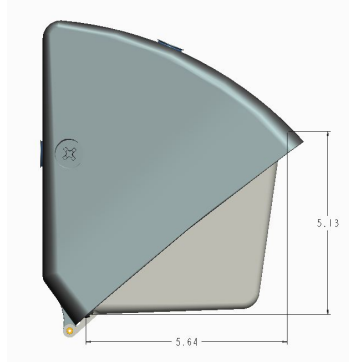


ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

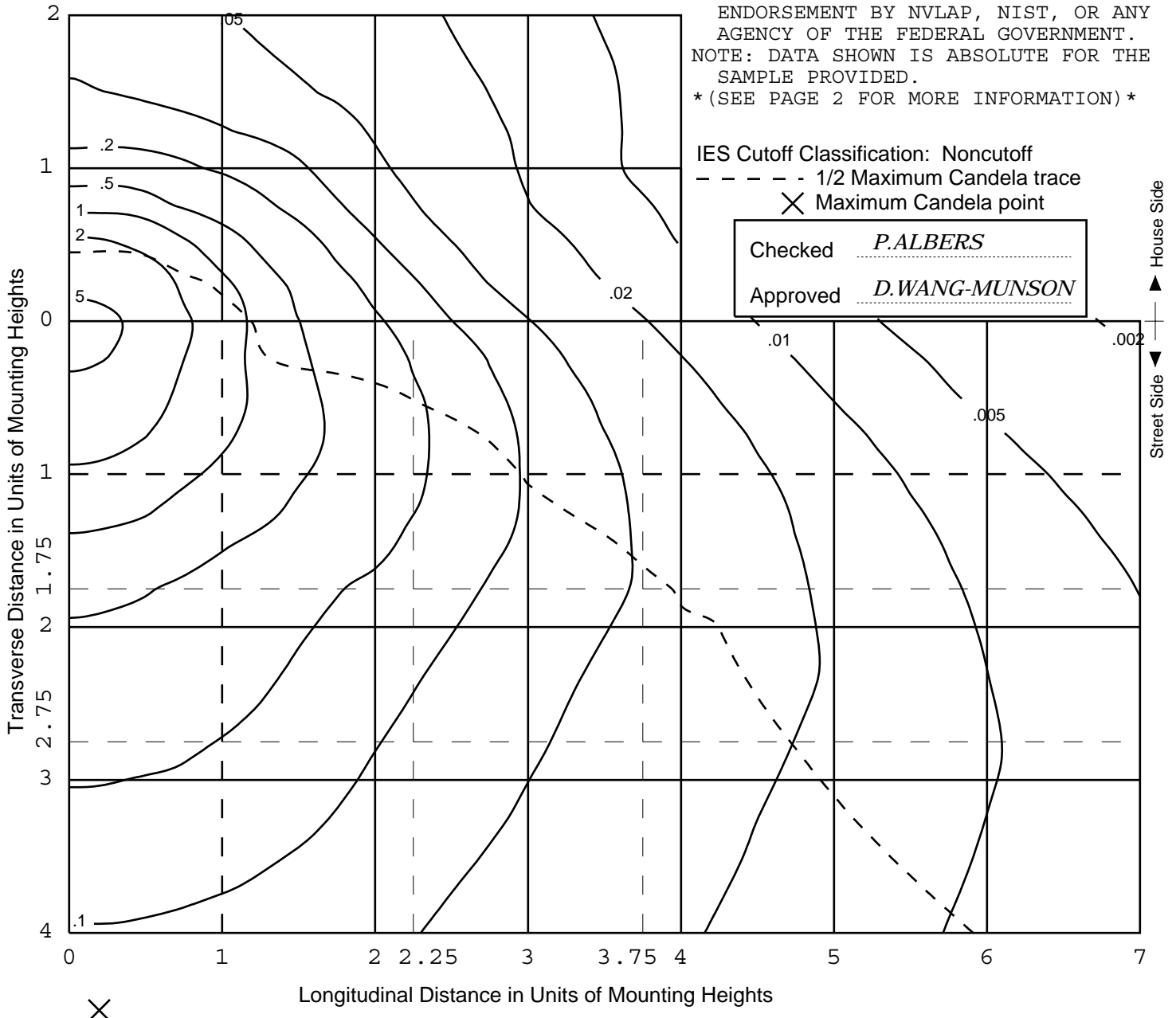
Values based on 12 foot mounting height.



REPORT NUMBER: RAB03106
 ISSUE DATE: 03/27/17 PAGE: 1 OF 9
 DATE SAMPLE TESTED: 03/27/17
 CATALOG NUMBER: WP1LED30N,
 WP1LED30N/D10 (STANDARD CUTOFF -
 PRISMATIC LEXAN LENS)
 LUMINAIRE: COMPACT WALLPACK WITH VANDAL
 RESISTANT PRISMATIC POLYCARBONATE
 REFRACTOR.
 LAMP: SEVENTY TWO WHITE LIGHT EMITTING
 DIODES (LEDs).
 NOTE: THIS REPORT WITH THE USE OF THE
 NVLAP LOGO SHALL NOT BE USED BY THE
 CLIENT TO CLAIM PRODUCT
 CERTIFICATION, APPROVAL, OR
 ENDORSEMENT BY NVLAP, NIST, OR ANY
 AGENCY OF THE FEDERAL GOVERNMENT.
 NOTE: DATA SHOWN IS ABSOLUTE FOR THE
 SAMPLE PROVIDED.
 (SEE PAGE 2 FOR MORE INFORMATION)

IES Cutoff Classification: Noncutoff

--- 1/2 Maximum Candela trace
 X Maximum Candela point



REPORT NUMBER: RAB03106

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CATALOG NUMBER: WP1LED30N, WP1LED30N/D10 (STANDARD CUTOFF - PRISMATIC LEXAN

ADDITIONAL INFORMATION

TOTAL INPUT WATTS = 29.623 W AT 277.0 VAC.

LED DRIVER: RDD-U26-A0720

TEST PROCEDURE: IESNA LM-79-08

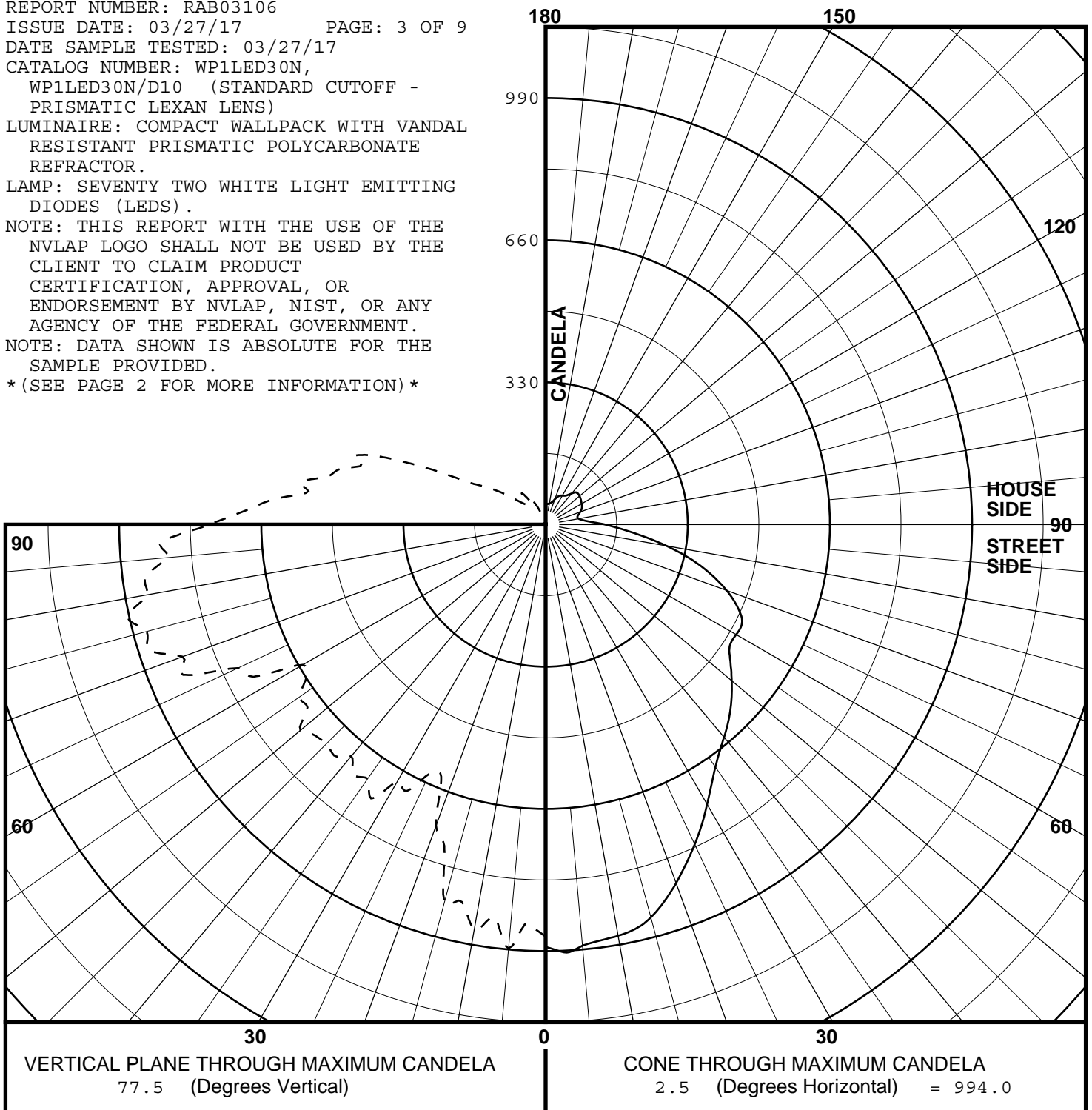
LM-80 DATA AVAILABLE FROM MANUFACTURER FOR SOLID STATE SOURCE

AMBIENT: 24.6

ACCREDITED LABORATORY CODE 201058-0

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

REPORT NUMBER: RAB03106
ISSUE DATE: 03/27/17 PAGE: 3 OF 9
DATE SAMPLE TESTED: 03/27/17
CATALOG NUMBER: WP1LED30N,
WP1LED30N/D10 (STANDARD CUTOFF -
PRISMATIC LEXAN LENS)
LUMINAIRE: COMPACT WALLPACK WITH VANDAL
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SAMPLE PROVIDED.
(SEE PAGE 2 FOR MORE INFORMATION)



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ISSUE DATE: 03/27/17

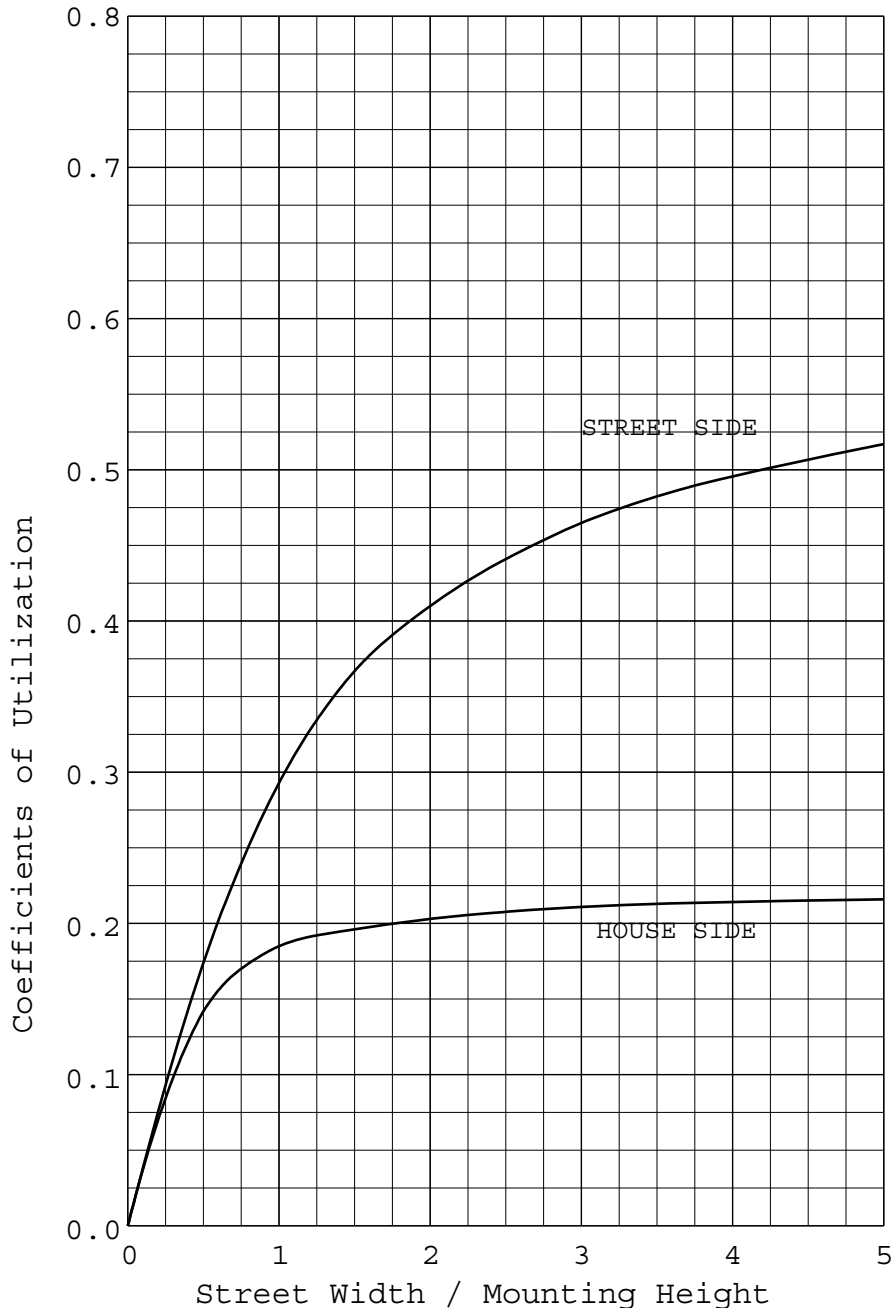
CATALOG NUMBER: WP1LED30N, WP1LED30N/D10

PAGE: 4 OF 9

DATE SAMPLE TESTED: 03/27/17

(STANDARD CUTOFF - PRISMATIC LEXAN

COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	2020.	59.6
DOWNWARD HOUSE SIDE	752.	22.2
DOWNWARD TOTAL	2772.	81.7
UPWARD STREET SIDE	567.	16.7
UPWARD HOUSE SIDE	54.	1.6
UPWARD TOTAL	621.	18.3
TOTAL FLUX	3392.	100.0
TOTAL INPUT WATTS = 29.6		
EFFICACY = 114.6 Lm/W		

ALL CANDELA AND LUMENS IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY.
THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE
LUMEN OUTPUT OF THIS LUMINAIRE SAMPLE.

REPORT NUMBER: RAB03106

ISSUE DATE: 03/27/17

CATALOG NUMBER: WP1LED30N, WP1LED30N/D10

PAGE: 5 OF 9

DATE SAMPLE TESTED: 03/27/17

(STANDARD CUTOFF - PRISMATIC

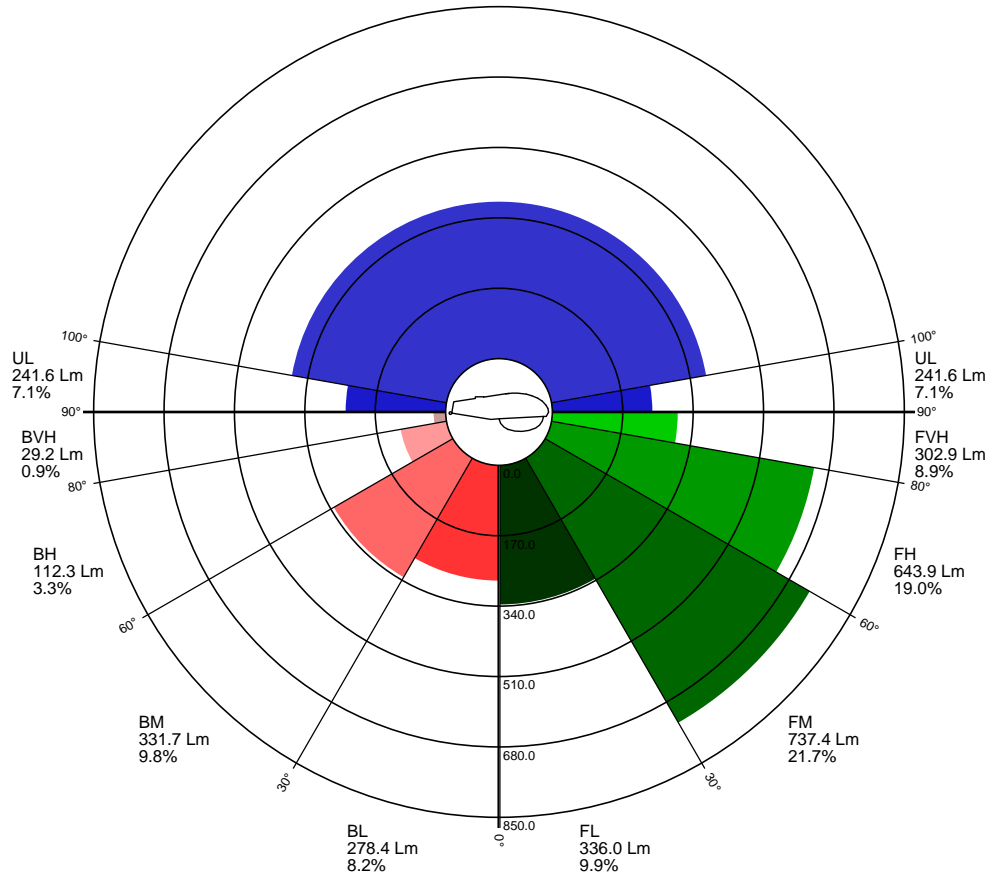
LEXAN LENS)

Zonal Summary		Lumens	% of Fixture	Zone Ratings		
				B	U	G
Forward		2020	59.6			
FL	(0° - 30°)	336.0	9.9			
FM	(30° - 60°)	737.4	21.7			
FH	(60° - 80°)	643.9	19.0			G0
FVH	(80° - 90°)	302.9	8.9			G3
Backward		752	22.2			
BL	(0° - 30°)	278.4	8.2	B1		
BM	(30° - 60°)	331.7	9.8	B1		
BH	(60° - 80°)	112.3	3.3	B1		G1
BVH	(80° - 90°)	29.2	0.9			G1
Upward		621	18.3			
UL	(90° - 100°)	241.6	7.1		U3	
UH	(100° - 180°)	379.0	11.2		U3	
Trapped Light		0	0.0			
Total Flux		3392	100.0			

Zonal Lumen Summary

(Linear scale)

UH
379.0 Lm
11.2%



REPORT NUMBER: RAB03106

ISSUE DATE: 03/27/17

CATALOG NUMBER: WP1LED30N, WP1LED30N/D10

LEXAN LENS)

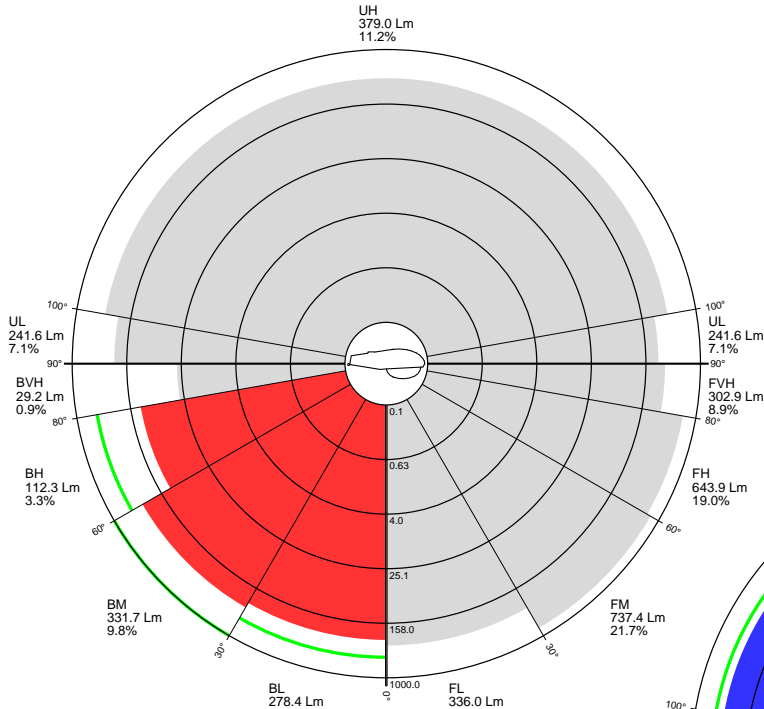
PAGE: 6 OF 9

DATE SAMPLE TESTED: 03/27/17

(STANDARD CUTOFF - PRISMATIC

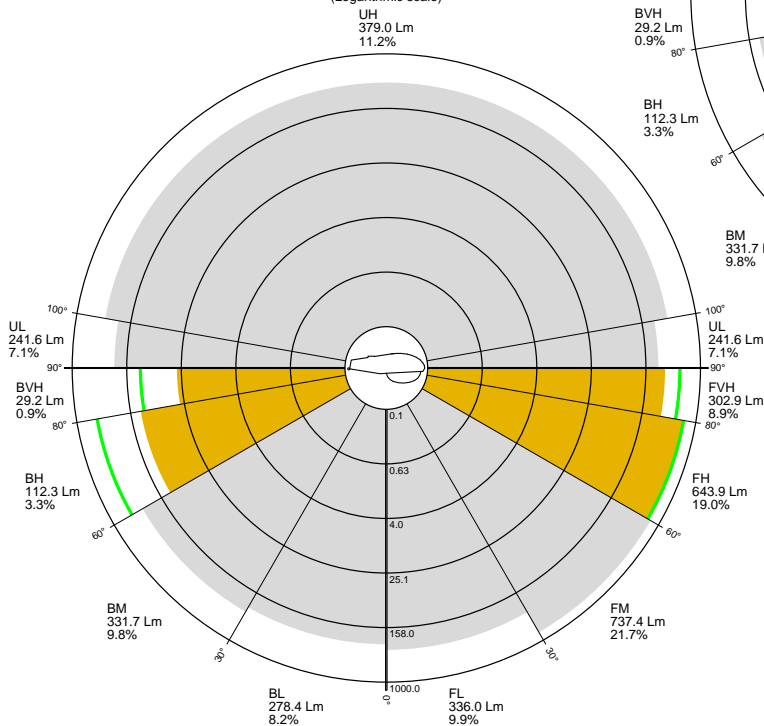
Backlight Rating Details

(Logarithmic scale)



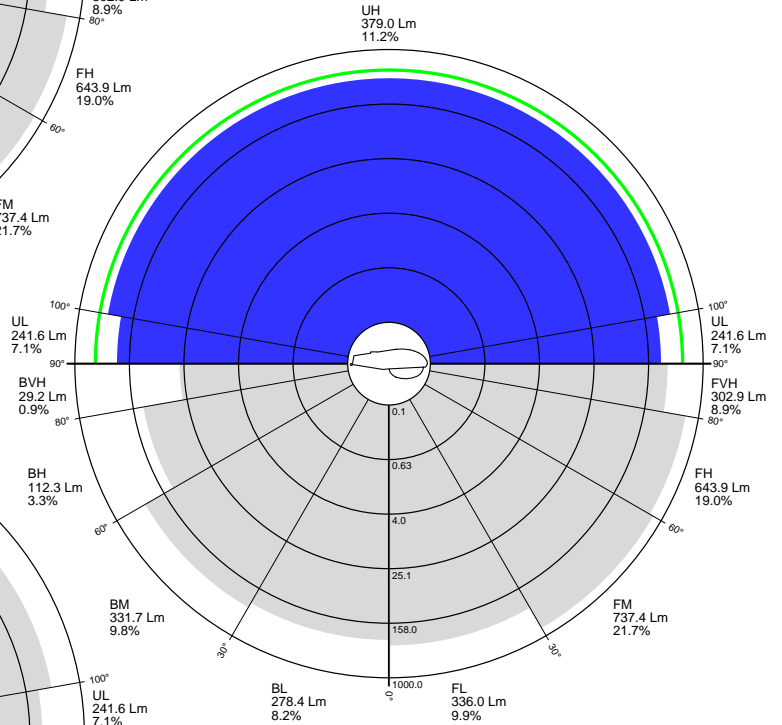
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)



REPORT NUMBER: RAB03106

ISSUE DATE: 03/27/17

CATALOG NUMBER: WP1LED30N, WP1LED30N/D10

PAGE: 7 OF 9

DATE SAMPLE TESTED: 03/27/17

(STANDARD CUTOFF - PRISMATIC LEXAN

CANDELA TABULATION

STREET SIDE		LATERAL ANGLE										
		0.0	2.5	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0
	180.0	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
	175.0	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.
	165.0	0.	0.	0.	0.	1.	1.	1.	2.	2.	2.	2.
	155.0	48.	46.	45.	42.	37.	27.	15.	8.	7.	5.	5.
	145.0	77.	77.	75.	71.	70.	71.	64.	56.	36.	28.	18.
	135.0	67.	67.	67.	69.	78.	89.	94.	96.	76.	54.	30.
	125.0	134.	135.	134.	134.	120.	105.	98.	94.	96.	90.	54.
	115.0	321.	321.	319.	322.	255.	197.	147.	123.	102.	83.	62.
	105.0	495.	496.	503.	515.	490.	415.	299.	191.	108.	77.	57.
	95.0	647.	643.	653.	663.	614.	540.	474.	356.	206.	97.	54.
	90.0	775.	780.	779.	796.	690.	614.	531.	430.	299.	152.	65.
	87.5	887.	889.	891.	843.	753.	626.	562.	459.	351.	197.	76.
	85.0	879.	882.	889.	897.	813.	668.	572.	482.	385.	240.	93.
V	82.5	944.	937.	942.	946.	821.	669.	597.	500.	441.	284.	119.
E	80.0	921.	940.	934.	936.	835.	707.	584.	510.	477.	322.	155.
R	77.5<<	980.	994.	981.	944.	819.	687.	607.	521.	501.	374.	199.
T	75.0	957.	959.	960.	917.	833.	688.	580.	537.	542.	412.	245.
I	72.5	970.	966.	960.	906.	783.	649.	574.	546.	544.	457.	302.
C	70.0	895.	897.	896.	870.	771.	637.	566.	571.	637.	497.	353.
A	67.5	906.	911.	904.	822.	710.	599.	564.	665.	579.	532.	380.
L	65.0	787.	788.	786.	745.	665.	575.	609.	675.	583.	519.	408.
	62.5	767.	765.	755.	692.	630.	593.	626.	682.	676.	577.	429.
A	60.0	648.	651.	650.	657.	626.	666.	714.	673.	609.	520.	430.
N	57.5	656.	658.	652.	674.	683.	681.	632.	686.	649.	510.	448.
G	55.0	705.	697.	692.	677.	671.	656.	678.	641.	632.	521.	456.
L	52.5	704.	697.	679.	727.	712.	672.	594.	683.	639.	514.	480.
E	50.0	758.	743.	729.	694.	673.	623.	637.	619.	645.	516.	498.
	47.5	720.	725.	703.	720.	677.	701.	629.	715.	557.	524.	533.
	45.0	729.	720.	706.	704.	693.	662.	681.	635.	531.	545.	546.
	42.5	734.	727.	709.	749.	686.	721.	637.	640.	534.	563.	581.
	40.0	704.	702.	694.	731.	728.	677.	687.	583.	551.	607.	588.
	37.5	744.	732.	717.	769.	710.	731.	617.	551.	574.	616.	630.
	35.0	731.	720.	705.	728.	745.	663.	656.	575.	621.	655.	668.
	30.0	701.	689.	682.	669.	679.	634.	610.	666.	689.	724.	711.
	25.0	635.	638.	636.	654.	635.	654.	715.	748.	781.	805.	805.
	20.0	750.	744.	743.	760.	752.	773.	854.	855.	874.	854.	842.
	15.0	908.	907.	903.	858.	854.	886.	894.	893.	899.	941.	905.
	10.0	955.	954.	952.	935.	902.	895.	921.	951.	972.	921.	915.
	5.0	990.	988.	987.	979.	962.	939.	929.	926.	916.	922.	943.
	0.0	956.	956.	956.	956.	956.	956.	956.	956.	956.	956.	956.

||
PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB03106

PAGE: 8 OF 9

ISSUE DATE: 03/27/17

DATE SAMPLE TESTED: 03/27/17

CATALOG NUMBER: WP1LED30N, WP1LED30N/D10 (STANDARD CUTOFF - PRISMATIC LEXAN)

CANDELA TABULATION

HOUSE SIDE		LATERAL ANGLE										
		90.0	95.0	105.0	115.0	125.0	135.0	145.0	155.0	165.0	175.0	180.0
V E R T I C A L A N G L E	180.0	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
	175.0	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.	0.
	165.0	2.	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.
	155.0	4.	4.	3.	3.	2.	2.	1.	1.	1.	0.	0.
	145.0	15.	12.	10.	9.	7.	4.	1.	1.	1.	1.	0.
	135.0	22.	19.	16.	16.	13.	9.	4.	1.	1.	1.	1.
	125.0	40.	32.	25.	22.	19.	13.	7.	2.	1.	1.	1.
	115.0	52.	45.	38.	31.	25.	18.	11.	5.	2.	2.	2.
	105.0	53.	53.	48.	40.	32.	24.	16.	8.	3.	3.	3.
	95.0	50.	52.	54.	53.	51.	44.	28.	13.	4.	4.	4.
	90.0	51.	50.	57.	64.	68.	60.	39.	17.	5.	4.	4.
	87.5	58.	53.	60.	70.	77.	68.	44.	19.	6.	4.	4.
	85.0	68.	58.	65.	76.	88.	80.	54.	26.	10.	7.	7.
	82.5	83.	67.	69.	81.	98.	88.	67.	39.	23.	17.	17.
	80.0	103.	79.	74.	86.	101.	94.	77.	55.	38.	34.	33.
	77.5<<	138.	95.	77.	93.	100.	104.	82.	73.	53.	48.	47.
	75.0	175.	117.	83.	98.	100.	113.	88.	76.	71.	59.	58.
	72.5	218.	147.	93.	101.	100.	110.	99.	78.	84.	88.	85.
	70.0	258.	180.	109.	106.	104.	104.	113.	85.	77.	88.	96.
	67.5	293.	221.	131.	112.	111.	99.	110.	98.	77.	66.	65.
	65.0	335.	262.	162.	122.	116.	99.	100.	109.	86.	71.	69.
	62.5	358.	295.	197.	139.	124.	104.	93.	107.	107.	96.	93.
	60.0	392.	327.	241.	165.	140.	107.	91.	94.	109.	111.	112.
	57.5	411.	375.	282.	198.	144.	116.	92.	80.	88.	96.	97.
	55.0	442.	413.	332.	233.	161.	132.	100.	81.	75.	75.	77.
	52.5	466.	448.	377.	272.	188.	147.	117.	92.	77.	70.	70.
	50.0	499.	476.	420.	317.	222.	167.	138.	109.	91.	79.	77.
	47.5	527.	509.	450.	370.	261.	196.	163.	132.	111.	98.	95.
	45.0	546.	531.	480.	410.	314.	234.	189.	157.	135.	119.	115.
	42.5	565.	550.	510.	443.	371.	289.	224.	184.	161.	146.	141.
	40.0	595.	570.	531.	475.	419.	359.	271.	219.	186.	173.	169.
	37.5	604.	604.	558.	503.	455.	414.	343.	280.	219.	201.	197.
35.0	639.	626.	586.	534.	487.	461.	402.	371.	284.	249.	243.	
30.0	725.	691.	644.	598.	551.	527.	493.	452.	450.	434.	427.	
25.0	776.	773.	707.	653.	607.	553.	566.	508.	488.	471.	471.	
20.0	838.	844.	777.	721.	662.	631.	565.	559.	576.	545.	537.	
15.0	905.	918.	856.	818.	747.	674.	664.	624.	607.	600.	597.	
10.0	934.	936.	891.	830.	839.	802.	791.	756.	703.	692.	690.	
5.0	952.	952.	921.	896.	870.	836.	819.	821.	826.	828.	832.	
0.0	956.	956.	956.	956.	956.	956.	956.	956.	956.	956.	956.	

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB03106
ISSUE DATE: 03/27/17
PREPARED FOR: RAB LIGHTING INC.

PAGE: 9 OF 9
DATE SAMPLE TESTED: 03/27/17

5-DEGREE ZONAL LUMEN SUMMARY

0- 5	22
5- 10	63
10- 15	99
15- 20	126
20- 25	144
25- 30	159
30- 35	172
35- 40	176
40- 45	179
45- 50	180
50- 55	180
55- 60	182
60- 65	186
65- 70	190
70- 75	193
75- 80	188
80- 85	176
85- 90	156
90- 95	132
95-100	110
100-105	92
105-110	76
110-115	59
115-120	41
120-125	30
125-130	23
130-135	17
135-140	15
140-145	12
145-150	7
150-155	4
155-160	2
160-165	0
165-170	0
170-175	0
175-180	0

10-DEGREE ZONAL LUMEN SUMMARY

0- 10	85
0- 20	311
0- 30	614
0- 40	962
0- 50	1321
0- 60	1683
0- 70	2059
0- 80	2440
0- 90	2772
0-100	3013
0-110	3181
0-120	3282
0-130	3335
0-140	3367
0-150	3386
0-160	3392
0-170	3392
0-180	3392

REPORT NUMBER: RAB03107
 DATE: 3/27/2017
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: WP1LED30/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

Page 1 of 4

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647
 LUMINAIRE: COMPACT WALLPACK WITH VANDAL RESISTANT PRISMATIC POLYCARBONATE REFRACTOR.

LAMP: SEVENTY TWO WHITE LIGHT EMITTING DIODES (LEDs).

DRIVER: RDD-U26-A0720

OBJECT OF TEST: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT THE RATED INPUT VOLTAGES (277.0 AND 120.0 VAC, 60Hz) TO THE TEST SAMPLE.

INSTRUMENTS:	GWINSTEK PROGRAMMABLE AC POWER SOURCE APS-7100	Calibration Due:
	CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202	N/A
	OCEAN OPTICS QE65PRO Spectroradiometer	3/01/18
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	03/07/18

OBJECT OF TEST: Measure the Absolute Flux in lumens*, Total Radiant Flux*, Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Indices (CRIa,1-14), Chromaticity Coordinates (x,y; u'v'), ANSI C78.377 Duv, and electrical data including ANSI C82.77-2002 Power Factor (PF), and Total Harmonic Distortion (THD) to the test sample. Measure electrical data including Total Harmonic Distortion (THD) at maximum nominal rated input voltage. Report Off-State Power.

PROCEDURE: The test sample was mounted inside the integrating sphere, energized, and allowed to stabilize. After stabilization occurred, measurements were taken. In order to measure mean performance, multiple data sets were recorded and averaged. Readings were taken with the test sample operating at 60 HZ input in a 25 +/-1 degree Celsius free air ambient and in accordance with IESNA LM-79-08. Electrical data was also recorded at maximum nominal rated input voltage (120.0 VAC). All data are traceable to the National Institute of Standards and Technology. Off-State Power was reported with no voltage applied to the sample.

*NOTE: Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even when these effects are compensated for, are likely to have a greater variation in results compared to the flux output calculated from a goniophotometric exploration since these artifacts do not affect the goniophotometric results.

RESULTS: (continued subsequent pages)

Checked	<u>X.CAO</u>
Approved	<u>D.WANG-MUNSON</u> Lighting Engineer

REPORT NUMBER: RAB03107
 DATE: 3/27/2017
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: WP1LED30/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

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RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	3392 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3792
Chromaticity Ordinate y	0.3780
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2238
Chromaticity Ordinate v'	0.5019
Correlated Color Temp CCT (K)	4042
ANSI C78.377-2008 Duv	0.001
Total Radiant Flux (milliWatts)	10405 *
ELECTRICAL	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.117
Input Power (Watts)	29.6
Input Power Factor (%)	91.6
Input Current THD (%)	16.4
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	114.6
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.248
Input Power (Watts)	29.5
Input Power Factor (%)	99.2
Input Current THD (%)	7.2
Input Voltage THD (%)	0.2
Off-State Power (Watts)	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	84
R1 Light greyish red	82
R2 Dark greyish yellow	89
R3 Strong yellowish green	95
R4 Moderate yellowish green	84
R5 Light bluish green	83
R6 Light blue	86
R7 Light violet	87
R8 Light reddish purple	66
R9 Strong red	12
R10 Strong yellow	75
R11 Strong green	83
R12 Strong blue	68
R13 Light yellowish pink (skin)	84
R14 Moderate olive green (leaf)	97

*NOTE:

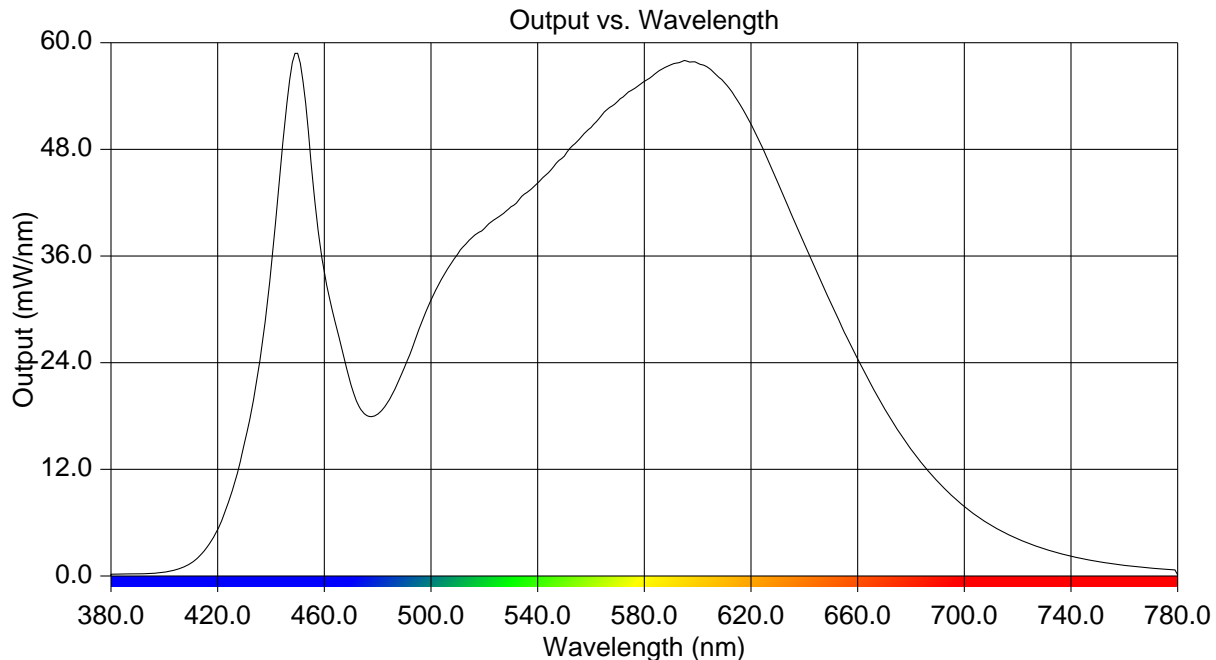
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even when these effects are compensated for, are likely to have a greater variation in results compared to the flux output calculated from a goniophotometric exploration since these artifacts do not affect the goniophotometric results.

REPORT NUMBER: RAB03107
 DATE: 3/27/2017
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: WP1LED30/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.195	515	37.988	650	30.690
385	0.209	520	39.091	655	27.407
390	0.241	525	40.342	660	24.420
395	0.303	530	41.539	665	21.526
400	0.432	535	42.960	670	18.878
405	0.750	540	44.199	675	16.426
410	1.462	545	45.687	680	14.267
415	2.839	550	47.228	685	12.328
420	5.214	555	48.930	690	10.624
425	9.168	560	50.450	695	9.125
430	14.901	565	52.205	700	7.820
435	22.565	570	53.394	705	6.667
440	34.359	575	54.609	710	5.702
445	50.408	580	55.650	715	4.885
450	58.798	585	56.727	720	4.185
455	46.562	590	57.518	725	3.576
460	34.157	595	57.997	730	3.049
465	27.459	600	57.696	735	2.598
470	21.497	605	56.971	740	2.214
475	18.291	610	55.522	745	1.904
480	18.230	615	53.466	750	1.631
485	20.229	620	50.761	755	1.393
490	23.433	625	47.788	760	1.205
495	27.375	630	44.284	765	1.029
500	31.086	635	40.788	770	0.887
505	33.894	640	37.352	775	0.764
510	36.209	645	34.001	780	0.115



REPORT NUMBER: RAB03107
DATE: 3/27/2017
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: WP1LED30/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

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CIE Chromaticity Diagram

