

Prüfbericht Test report		Auftragsnr. / order no.: 244268555 Berichtsnr. / report no.: 60397030 001	
Auftraggeber client:		Auftragsdatum / date of order: 23.09.2020	
NISKO GROUP LTD. 41 HAMAAYAN MODI'IN, Israel.		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-160W CLASS I T3VS 4000K		
Eingang Prüfgegenstand receipt of test item:	23.09.2020		
Prüfgegenstands-Nr. test item no.:	A002073542-004		
Prüfzeitraum und -ort period of test and location:	23.09.2020-28.08.2020, 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		06.11.2020 Alex Yan / Reviewer	
Datum Date	Name/Stellung Name/Position	Unterschrift Signature	Datum Date
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.			
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.			

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-160W CLASS I T3VS 4000K	A002073542-004	200-240Vac, 50/60Hz	4000K	160W	LUMILEDS LUXEON 5050- L15040705006000 00 18S2P 2MODULE

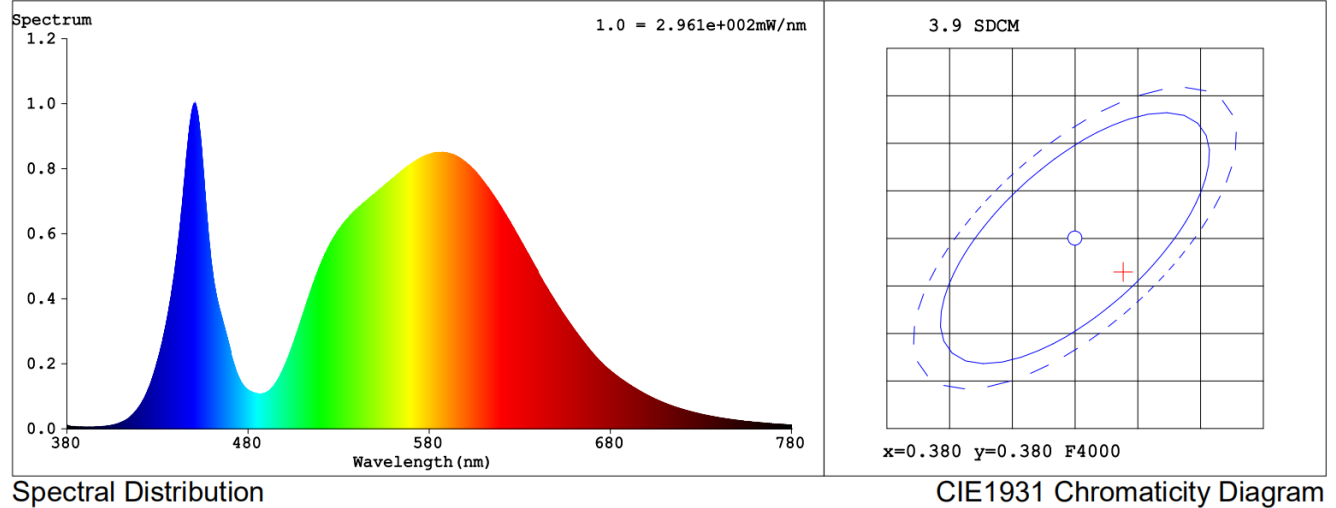
Prüfbericht Nr. / Test report no. 60397030 001

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

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Measured Results	
	EL-SL18LA-160W CLASS I T3VS 4000K
Total luminous flux (lm)	23127
Input wattage (W)	158.7
Input current (A)	0.7287
Frequency (Hz)	50
Power factor	0.9904
Efficacy (lm/W)	145.73
CCT (K)	3906
Chromaticity x	0.3838
Chromaticity y	0.3765
Chromaticity u'	0.2275
Chromaticity v'	0.5020
CRI	73.5
R9	0
Du'v' (Max.)	-0.00111
THDI(%)	4.718
LCS BUG Rating	B3-U0-G3, Semi cut-off

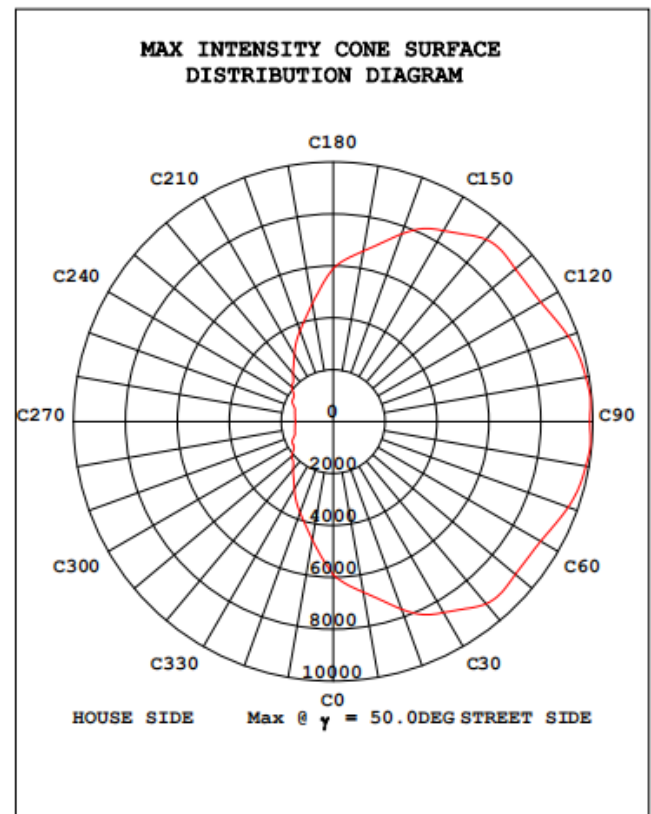
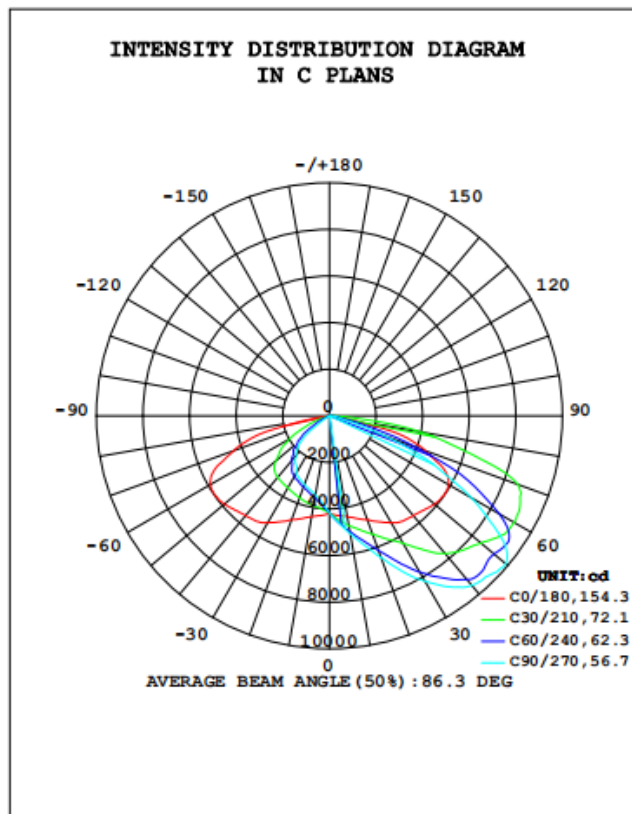
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Spectral power distribution: (Clause 10 of LM-79)
EL-SL18LA-160W CLASS I T3VS 4000K

Dominant WL: 580.0nm
Peak WL: 451nm
Luminous Intensity Distribution, Ambient temperature: 25°C (Clause 10 of LM-79)

Description	Data
Model	EL-SL18LA-160W CLASS I T3VS 4000K
Test voltage (V)	220VAC
Test current (A)	0.7287
Test wattage (W)	158.7
Frequency (Hz)	50
Power factor	0.9904
Central luminous intensity (cd)	4174.5
Max. luminous intensity(cd)	9945 (C=5, Gamma=50)

For the distribution curve see next page.
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DATA OF LAMP		PHOTOMETRIC DATA				Eff: 145.73 lm/W
MODEL	EL-SL18LA	I _{max} (cd)	9945	η street_up (%)	0.0	
NOMINAL POWER (W)	160	LOR (%)	100.0	η street_down (%)	75.8	
RATED VOLTAGE (V)	220-240	TOTAL FLUX (lm)	23127	η house_up (%)	0.0	
NOMINAL FLUX (lm)	23127.1	MAXIMUM @ (C, γ)	5,50.0	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	23.510	



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

Zone	Lumens	%Lamp	%Fixt
0-20	1685.68	7.30	7.30
0-30	3986.55	17.20	17.20
0-40	7446.3	32.20	32.20
0-60	16682.42	72.10	72.10
0-80	22802.99	98.60	98.60
0-90	23127.13	100.00	100.00
10-90	22720.17	98.20	98.20
20-40	5760.63	24.90	24.90
20-50	10184.67	44.00	44.00
40-70	13295.38	57.50	57.50
60-80	6120.59	26.50	26.50
70-80	2061.32	8.90	8.90
80-90	324.12	1.40	1.40
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	23127.13	100.00	100.00

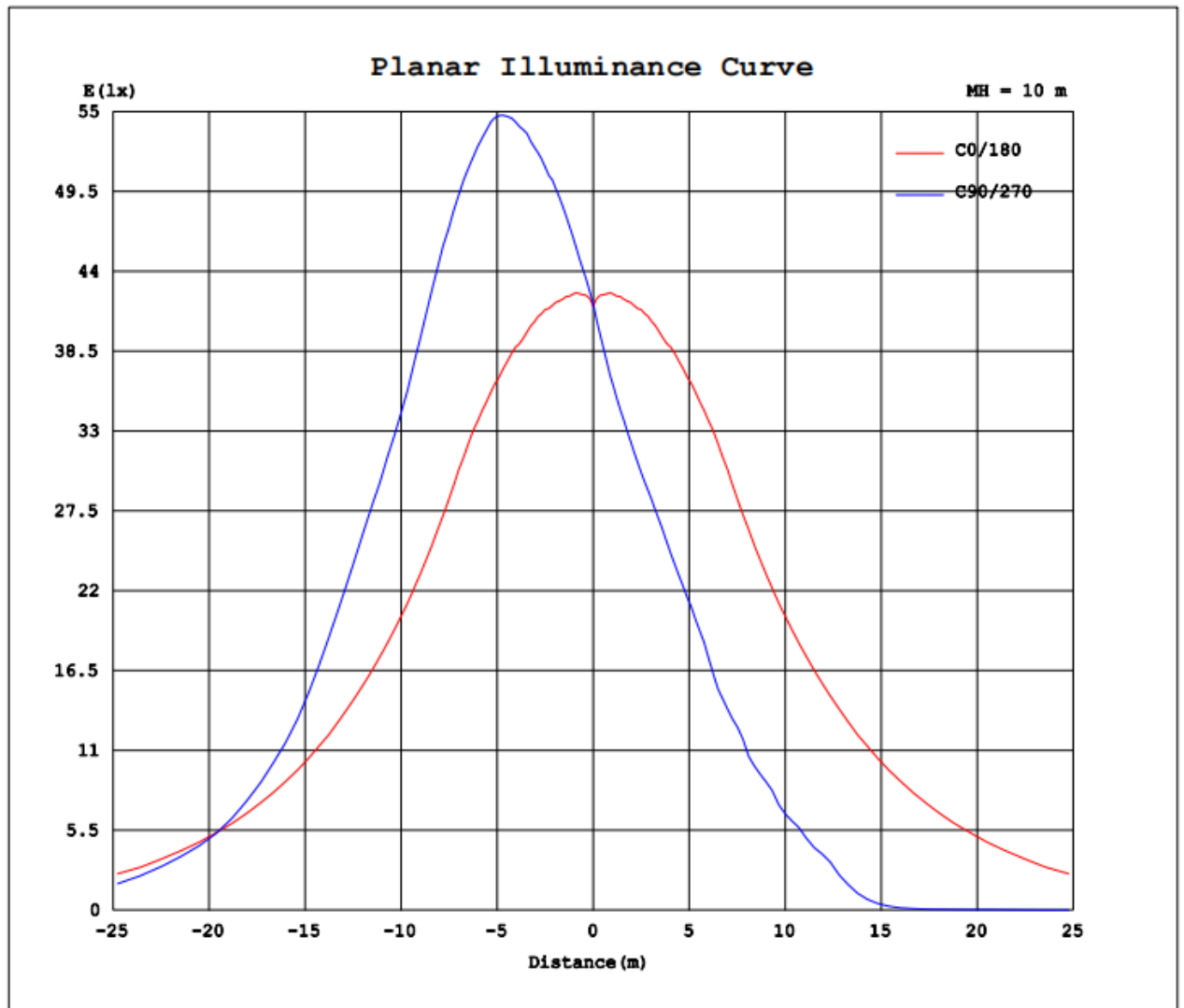
Total Luminaire Efficiency = 100.00%

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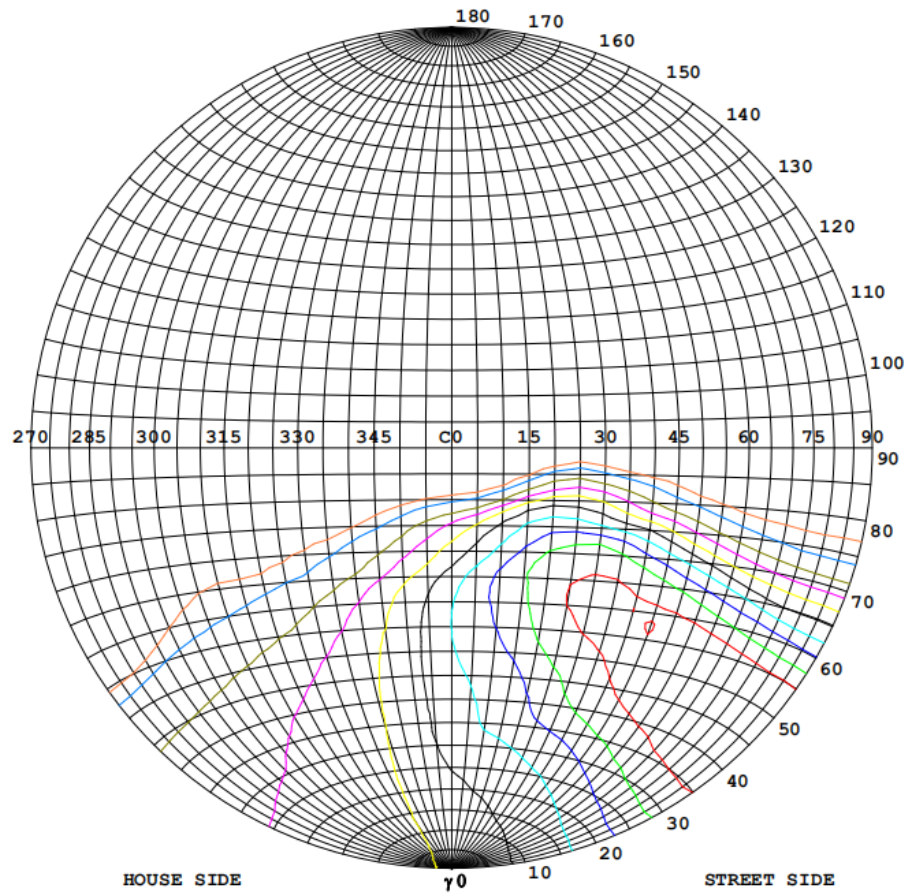
Luminous Intensity Distribution Data

KeyWords																								Candela												2D												3D																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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		0	5	10	15	20			25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
34	8824.80	8901.20	8848.30	8795.70	8637.70	8561.70	8343.20	8188.60	7927.50	7693.60	7389.30	7083.70	6860.70	6623.40	6409.40	6176.60	5999.30	5728.90	5474.70	5050.70	4683.10	4295.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

Keywords										Candela										20										30															
Vertical Angles		Horizontal Angles				Multipliers=1	Max. Cd.																																						
	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355	360																							
36	4286	200	4651	500	5080	1021	300	5782	900	6093	6433	300	6652	400	6902	200	7173	300	7411	900	7728	800	8032	100	8222	600	8446	400	8640	500	8887	900	9003	400	9095	200	9150	300	9170	200	9095	200			
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66	2656	600	3506	400	4280	800	5242	300	6203	400	7070	700	7895	100	8544	200	8808	700	8865	700	8923	800	8749	400	8026	600	7372	400	6713	200	6143	100	5423	300	4837	400	4586	800	4509	800	4480	400	4479	900	
67	2425	700	3301	100	4077	400	4964	000	5970	000	6883	600	7726	500	8521	800	8864	900	8889																										



STREETLIGHT ISOCANDELA DIAGRAM

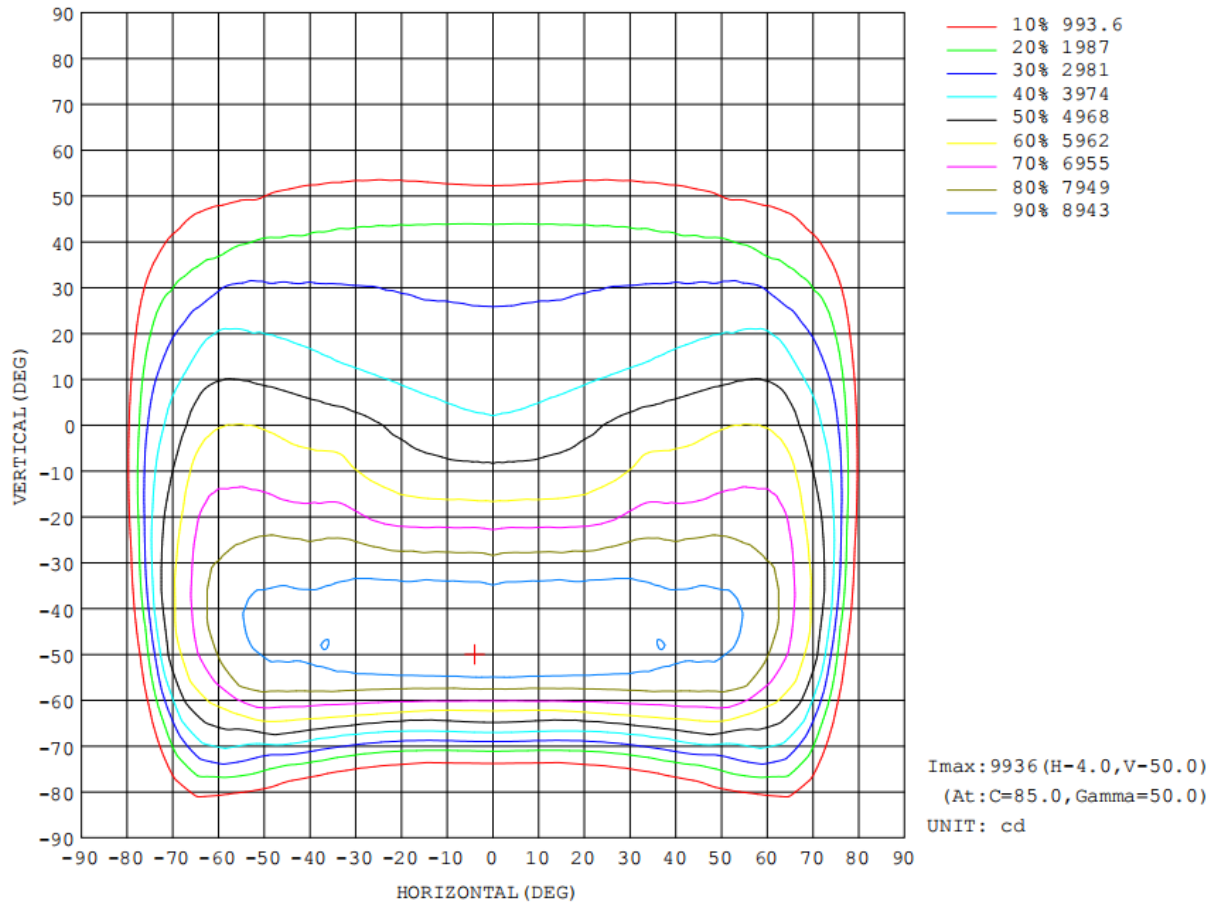


Classification:

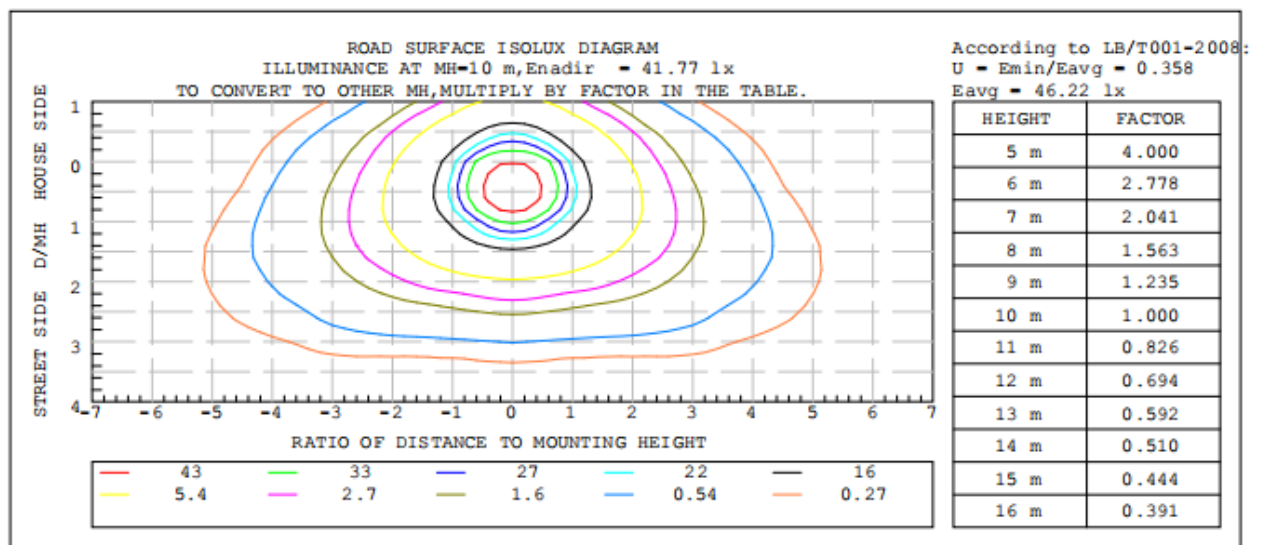
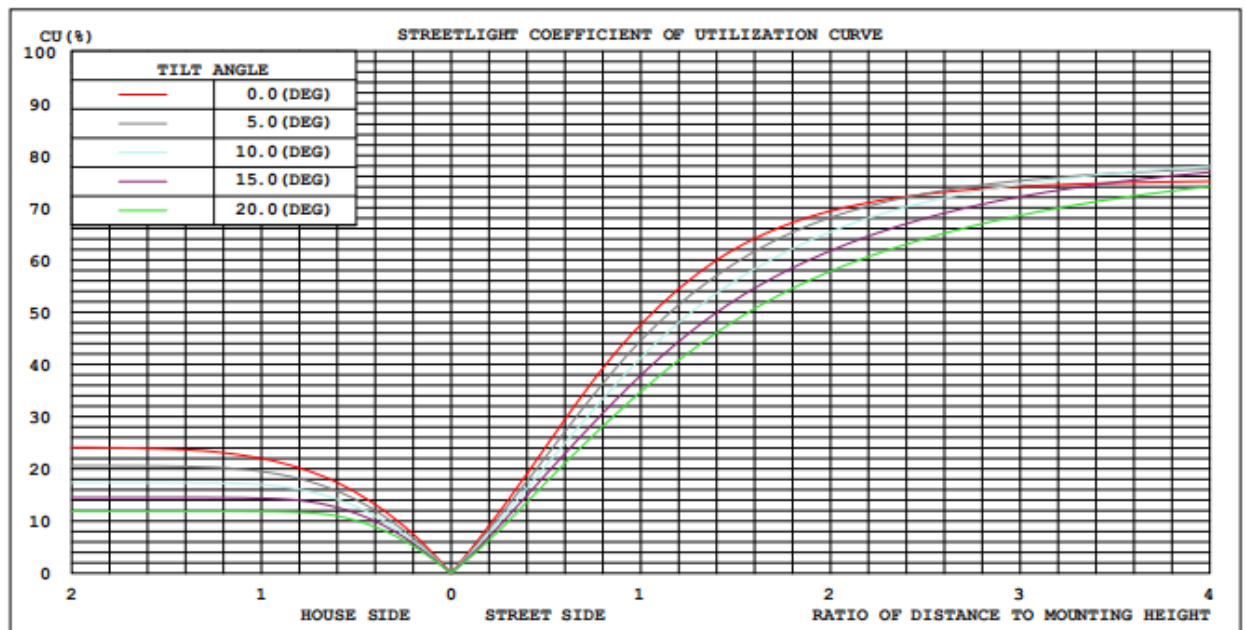
IES:Type III - Very Short
CIE:Average - Short
IES:Semi cut-off
CIE:Non-cut-off
Max.At80:194.3cd/klm
Max.At90:0cd/klm
Max.80-90:194.3cd/klm
NRB 5101:Semi limited[27.4%]

ISOCANDELA DIAGRAM	
UNIT	cd
Imax=100%	9945
90%	8950
80%	7956
70%	6961
60%	5967
50%	4972
40%	3978
30%	2983
20%	1989
10%	994
5%	497

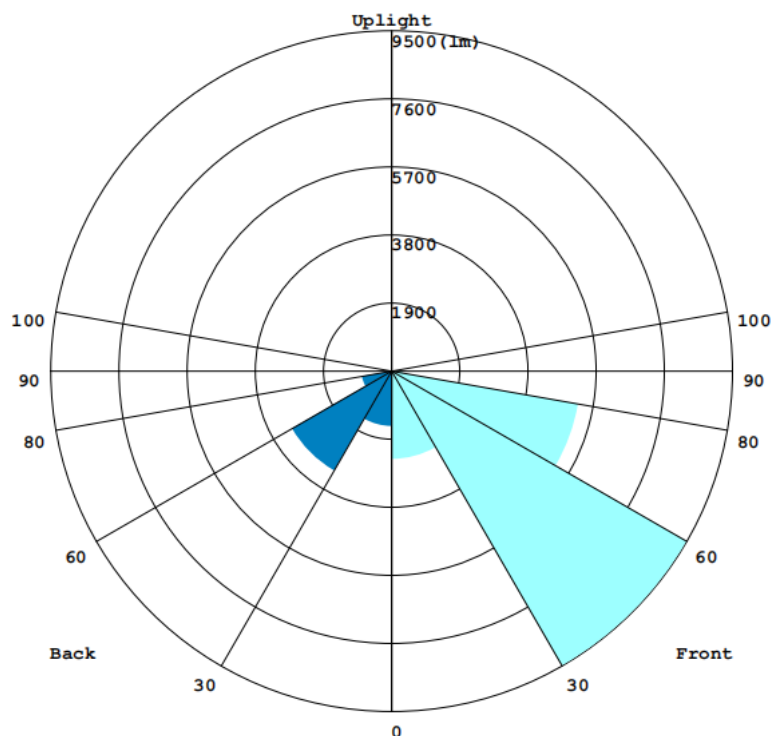
ISOCANDELA DIAGRAM



COEFFICIENT OF UTILIZATION CURVE AND ISOLUX DIAGRAM



LCS REPORT



IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	2452.1	10.6
FM - Front-Medium(30-60)	9493.4	41.0
FH - Front-High(60-80)	5279.5	22.8
FVH - Front-Very High(80-90)	316.64	1.4
Total Forward Light	17542	75.8

BL - Back-Low(0-30)	1534.5	6.6
BM - Back-Medium(30-60)	3202.4	13.8
BH - Back-High(60-80)	841.11	3.6
BVH - Back-Very High(80-90)	7.481	0.0
Total Back Light	5585.5	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-G3
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	5585.5	0	5585.5
Street Side	17542	0	17542

Photo



Overview



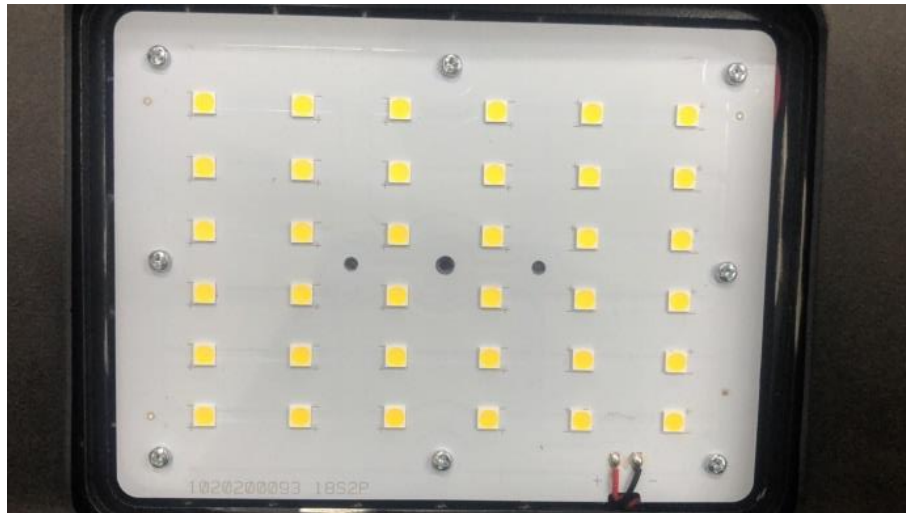
Back-side



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

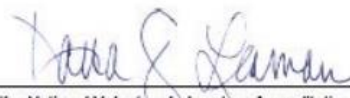
*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

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