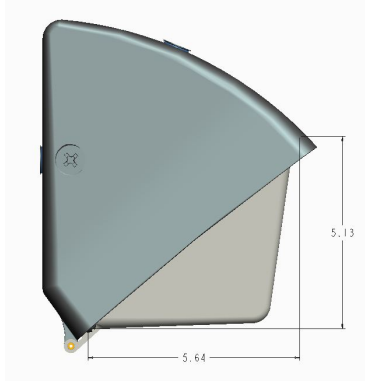


ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

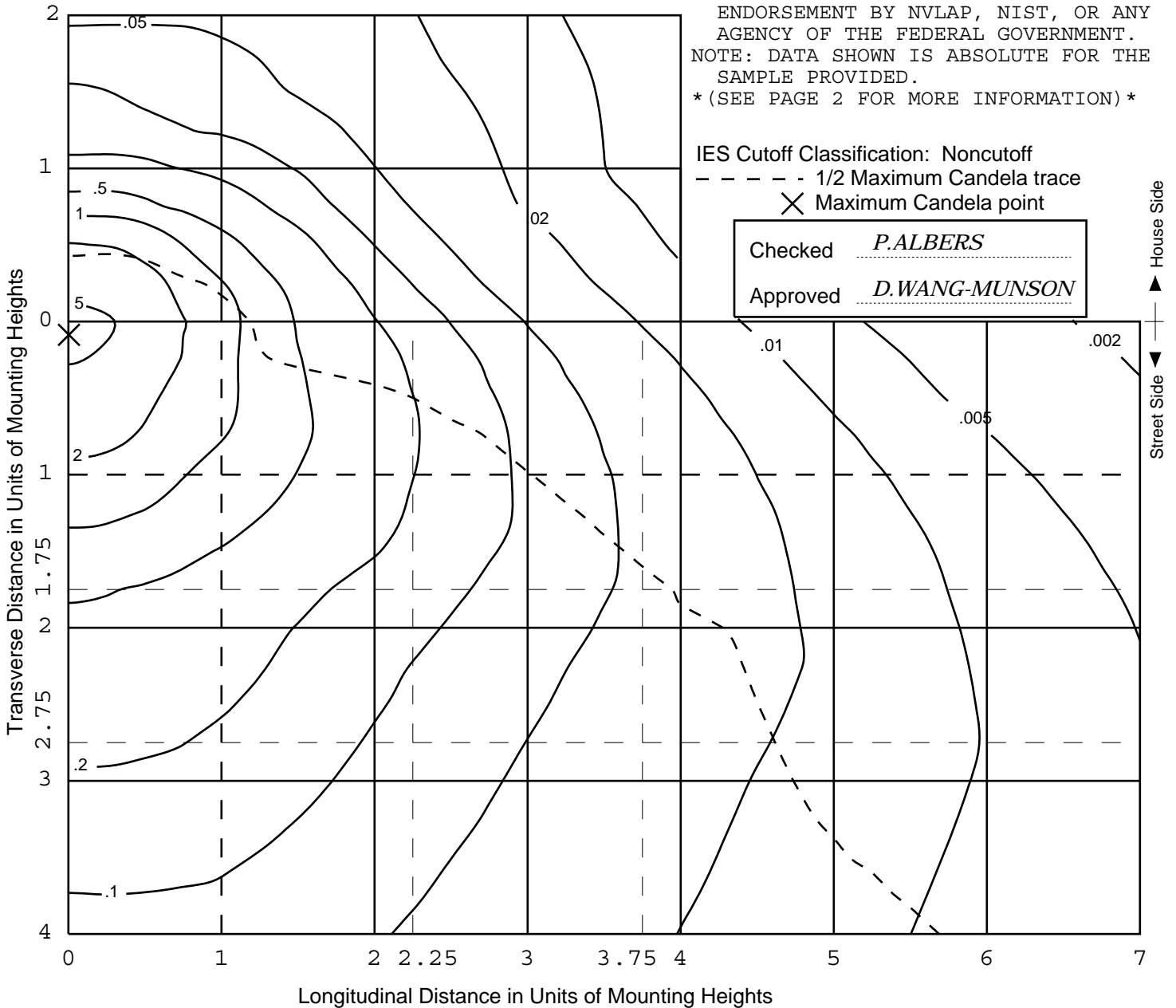
Values based on 12 foot mounting height.



REPORT NUMBER: RAB03174
 ISSUE DATE: 04/07/17 PAGE: 1 OF 9
 DATE SAMPLE TESTED: 04/07/17
 CATALOG NUMBER: WP1LED30N/480 (ALSO APPLIES TO 347/RCL) (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: RAB03174

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DATE SAMPLE TESTED: 04/07/17

CATALOG NUMBER: WP1LED30N/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PR

ADDITIONAL INFORMATION

TOTAL INPUT WATTS = 27.767 W AT 480.0 VAC.

LED DRIVER: RD-LT40-A0700-60PF

TEST PROCEDURE: IESNA LM-79-08

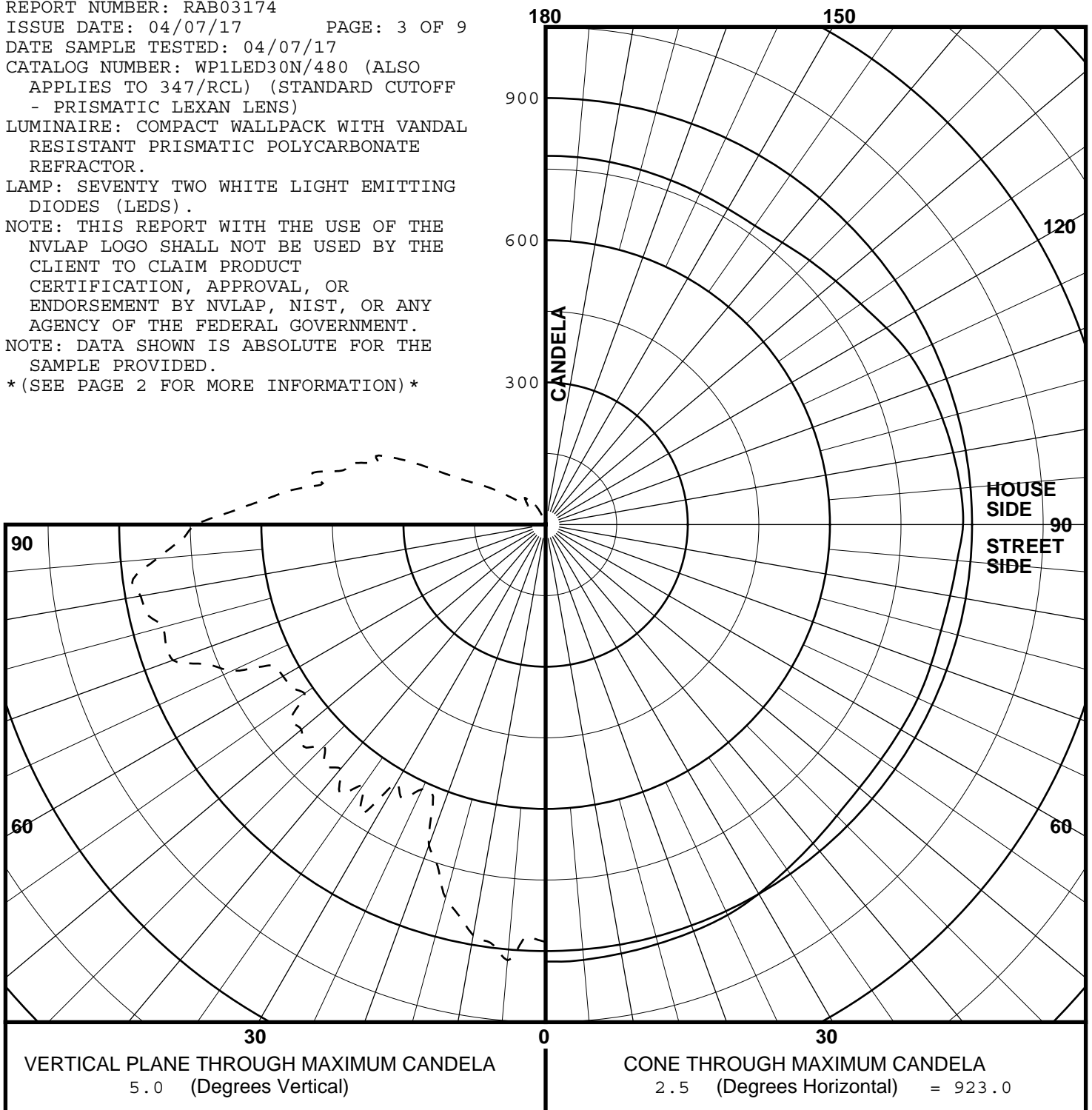
LM-80 DATA AVAILABLE FROM MANUFACTURER FOR SOLID STATE SOURCE

AMBIENT: 24.8

ACCREDITED LABORATORY CODE 201058-0 LED Outdoor, Damp Location, Wet Location, Architectural, Area, Canopy, Commercial, Dock, Educational Facade, Government, Harbor, Healthcare, Hospitality, Hotel, Industrial, Institutional, Library Manufacturing, Marine, Medical, Office, Parking, Parks, Pathway Pedestrian, Pool, Recreation, Residential, Retail, Site, Tunnel, Underpass, Utility, Walkway Warehouse, Water Treatment, Direct, Emergency, Security Surface, Wall 4000

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

REPORT NUMBER: RAB03174
 ISSUE DATE: 04/07/17 PAGE: 3 OF 9
 DATE SAMPLE TESTED: 04/07/17
 CATALOG NUMBER: WP1LED30N/480 (ALSO
 APPLIES TO 347/RCL) (STANDARD CUTOFF
 - PRISMATIC LEXAN LENS)
 LUMINAIRE: COMPACT WALLPACK WITH VANDAL
 RESISTANT PRISMATIC POLYCARBONATE
 REFRACTOR.
 LAMP: SEVENTY TWO WHITE LIGHT EMITTING
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 NOTE: DATA SHOWN IS ABSOLUTE FOR THE
 SAMPLE PROVIDED.
 (SEE PAGE 2 FOR MORE INFORMATION)



REPORT NUMBER: RAB03174

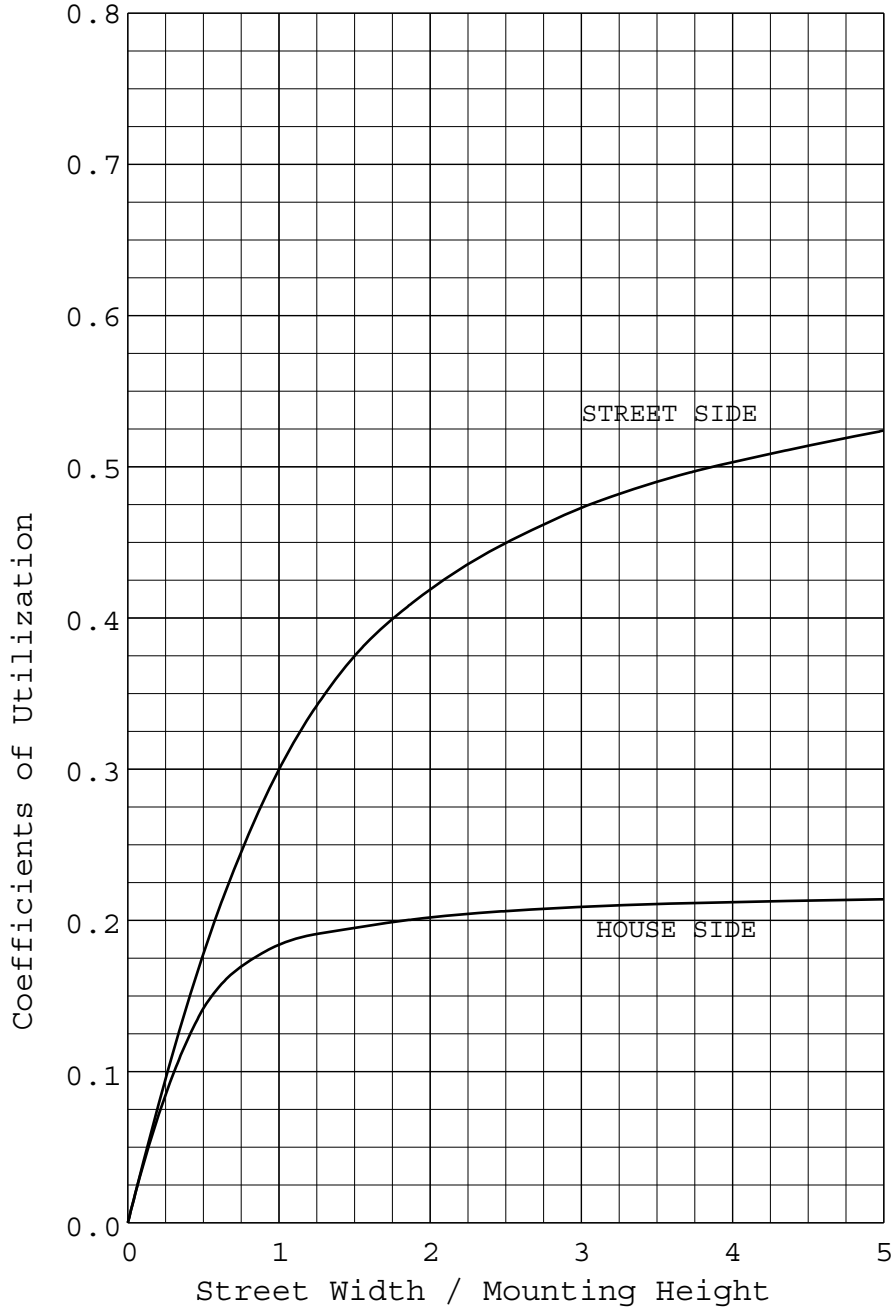
PAGE: 4 OF 9

ISSUE DATE: 04/07/17

DATE SAMPLE TESTED: 04/07/17

CATALOG NUMBER: WP1LED30N/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PR

COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	1880.	60.2
DOWNWARD HOUSE SIDE	683.	21.9
DOWNWARD TOTAL	2563.	82.1
UPWARD STREET SIDE	511.	16.4
UPWARD HOUSE SIDE	48.	1.5
UPWARD TOTAL	559.	17.9
TOTAL FLUX	3122.	100.0
TOTAL INPUT WATTS = 27.8		
EFFICACY = 112.3 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: RAB03174

ISSUE DATE: 04/07/17

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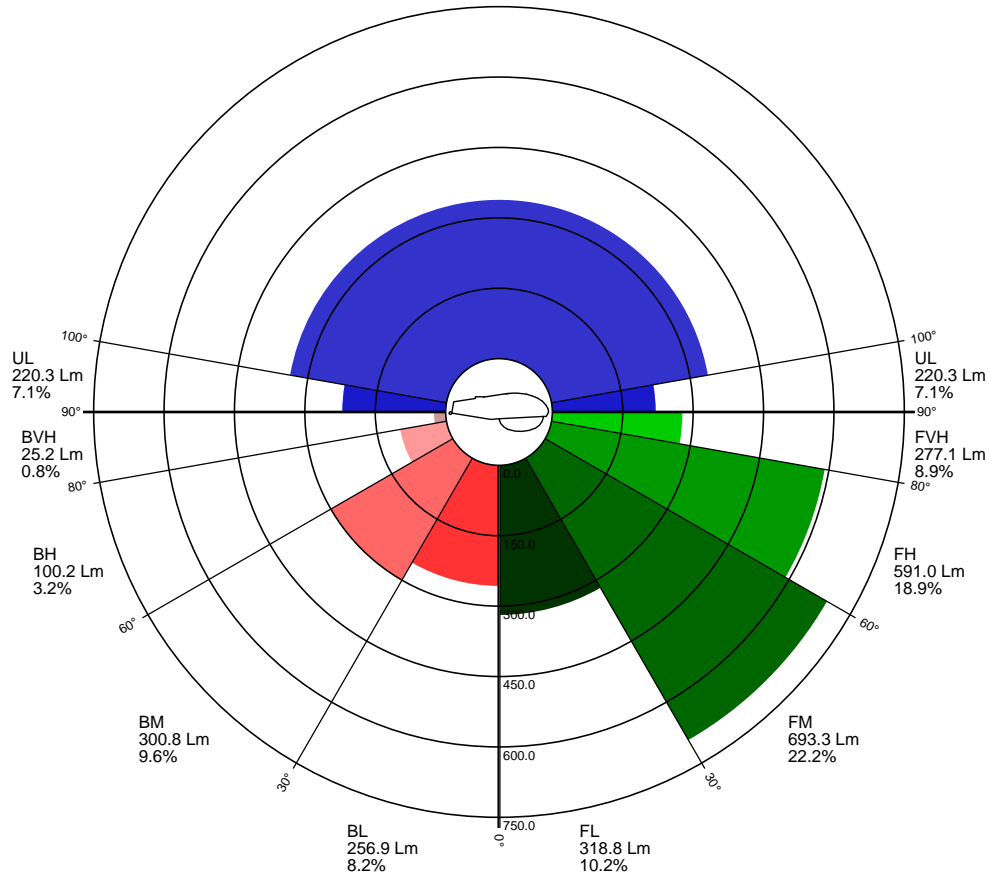
CATALOG NUMBER: WP1LED30N/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

Zonal Summary		Lumens	% of Fixture	Zone Ratings		
				B	U	G
Forward		1880	60.2			
FL	(0° - 30°)	318.8	10.2			
FM	(30° - 60°)	693.3	22.2			
FH	(60° - 80°)	591.0	18.9			G0
FVH	(80° - 90°)	277.1	8.9			G3
Backward		683	21.9			
BL	(0° - 30°)	256.9	8.2	B1		
BM	(30° - 60°)	300.8	9.6	B1		
BH	(60° - 80°)	100.2	3.2	B0		G0
BVH	(80° - 90°)	25.2	0.8			G1
Upward		559	17.9			
UL	(90° - 100°)	220.3	7.1		U3	
UH	(100° - 180°)	338.3	10.8		U3	
Trapped Light		0	0.0			
Total Flux		3122	100.0			

Zonal Lumen Summary

(Linear scale)

UH
338.3 Lm
10.8%



REPORT NUMBER: RAB03174

ISSUE DATE: 04/07/17

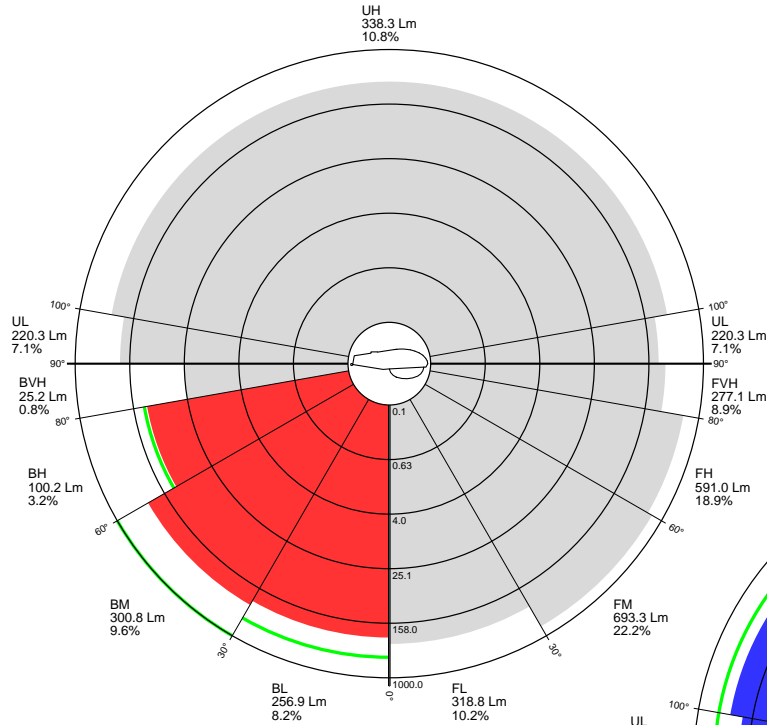
PAGE: 6 OF 9

CATALOG NUMBER: WP1LED30N/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF -

PRISMATIC LEXAN LENS)

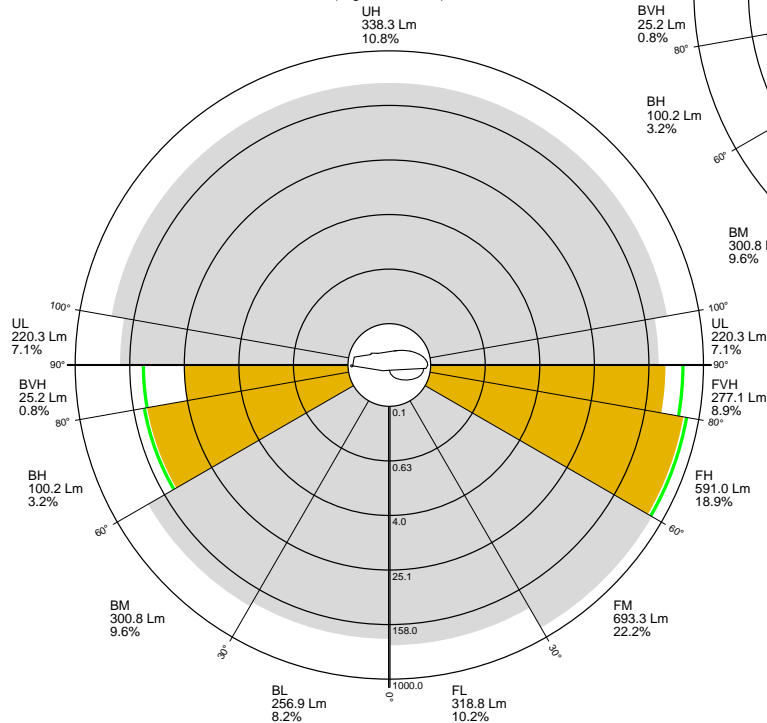
Backlight Rating Details

(Logarithmic scale)



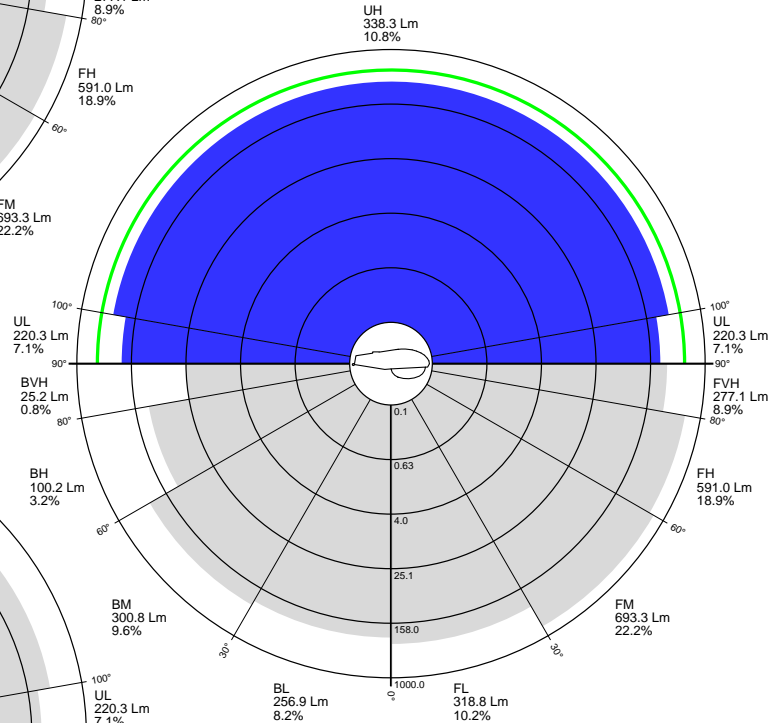
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)



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ISSUE DATE: 04/07/17

DATE SAMPLE TESTED: 04/07/17

CATALOG NUMBER: WP1LED30N/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PR

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.	1.	2.	2.	2.
	165.0	0.	0.	0.	1.	1.	1.	1.	2.	2.	2.	2.
	155.0	36.	35.	35.	31.	27.	18.	11.	8.	9.	7.	5.
	145.0	59.	60.	58.	54.	55.	56.	51.	44.	33.	28.	19.
	135.0	58.	58.	58.	59.	66.	72.	77.	77.	67.	54.	35.
	125.0	122.	122.	122.	120.	107.	92.	84.	81.	82.	78.	55.
	115.0	310.	311.	310.	301.	233.	183.	135.	108.	87.	71.	56.
	105.0	443.	442.	446.	479.	427.	375.	268.	171.	96.	68.	50.
	95.0	595.	597.	601.	610.	561.	492.	434.	328.	182.	88.	48.
	90.0	736.	738.	741.	741.	641.	556.	489.	395.	273.	137.	59.
	87.5	769.	771.	778.	777.	704.	575.	506.	418.	316.	178.	70.
	85.0	823.	823.	827.	823.	731.	606.	524.	439.	368.	223.	86.
V	82.5	877.	878.	881.	843.	744.	620.	533.	458.	403.	261.	110.
E	80.0	870.	868.	876.	854.	751.	632.	539.	466.	446.	307.	144.
R	77.5	863.	863.	867.	854.	749.	630.	542.	482.	467.	343.	186.
T	75.0	828.	836.	844.	853.	738.	616.	530.	499.	500.	389.	232.
I	72.5	829.	840.	843.	828.	724.	602.	523.	507.	544.	423.	282.
C	70.0	834.	837.	832.	796.	694.	575.	521.	584.	533.	468.	326.
A	67.5	762.	771.	773.	738.	658.	542.	531.	594.	558.	487.	361.
L	65.0	731.	731.	730.	694.	597.	538.	572.	622.	612.	499.	390.
	62.5	643.	646.	641.	613.	586.	591.	609.	628.	556.	491.	398.
A	60.0	640.	640.	632.	600.	606.	616.	626.	617.	618.	494.	407.
N	57.5	633.	637.	635.	651.	624.	652.	626.	618.	579.	480.	420.
G	55.0	624.	621.	623.	627.	679.	608.	601.	634.	630.	478.	430.
L	52.5	688.	678.	678.	691.	642.	622.	595.	606.	579.	478.	443.
E	50.0	680.	673.	667.	640.	659.	586.	588.	617.	556.	482.	470.
	47.5	701.	693.	686.	685.	628.	638.	628.	624.	531.	493.	485.
	45.0	660.	661.	658.	647.	682.	625.	633.	615.	504.	510.	515.
	42.5	697.	690.	683.	695.	653.	655.	651.	556.	508.	536.	533.
	40.0	672.	673.	661.	675.	708.	630.	629.	549.	526.	557.	562.
	37.5	717.	714.	699.	712.	659.	667.	604.	523.	552.	589.	593.
	35.0	676.	672.	660.	692.	725.	610.	593.	552.	588.	609.	611.
	30.0	631.	630.	632.	636.	653.	592.	587.	636.	669.	686.	673.
	25.0	616.	616.	615.	630.	615.	647.	690.	722.	746.	751.	750.
	20.0	722.	720.	719.	720.	736.	756.	791.	808.	811.	801.	796.
	15.0	816.	816.	814.	809.	831.	836.	854.	838.	852.	872.	847.
	10.0	877.	880.	879.	861.	854.	865.	892.	888.	904.	878.	856.
	5.0<<	922.	923.	922.	916.	909.	888.	869.	864.	867.	864.	872.
	0.0	881.	881.	881.	881.	881.	881.	881.	881.	881.	881.	881.

PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB03174

PAGE: 8 OF 9

ISSUE DATE: 04/07/17

DATE SAMPLE TESTED: 04/07/17

CATALOG NUMBER: WP1LED30N/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PR

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
	180.0	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
	175.0	2.	2.	2.	2.	1.	1.	1.	0.	0.	0.
	165.0	2.	2.	2.	2.	2.	1.	1.	1.	0.	1.
	155.0	4.	4.	3.	3.	2.	2.	1.	1.	0.	1.
	145.0	14.	11.	8.	6.	5.	3.	1.	1.	1.	1.
	135.0	26.	21.	15.	13.	10.	6.	3.	1.	1.	1.
	125.0	42.	33.	24.	20.	16.	10.	5.	2.	1.	1.
	115.0	48.	42.	33.	28.	21.	15.	9.	4.	2.	2.
	105.0	47.	46.	42.	35.	28.	21.	13.	6.	3.	3.
	95.0	44.	46.	48.	47.	46.	38.	24.	11.	4.	4.
	90.0	46.	45.	50.	57.	60.	51.	33.	14.	5.	4.
	87.5	52.	47.	53.	62.	67.	58.	38.	16.	6.	4.
	85.0	62.	52.	57.	67.	75.	68.	45.	21.	8.	6.
V	82.5	75.	60.	62.	70.	84.	75.	56.	31.	17.	13.
E	80.0	95.	72.	66.	74.	89.	80.	67.	43.	31.	28.
R	77.5	126.	88.	71.	80.	88.	85.	71.	58.	43.	41.
T	75.0	162.	108.	76.	86.	88.	96.	76.	70.	56.	50.
I	72.5	203.	137.	85.	90.	87.	99.	81.	69.	75.	62.
C	70.0	247.	171.	100.	95.	90.	94.	93.	72.	74.	84.
A	67.5	286.	207.	121.	103.	96.	90.	101.	78.	70.	71.
L	65.0	308.	242.	151.	112.	101.	88.	93.	92.	69.	59.
	62.5	345.	281.	185.	127.	109.	90.	85.	97.	86.	69.
A	60.0	358.	315.	223.	150.	124.	94.	82.	89.	100.	95.
N	57.5	384.	353.	266.	181.	133.	102.	83.	78.	89.	98.
G	55.0	412.	380.	304.	213.	148.	116.	87.	74.	72.	77.
L	52.5	434.	414.	348.	251.	171.	132.	101.	79.	69.	66.
E	50.0	458.	445.	378.	288.	201.	154.	119.	95.	77.	69.
	47.5	485.	464.	418.	334.	237.	180.	143.	113.	95.	84.
	45.0	507.	488.	446.	367.	282.	215.	171.	138.	115.	104.
	42.5	526.	508.	466.	404.	333.	258.	200.	167.	141.	127.
	40.0	542.	529.	489.	430.	378.	319.	235.	199.	169.	155.
	37.5	572.	551.	508.	459.	411.	373.	297.	243.	196.	183.
	35.0	602.	578.	533.	485.	443.	412.	360.	315.	244.	219.
	30.0	671.	646.	593.	541.	503.	478.	443.	406.	390.	384.
	25.0	728.	727.	655.	594.	558.	510.	509.	465.	450.	437.
	20.0	786.	779.	721.	669.	612.	577.	527.	510.	521.	502.
	15.0	845.	839.	785.	752.	698.	630.	607.	581.	561.	554.
	10.0	868.	868.	830.	775.	775.	750.	732.	704.	656.	644.
	5.0<<	881.	879.	867.	848.	812.	788.	770.	771.	775.	778.
	0.0	881.	881.	881.	881.	881.	881.	881.	881.	881.	881.

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB03174
ISSUE DATE: 04/07/17
PREPARED FOR: RAB LIGHTING INC.

PAGE: 9 OF 9
DATE SAMPLE TESTED: 04/07/17

5-DEGREE ZONAL LUMEN SUMMARY

0- 5	21
5- 10	60
10- 15	93
15- 20	118
20- 25	136
25- 30	149
30- 35	159
35- 40	163
40- 45	166
45- 50	167
50- 55	168
55- 60	171
60- 65	170
65- 70	175
70- 75	176
75- 80	170
80- 85	160
85- 90	142
90- 95	120
95-100	100
100-105	83
105-110	68
110-115	53
115-120	38
120-125	27
125-130	20
130-135	15
135-140	12
140-145	10
145-150	6
150-155	3
155-160	1
160-165	0
165-170	0
170-175	0
175-180	0

10-DEGREE ZONAL LUMEN SUMMARY

0- 10	80
0- 20	291
0- 30	576
0- 40	898
0- 50	1231
0- 60	1570
0- 70	1915
0- 80	2261
0- 90	2563
0-100	2784
0-110	2935
0-120	3026
0-130	3073
0-140	3101
0-150	3117
0-160	3121
0-170	3122
0-180	3122

REPORT NUMBER: RAB03175
 DATE: 4/6/2017
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: WP1LED30N/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

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: RD-LT40-A0700-60PF

OBJECT OF TEST: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT THE RATED INPUT VOLTAGES (480.0 AND 347.0 VAC, 60Hz) TO THE TEST SAMPLE.

INSTRUMENTS:	GWINSTEK PROGRAMMABLE AC POWER SOURCE APS-7100	Calibration Due: N/A
	CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202	3/01/18
	OCEAN OPTICS QE65PRO Spectroradiometer	03/07/18
	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 (347.0 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: RAB03175
 DATE: 4/6/2017
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: WP1LED30N/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

Page 2 of 4

RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	3122 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3782
Chromaticity Ordinate y	0.3762
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2238
Chromaticity Ordinate v'	0.5010
Correlated Color Temp CCT (K)	4058
ANSI C78.377-2008 Duv	0.000
Total Radiant Flux (milliWatts)	9655 *
ELECTRICAL	
Input Voltage (Volts AC)	480.0
Input Current (Amps AC)	0.063
Input Power (Watts)	27.8
Input Power Factor (%)	91.4
Input Current THD (%)	6.4
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	112.3
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	347.0
Input Current (Amps AC)	0.080
Input Power (Watts)	27.5
Input Power Factor (%)	99.3
Input Current THD (%)	9.5
Input Voltage THD (%)	0.2
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	85
R1 Light greyish red	83
R2 Dark greyish yellow	90
R3 Strong yellowish green	95
R4 Moderate yellowish green	85
R5 Light bluish green	84
R6 Light blue	87
R7 Light violet	87
R8 Light reddish purple	68
R9 Strong red	16
R10 Strong yellow	76
R11 Strong green	84
R12 Strong blue	69
R13 Light yellowish pink (skin)	85
R14 Moderate olive green (leaf)	97

*NOTE:

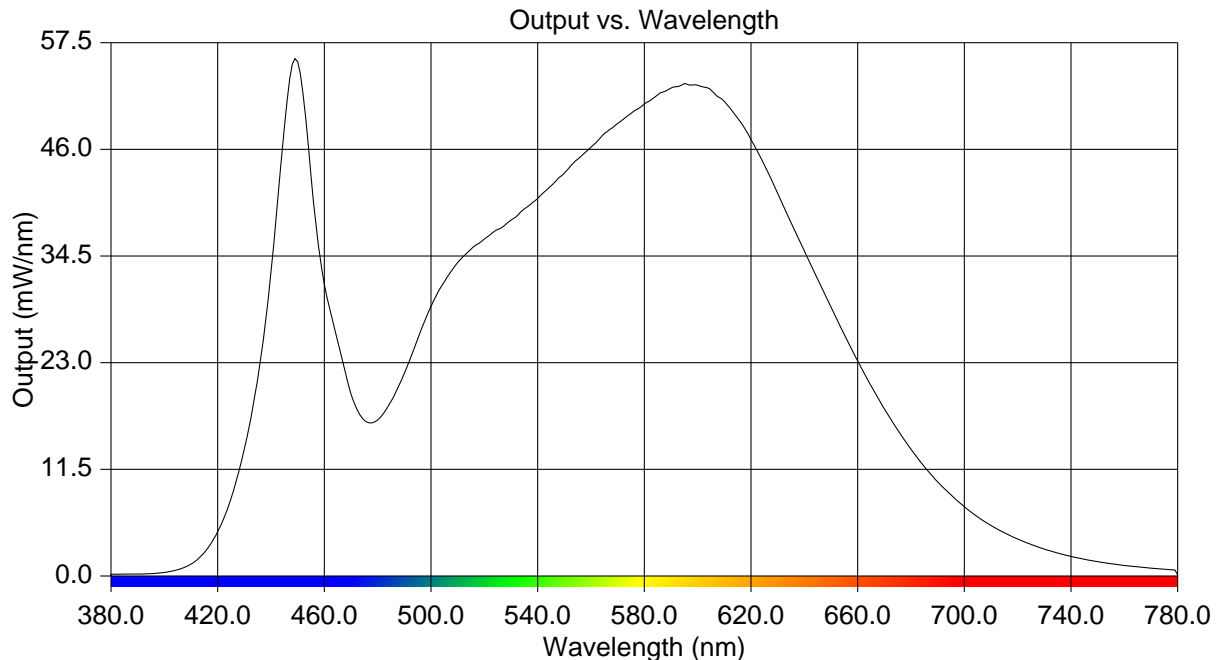
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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: RAB03175
 DATE: 4/6/2017
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: WP1LED30N/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

Page 3 of 4

RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.176	515	35.235	650	28.953
385	0.187	520	36.327	655	26.002
390	0.210	525	37.369	660	23.213
395	0.253	530	38.366	665	20.539
400	0.382	535	39.587	670	18.016
405	0.666	540	40.696	675	15.714
410	1.287	545	42.043	680	13.662
415	2.524	550	43.378	685	11.790
420	4.751	555	44.929	690	10.139
425	8.360	560	46.231	695	8.733
430	13.712	565	47.699	700	7.465
435	21.219	570	48.799	705	6.368
440	32.635	575	49.876	710	5.447
445	48.318	580	50.890	715	4.652
450	55.442	585	51.868	720	3.982
455	43.165	590	52.603	725	3.405
460	31.443	595	53.096	730	2.899
465	25.322	600	52.902	735	2.472
470	19.616	605	52.411	740	2.101
475	16.809	610	51.173	745	1.798
480	16.829	615	49.375	750	1.547
485	18.816	620	47.052	755	1.324
490	21.870	625	44.389	760	1.141
495	25.574	630	41.224	765	0.976
500	29.094	635	38.123	770	0.841
505	31.718	640	35.047	775	0.731
510	33.805	645	31.993	780	0.109



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DATE: 4/6/2017
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: WP1LED30N/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

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CIE Chromaticity Diagram

