

Prüfbericht Test report		Auftragsnr. / order no.: 244268555 Berichtsnr. / report no.: 60397027 001	
Auftraggeber client:		Auftragsdatum / date of order:	
NISKO GROUP LTD. 41 HAMAAYAN MODI'IN, Israel.		23.09.2020 AG-Referenz-Nr. / client reference no.: -	
Inhalt des Auftrags content of order:		Electrical and Photometric Measurement to LM-79-08	
Prüfgrundlagen test specifications:		IES LM-79-08	
Prüfgegenstand test item:		LED Street Light	
EAN-Nr. / no.: N/A			
Bezeichnung identification:	EL-SL 18LA-120W CLASS I T3VS 3000K		
Eingang Prüfgegenstand receipt of test item:	23.09.2020		
Prüfgegenstands-Nr. test item no.:	A002073542-001		
Prüfzeitraum und -ort period of test and location:	23.09.2020-28.09.2020, Shanghai Xingshang Photoelectric technology Co., Ltd		
Prüflaboratorium testing laboratory:	TÜV Rheinland (Shanghai) Co., Ltd.		
Prüfergebnis test result *):	N/A		
Sonstiges / other aspects:		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.	
geprüft / tested by:		kontrolliert / reviewed by:	
06.11.2020 Fernando Dai / P. <i>Fernando Dai</i>		06.11.2020 Alex Yan / Reviewer <i>Alex Yan</i>	
Datum Date	Name/Stellung Name/Position	Unterschrift Signature	Datum Date
<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 T3VS 3000K	A002073542-001	200-240Vac, 50/60Hz	3000K	120W	LUMILEDS LUXEON 5050- L15030705006000 00 14S2P 2MODULE

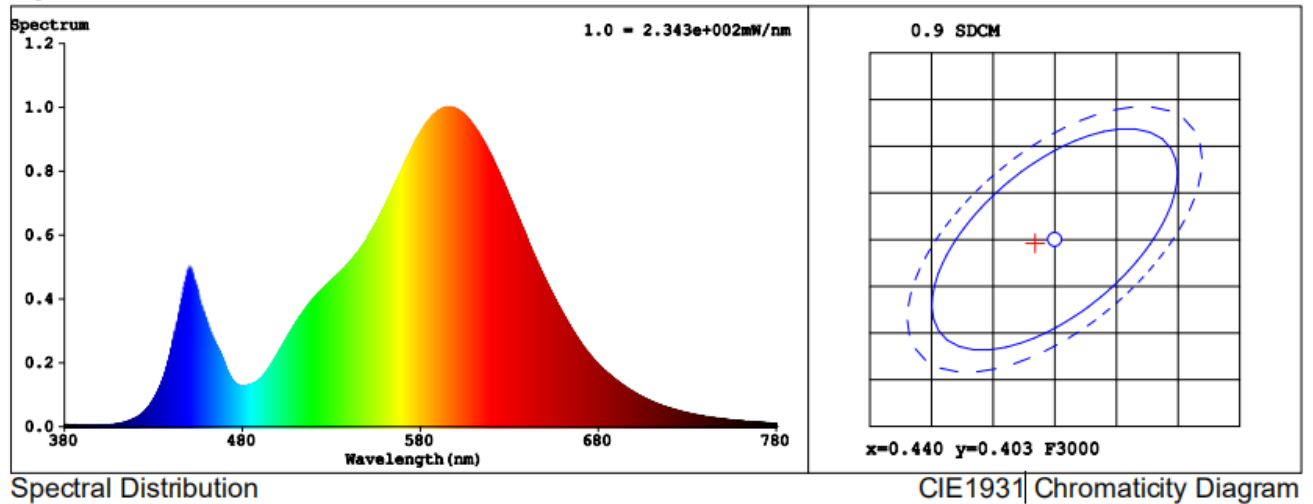
Prüfbericht Nr. / Test report no. 60397027 001

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

Prüfbericht Nr. / Test report no. 60397027 001

Measured Results	
	EL-SL18LA-120W CLASS I T3VS 3000K
Total luminous flux (lm)	16451
Input wattage (W)	119.85
Input current (A)	0.5533
Frequency (Hz)	50
Power factor	0.9849
Efficacy (Lm/W)	137.26
CCT (K)	2963
Chromaticity x	0.4384
Chromaticity y	0.4026
Chromaticity u'	0.2522
Chromaticity v'	0.5210
CRI	74
R9	0
Du'v' (Max.)	-0.000789
THDI(%)	4.804
LCS BUG Rating	B3-U0-G2, Semi cut-off

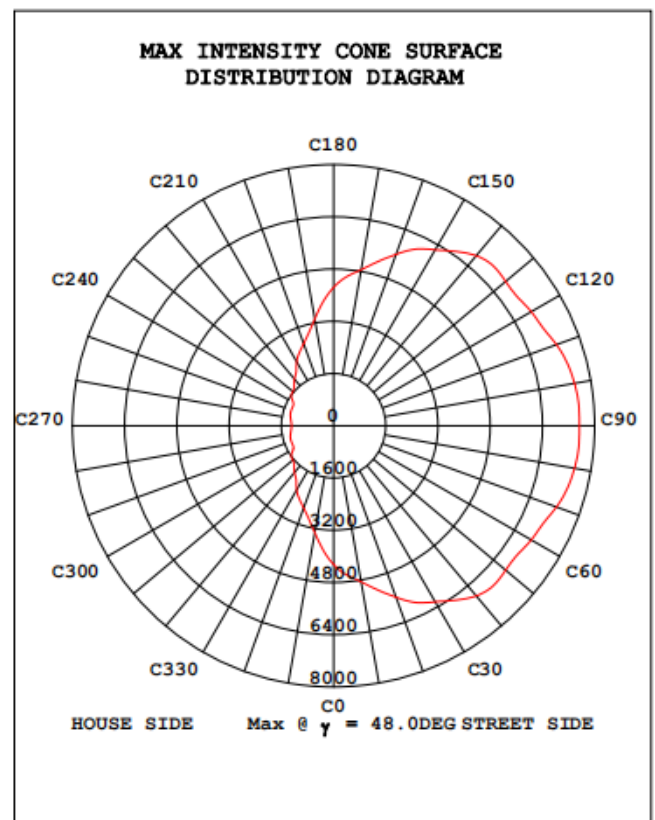
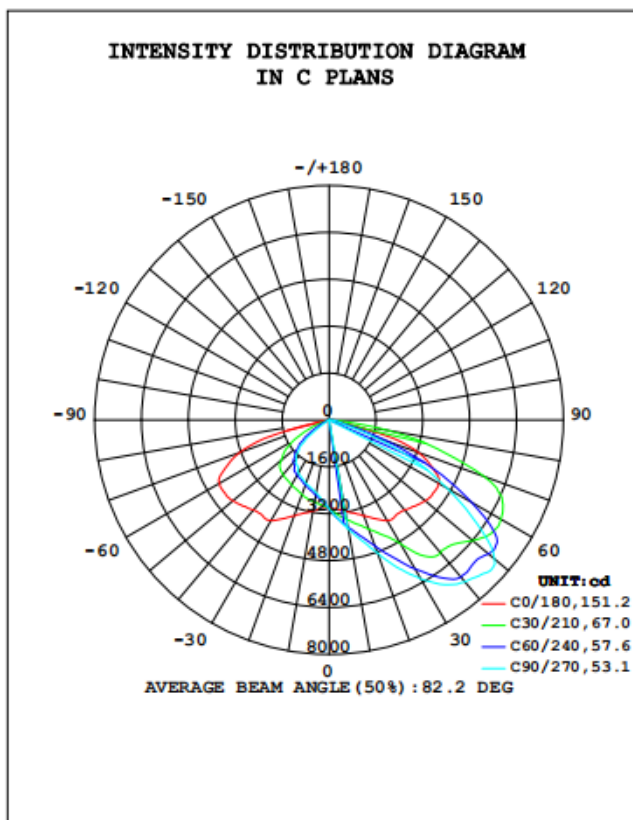
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Spectral power distribution: (Clause 10 of LM-79)
EL-SL18LA-120W CLASS I T3VS 3000K

Dominant WL: 583.3nm
Peak WL: 596nm
Luminous Intensity Distribution, Ambient temperature: 25°C (Clause 10 of LM-79)

Description	Data
Model	EL-SL18LA-120W CLASS I T3VS 3000K
Test voltage (V)	220VAC
Test current (A)	0.5533
Test wattage (W)	119.85
Frequency (Hz)	50
Power factor	0.9849
Central luminous intensity (cd)	3018
Max. luminous intensity(cd)	7538.3 (C=5, Gamma=48)

For the distribution curve see next page.
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DATA OF LAMP		PHOTOMETRIC DATA				Eff: 137.26 lm/W
MODEL	EL-SL18LA	I _{max} (cd)	7538.3	η street_up (%)	0.0	
NOMINAL POWER(W)	120	LOR(%)	100.0	η street_down (%)	75.8	
RATED VOLTAGE(V)	220-240	TOTAL FLUX(lm)	16451	η house_up (%)	0.0	
NOMINAL FLUX(lm)	16450.6	MAXIMUM @ (C,γ)	5,48.0	η house_down (%)	24.2	
LAMPS INSIDE	1	η up (%)	0.0	76 FLASHAREA(m2)	0.05000	
TEST VOLTAGE (V)	220	η down (%)	100.0	SLI	20.831	




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

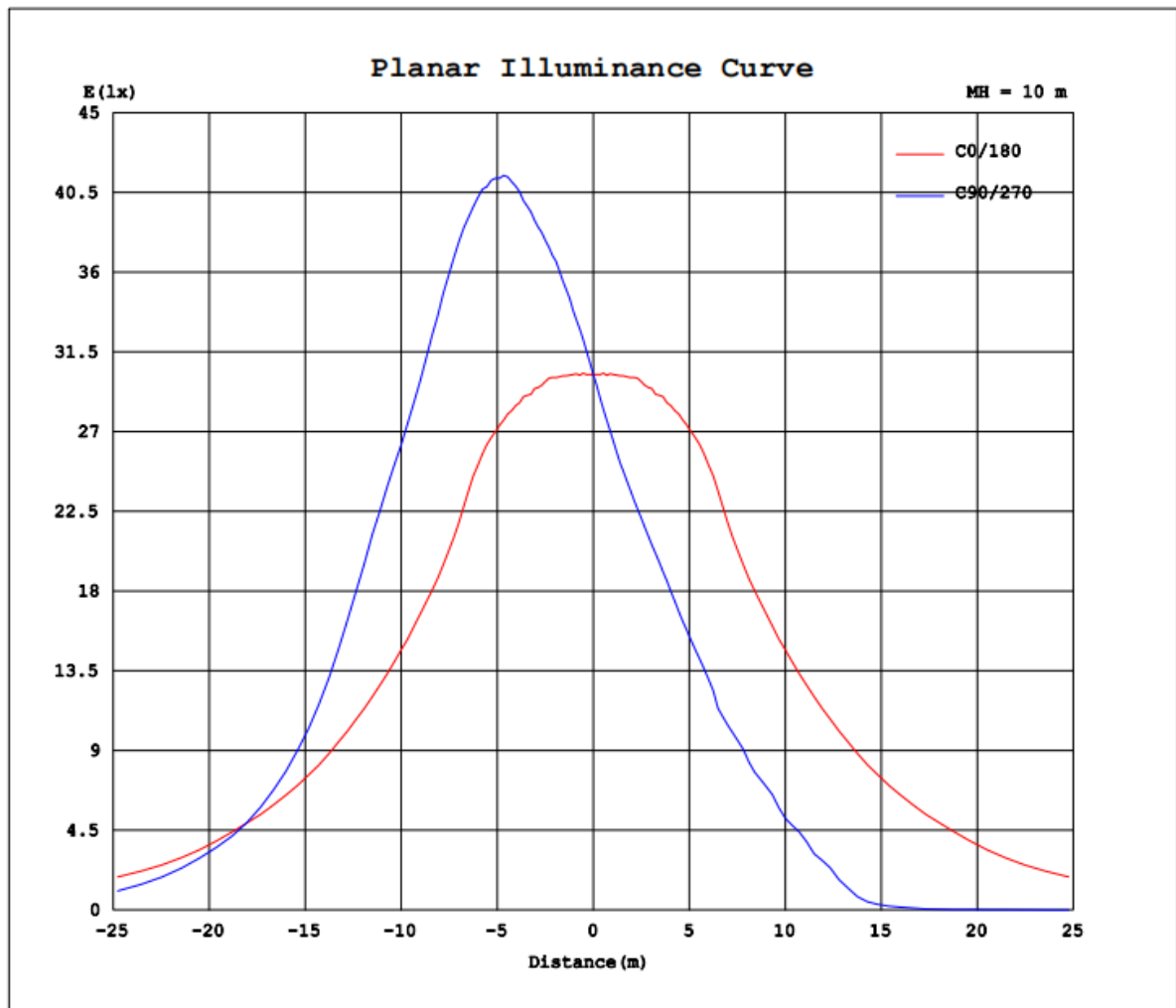
Zone	Lumens	%Lamp	%Fixt
0-20	1229.69	7.50	7.50
0-30	2934.9	17.80	17.80
0-40	5549.24	33.70	33.70
0-60	12358.62	75.10	75.10
0-80	16319.76	99.20	99.20
0-90	16450.76	100.00	100.00
10-90	16155.24	98.20	98.20
20-40	4319.56	26.30	26.30
20-50	7622.23	46.30	46.30
40-70	9565.04	58.10	58.10
60-80	3961.16	24.10	24.10
70-80	1205.49	7.30	7.30
80-90	130.98	0.80	0.80
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	16450.76	100.00	100.00

Total Luminaire Efficiency = 100.00%

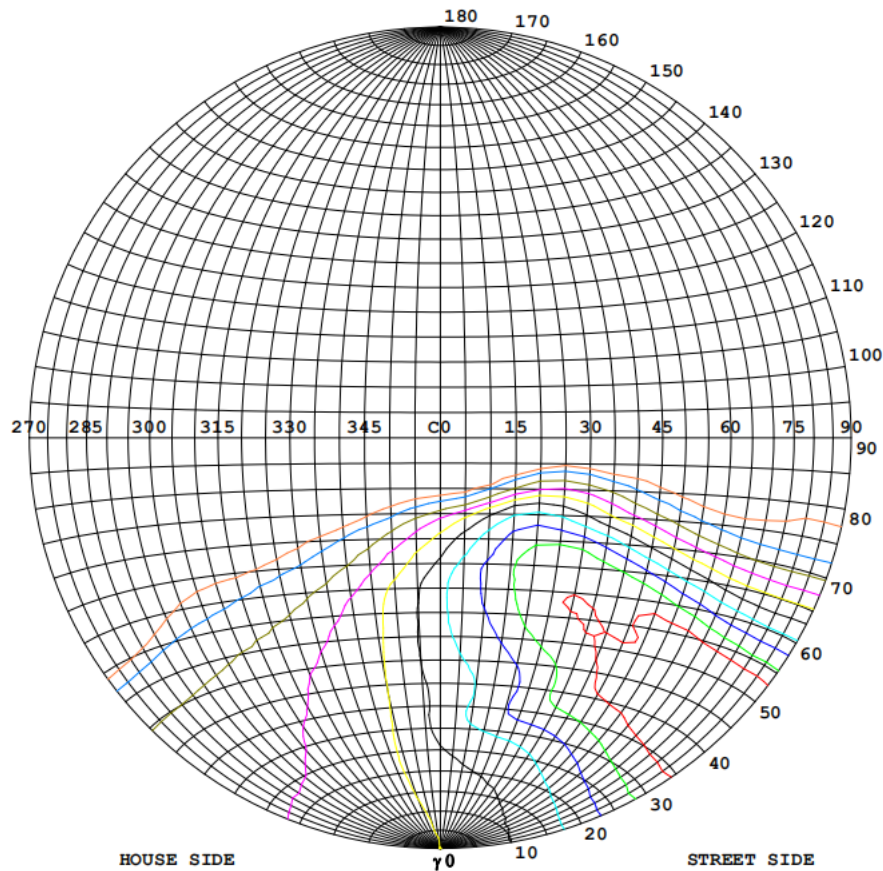
Luminous Intensity Distribution Data

 Tool_View EL-SL18LA 120W CLASS I T3VS 3000KIES

Keywords		Candela															2D										3D									
Vertical Angles	Horizontal Angles		Multiplier=1		Max Cd																															
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105														
24	5427.600	5441.100	5401.700	5380.200	5250.100	5163.700	5046.900	4875.300	4752.500	4607.400	4481.500	4340.000	4246.300	4170.300	4074.200	3982.100	3890.600	3795.300	3672.100	3494.200	3298.100	3088.300														
25	5570.900	5585.300	5553.100	5514.600	5389.500	5301.200	5170.500	5006.100	4856.600	4705.300	4565.700	4414.900	4330.300	4225.400	4148.300	4052.200	3960.500	3865.900	3714.900	3529.800	3313.100	3087.800														
26	5689.000	5746.100	5714.400	5666.400	5547.100	5426.200	5303.800	5131.400	4984.700	4793.500	4660.200	4509.100	4405.800	4302.400	4232.600	4122.700	4042.000	3927.100	3769.400	3556.900	3326.800	3093.200														
27	5839.900	5883.300	5837.300	5790.400	5689.700	5576.000	5447.100	5251.300	5104.500	4889.200	4731.900	4612.800	4494.800	4397.300	4323.600	4197.300	4119.400	3993.900	3816.200	3588.400	3338.100	3097.500														
28	5982.600	6033.500	5951.900	5924.000	5834.900	5726.900	5594.100	5401.700	5226.200	5006.500	4860.500	4724.700	4606.100	4501.000	4432.900	4300.000	4197.700	4051.800	3873.200	3607.700	3356.200	3090.200														
29	6101.400	6167.600	6096.000	6061.600	5976.100	5867.900	5741.300	5541.300	5362.800	5153.000	4976.700	4839.900	4724.300	4624.600	4555.100	4425.900	4292.500	4124.200	3925.700	3632.600	3358.000	3082.300														
30	6264.800	6306.000	6268.600	6206.500	6117.000	6003.600	5866.500	5669.200	5493.600	5302.400	5131.400	4985.900	4878.000	4783.500	4697.200	4572.300	4399.200	4208.700	3963.000	3656.900	3346.400	3074.600														
31	6386.600	6427.300	6376.400	6339.600	6262.500	6147.100	5991.000	5819.000	5630.400	5459.600	5293.700	5125.800	5052.000	4973.500	4854.200	4698.500	4507.700	4274.900	3986.500	3660.800	3343.000	3057.400														
32	6507.500	6533.800	6501.000	6468.900	6387.600	6260.900	6131.700	5954.800	5788.600	5624.300	5457.600	5316.400	5221.500	5130.200	5006.500	4826.700	4583.900	4317.900	4017.200	3661.400	3341.200	3045.500														
33	6628.600	6671.100	6624.100	6600.100	6510.300	6413.600	6281.900	6092.800	5947.000	5774.000	5623.100	5472.800	5391.400	5289.200	5139.600	4915.100	4627.700	4334.900	4010.700	3677.400	3318.500	3062.800														
34	6757.900	6822.200	6763.300	6730.300	6639.800	6541.600	6424.300	6215.100	6082.000	5926.300	5776.900	5639.900	5543.800	5417.800	5221.400	4949.800	4646.900	4329.000	3998.000	3651.500	3311.500	3037.600														
35	6880.300	6942.500	6873.900	6863.600	6760.600	6661.100	6548.100	6334.700	6221.200	6050.100	5914.300	5781.700	5663.600	5479.000	5233.200	4968.900	4621.100	4308.200	3974.900	3660.300	3303.600	3035.200														
36	6947.700	7040.000	6927.200	6955.200	6878.400	6794.400	6672.100	6469.000	6352.100	6184.100	6060.100	5918.500	5773.700	5529.100	5236.400	4915.300	4591.500	4271.200	3967.400	3655.400	3307.400	3026.400														
37	7031.600	7104.800	7054.000	7032.700	6946.900	6887.200	6785.900	6580.100	6471.000	6316.000	6213.600	6061.700	5851.100	5564.200	5211.900	4889.500	4546.300	4281.000	3977.100	3658.900	3303.900	3018.200														
38	7109.800	7155.100	7108.900	7094.300	7033.400	6961.300	6897.100	6700.000	6508.100	6447.500	6347.600	6181.000	5902.900	5568.700	5171.600	4848.300	4533.700	4277.200	3979.300	3659.800	3320.700	3019.900														
39	7147.700	7213.500	7142.900	7139.300	7061.100	6999.800	6967.200	6818.100	6726.000	6564.600	6434.500	6239.800	5925.100	5521.900	5126.500	4823.600	4538.500	4279.600	3990.300	3675.600	3336.200	3009.700														
40	7216.600	7235.000	7174.200	7147.000	7104.100	7032.600	6998.100	6897.300	6825.100	6687.400	6535.400	6289.000	5915.600	5528.900	5118.900	4821.300	4540.500	4288.800	4013.500	3689.900	3336.400	3003.200														
41	7248.600	7256.800	7208.400	7187.500	7096.100	7052.000	6995.700	6969.300	6919.000	6791.300	6586.000	6289.600	5988.400	5512.100	5121.700	4831.900	4552.700	4319.000	4044.500	3717.600	3325.800	3007.400														
42	7280.400	7304.600	7248.000	7200.000	7089.200	7048.000	7014.400	7016.000	6980.500	6791.100	6625.100	6269.000	5911.400	5542.900	5148.100	4862.800	4576.500	4309.000	4071.500	3736.300	3349.400	3003.500														
43	7334.400	7351.200	7298.400	7209.400	7096.300	7009.300	6995.800	7001.700	7009.100	6913.400	6644.400	6284.800	5928.600	5595.400	5180.200	4888.800	4618.400	4397.500	4098.900	3755.400	3350.400	2988.800														
44	7382.300	7416.100	7335.100	7219.300	7107.600	6978.400	6969.600	6968.200	7023.100	6940.000	6654.500	6316.900	5936.500	5632.800	5235.000	4927.400	4633.700	4397.000	4109.500	3764.500	3351.000	2986.900														
45	7425.100	7466.900	7388.300	7272.700	7121.200	7000.100	6954.500	6926.800	7006.400	6954.600	6700.500	6364.500	6002.600	5715.100	5319.300	4974.800	4710.800	4464.900	4153.700	3767.400	3339.300	2963.500														
46	7495.300	7516.600	7420.800	7326.200	7156.100	7032.300	6945.300	6924.600	6978.600	6929.500	6729.500	6396.400	6064.000	5780.300	5410.000	5040.100	4762.500	4505.200	4180.700	3784.500	3345.800	2971.600														
47	7537.900	7536.900	7476.200	7379.300	7208.000	7041.200	6949.300	6890.200	6949.900	6932.300	6771.100	6450.400	6140.100	5866.400	5492.000	5106.400	4814.100	4545.000	4207.300	3802.500	3333.700	2961.400														
48	7527.800	7538.300	7494.800	7411.600	7263.100	7081.600	6994.800	6878.100	6880.700	6923.200	6799.400	6451.900	6225.9																							



STREETLIGHT ISOCANDELA DIAGRAM

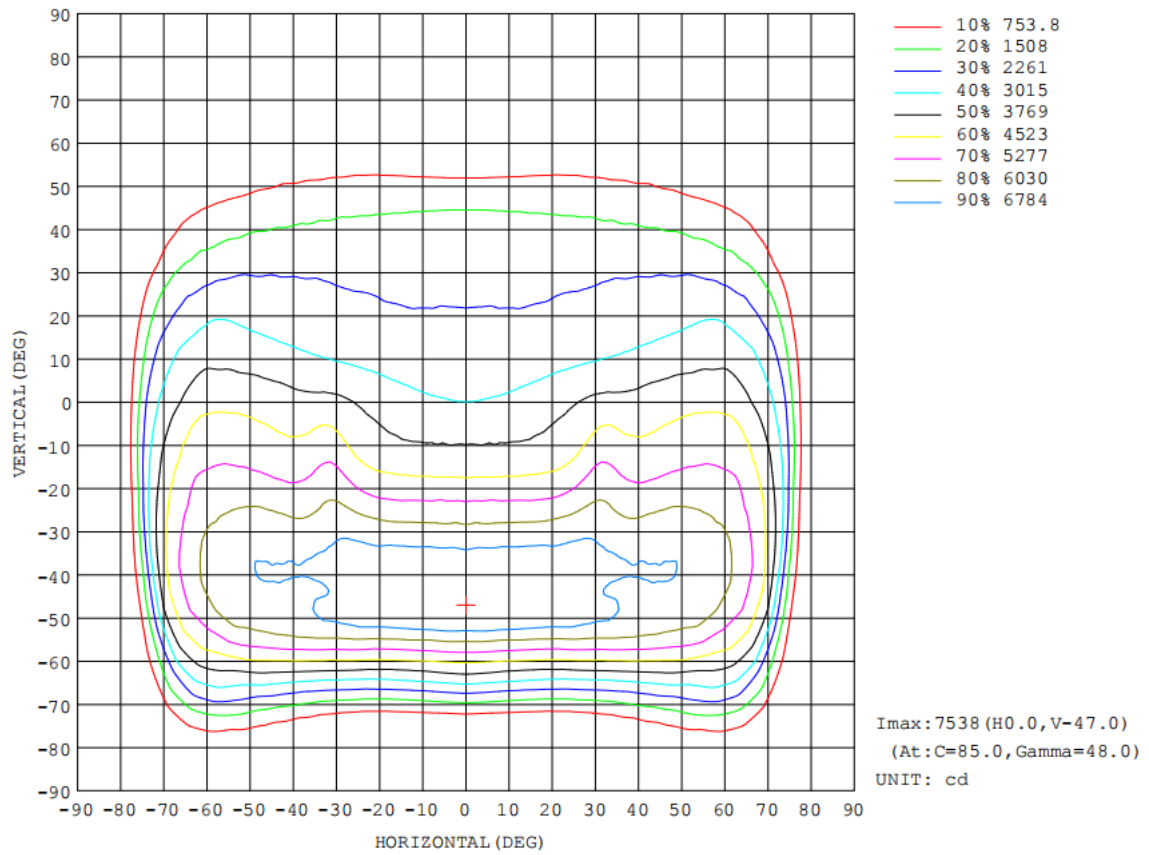


Classification:

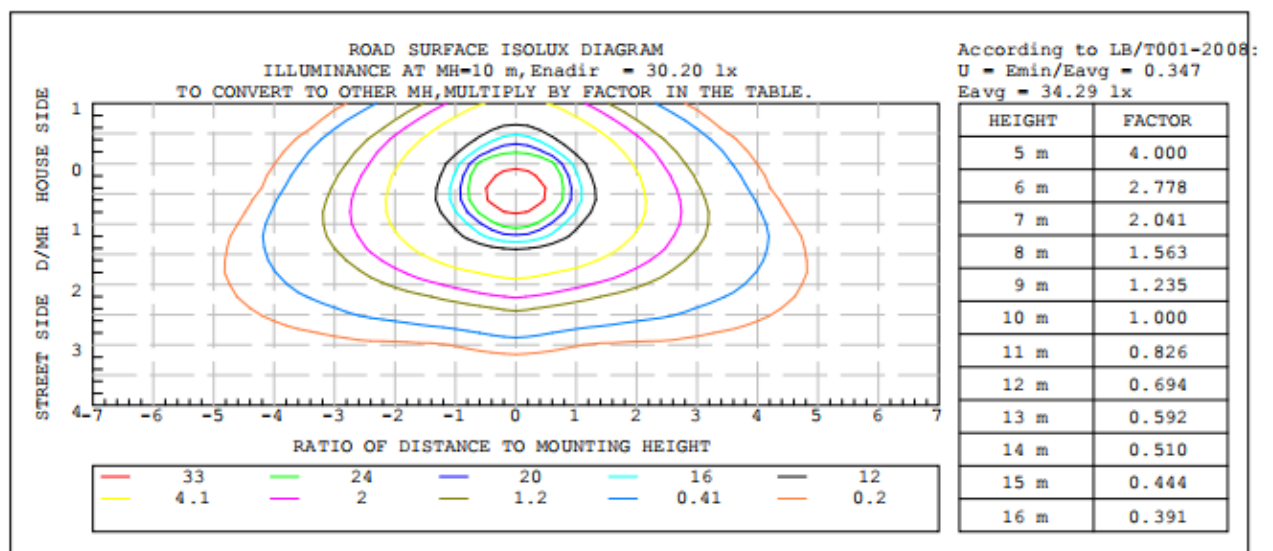
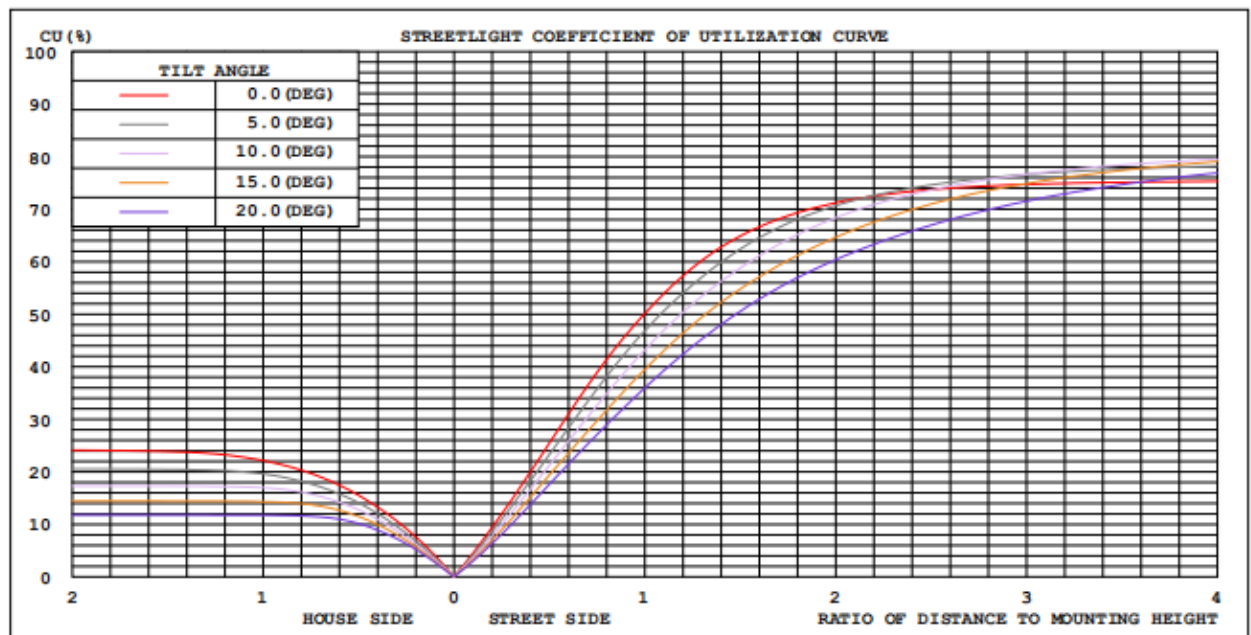
IES: Type III - Very Short
 CIE: Average - Short
 IES: Semi cut-off
 CIE: Non-cut-off
 Max. At80: 143.7cd/klm
 Max. At90: 0cd/klm
 Max. 80-90: 143.7cd/klm
 NRB 5101: Semi limited [26.4%]

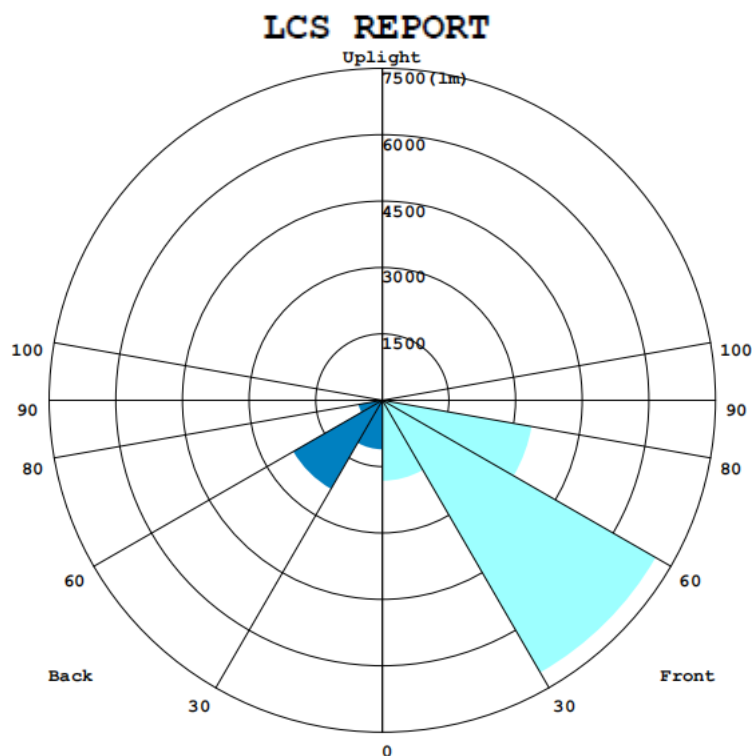
ISOCANDELA DIAGRAM	
UNIT	cd
Imax=100%	7538
90%	6784
80%	6031
70%	5277
60%	4523
50%	3769
40%	3015
30%	2261
20%	1508
10%	754
5%	377

ISOCANDELA DIAGRAM



COEFFICIENT OF UTILIZATION CURVE AND ISOLUX DIAGRAM





IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	1822.7	11.1
FM - Front-Medium(30-60)	7108	43.2
FH - Front-High (60-80)	3417.8	20.8
FVH - Front-Very High(80-90)	128.69	0.8
Total Forward Light	12477	75.8

BL - Back-Low(0-30)	1112.2	6.8
BM - Back-Medium(30-60)	2315.7	14.1
BH - Back-High (60-80)	543.33	3.3
BVH - Back-Very High(80-90)	2.2954	0.0
Total Back Light	3973.5	24.2

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	3973.5	0	3973.5
Street Side	12477	0	12477

Photo



Overview



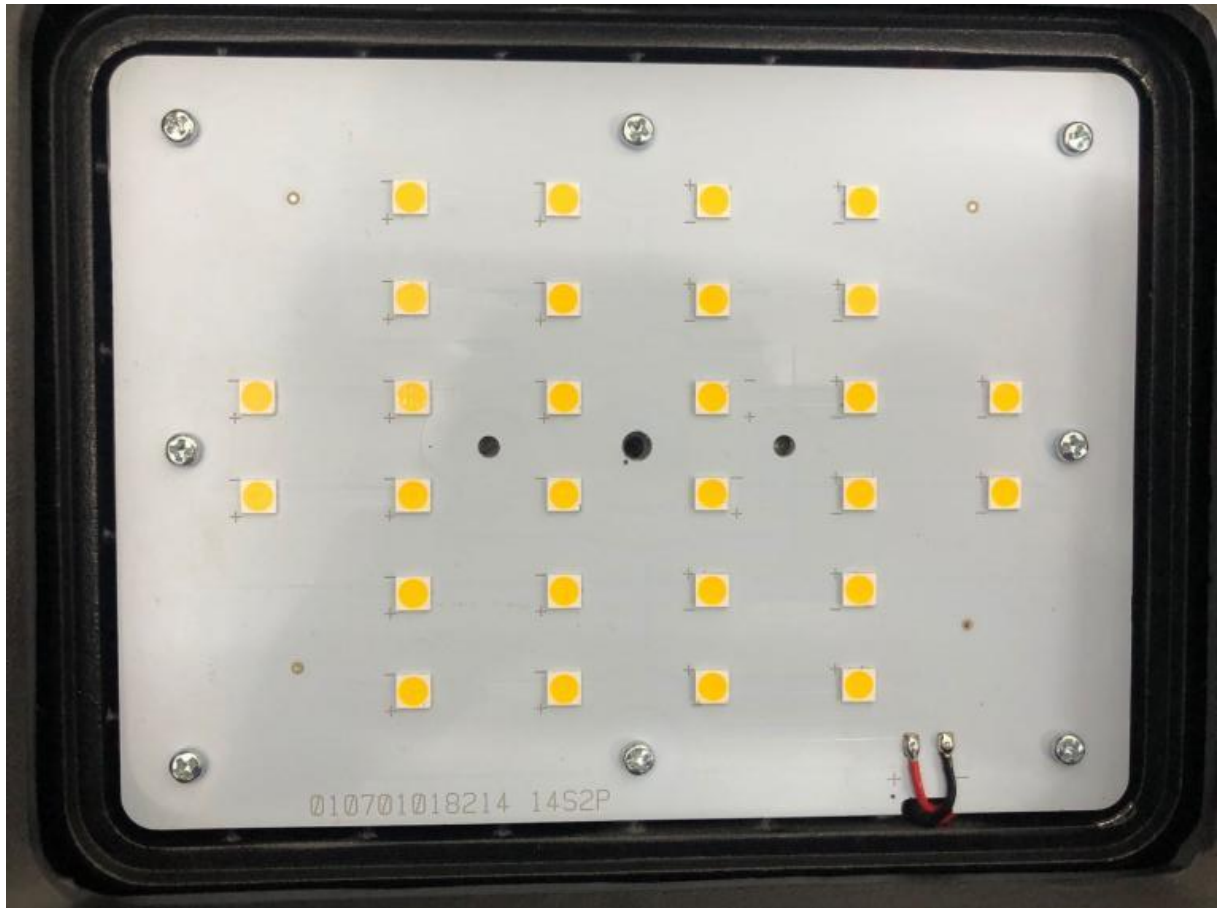
Back-side



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 Communiqué dated January 2009).*

2020-06-09 through 2021-06-30

Effective Dates




For the National Voluntary Laboratory Accreditation Program