1258.03	1346.38	1487.31	1698.09	2103.88	2992.73	5370.26	8703.98	11747.29	11718.49	10546.24	11703.68	11101.41	7268.31	4123.14	1979.42	1349.73	
64	1015.00	1019.88	1047.24	1088.16	1133.68	1198.21	1277.81	1416.71	1608.75	1978.65	2789.42	5064.53	8388.62	11586.50	11785.17	10382.61	11454.44	11012.53	7093.35	3951.25	1805.11	1224.70	
65	960.76	966.43	994.22	1034.93	1075.66	1138.25	1220.44	1345.09	1523.43	1870.77	2626.50	4760.48	8058.78	11365.47	11712.02	10141.48	11199.71	10864.35	6809.30	3685.16	1604.90	1096.50	
66	908.17	916.84	942.64	983.64	1016.94	1074.11	1159.53	1275.05	1441.27	1768.37	2465.79	4456.84	7700.14	10959.13	11588.59	9902.51	10794.84	10588.55	6457.27	3411.44	1453.05	979.18	
67	856.77	863.45	892.00	931.19	967.39	1017.12	1100.81	1213.54	1362.71	1667.58	2337.13	4183.97	7371.49	10534.54	11337.63	9638.57	10382.62	10164.89	6066.51	3081.34	1288.06	873.35	
68	774.89	787.23	824.05	872.11	915.07	963.77	1041.58	1149.59	1287.49	1569.14	2198.66	3883.98	6935.16	9896.98	10994.06	9360.36	9863.79	9646.74	5531.79	2759.19	1121.14	755.91	
69	723.62	735.92	771.54	818.17	860.12	910.49	982.10	1083.83	1217.41	1482.73	2073.09	3672.05	6434.98	9249.40	10541.70	9989.71	9347.47	9055.95	4984.73	2347.68	984.61	651.65	

Tool_View EL-SL18LA 120W CLASS I T2STF 3000K.IES		
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STREETLIGHT ISOCANDELA DIAGRAM

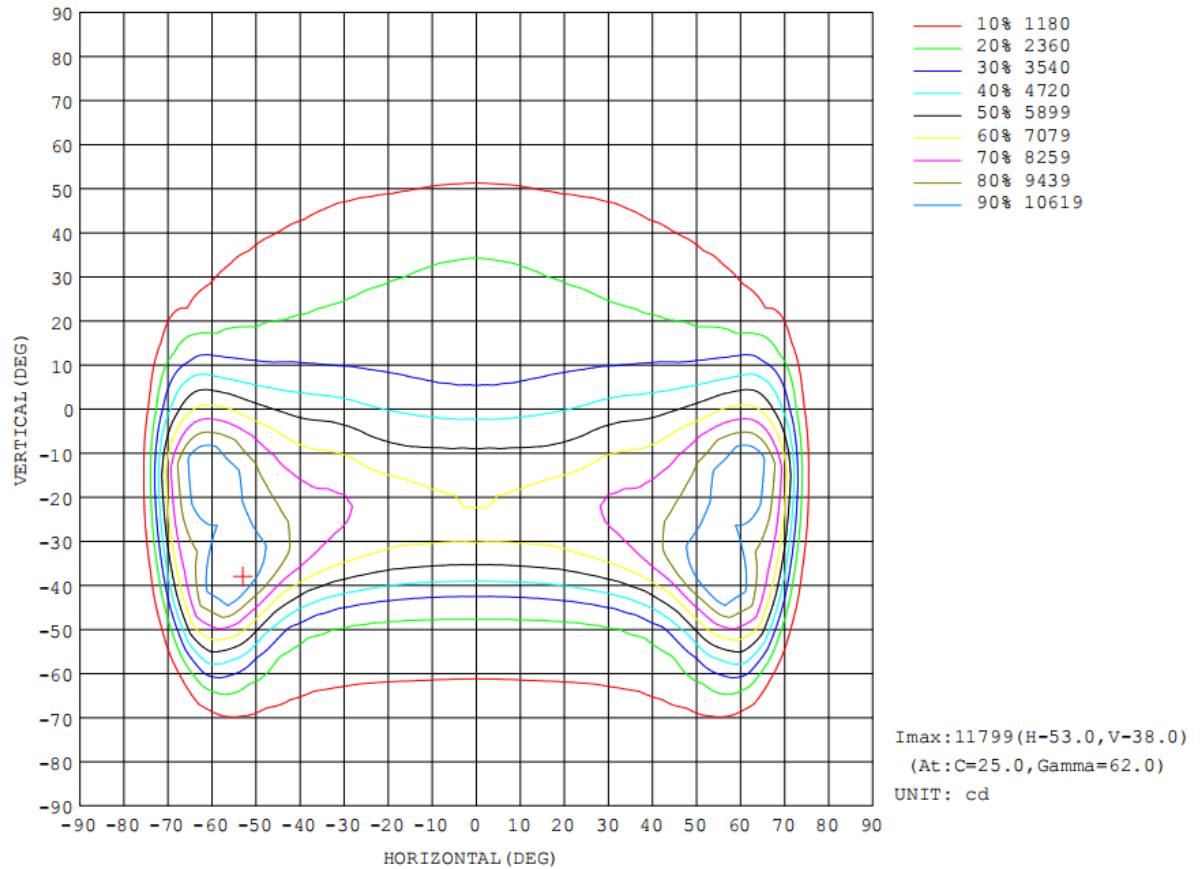


Classification:

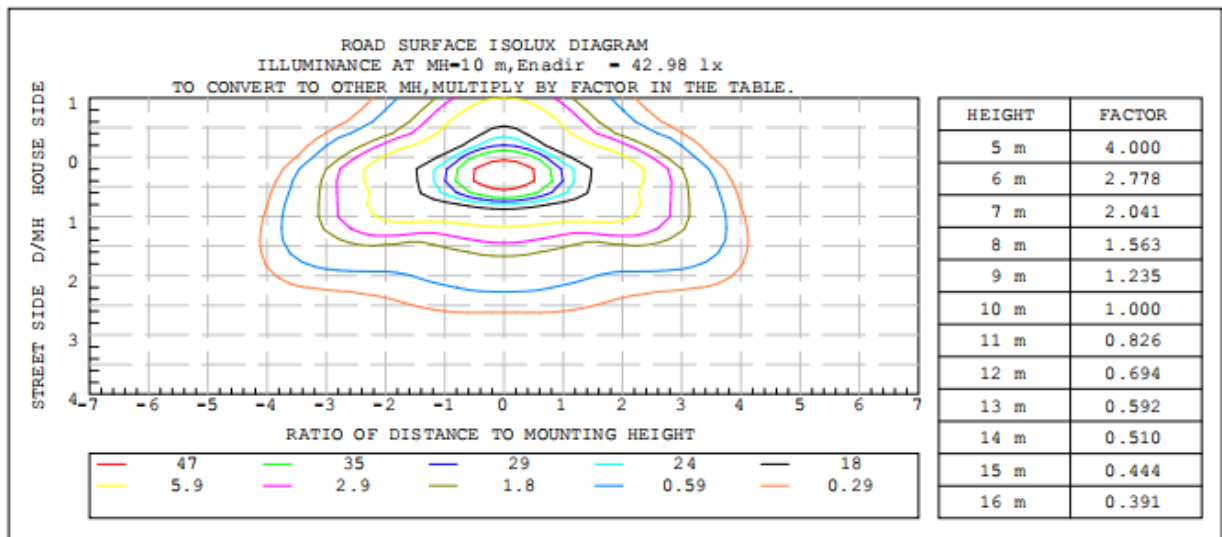
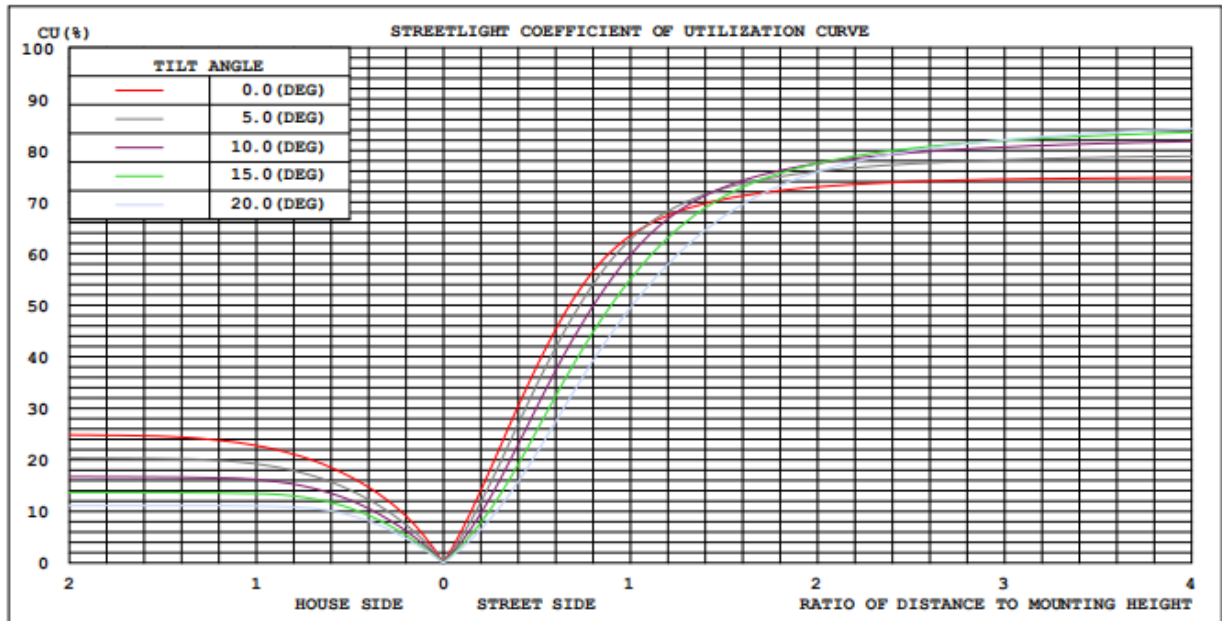
IES: Type II - Short
 CIE: Narrow - Intermediate
 IES: Full cut-off
 CIE: Semi-cut-off
 Max. At80: 61.86cd/klm
 Max. At90: 0cd/klm
 Max. 80-90: 61.86cd/klm

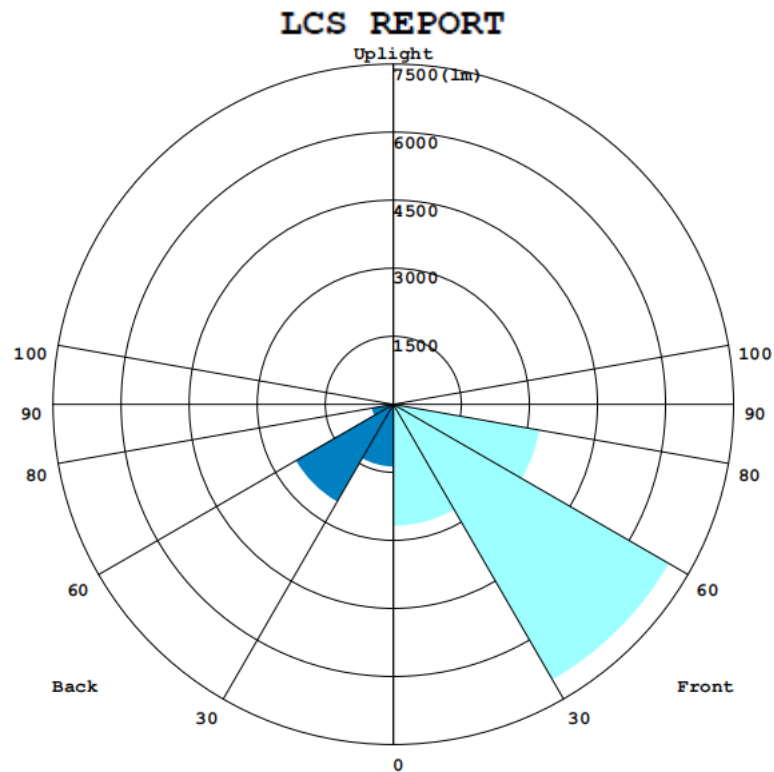
ISOCANDELA DIAGRAM	
UNIT	cd
I _{max} =100%	11810
90%	10629
80%	9448
70%	8267
60%	7086
50%	5905
40%	4724
30%	3543
20%	2362
10%	1181
5%	591

ISOCANDELA DIAGRAM



COEFFICIENT OF UTILIZATION CURVE AND ISOLUX DIAGRAM




IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low (0-30)	2679.7	15.4
FM - Front-Medium (30-60)	7014.1	40.4
FH - Front-High (60-80)	3272	18.9
FVH - Front-Very High (80-90)	57.55	0.3
Total Forward Light	13023	75.0

BL - Back-Low (0-30)	1373.3	7.9
BM - Back-Medium (30-60)	2476.2	14.3
BH - Back-High (60-80)	482.2	2.8
BVH - Back-Very High (80-90)	2.296	0.0
Total Back Light	4334	25.0

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	4334	0	4334
Street Side	13023	0	13023

Photo



overview



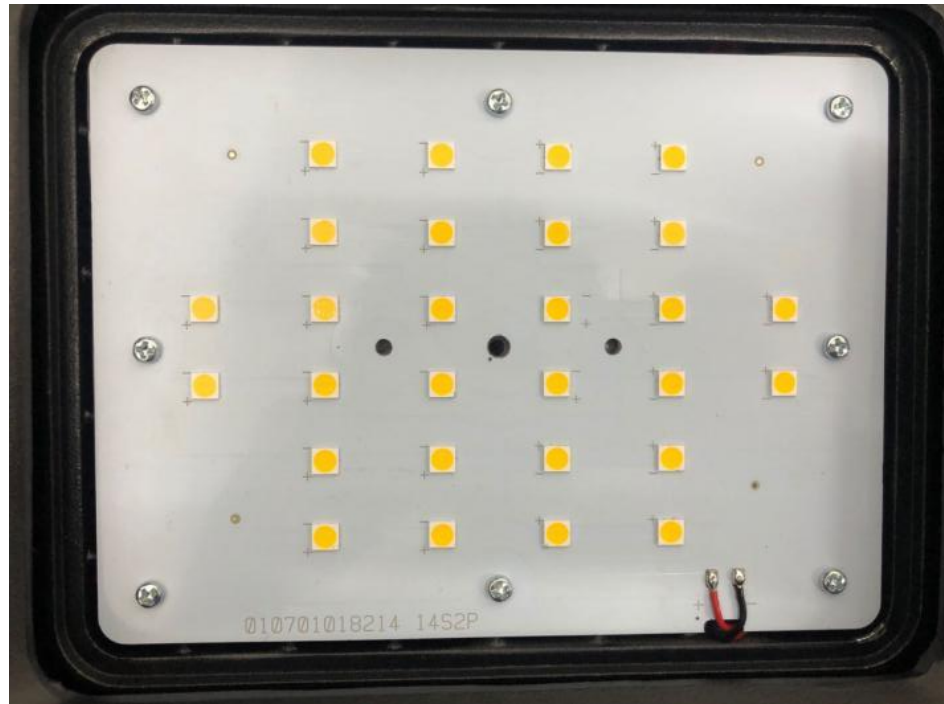
Back-side



LED Driver + SPD



Optical lens



LED module

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 201063-0

TUV Rheinland (Shanghai) Co., Ltd
Jing'An District, Shanghai
China

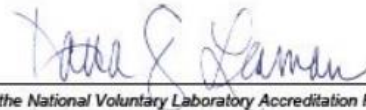
*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

Energy Efficient Lighting Products

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).*

2020-06-09 through 2021-06-30
Effective Dates




For the National Voluntary Laboratory Accreditation Program