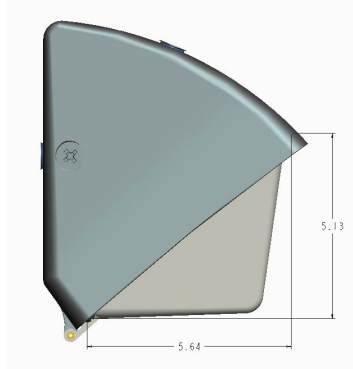


ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

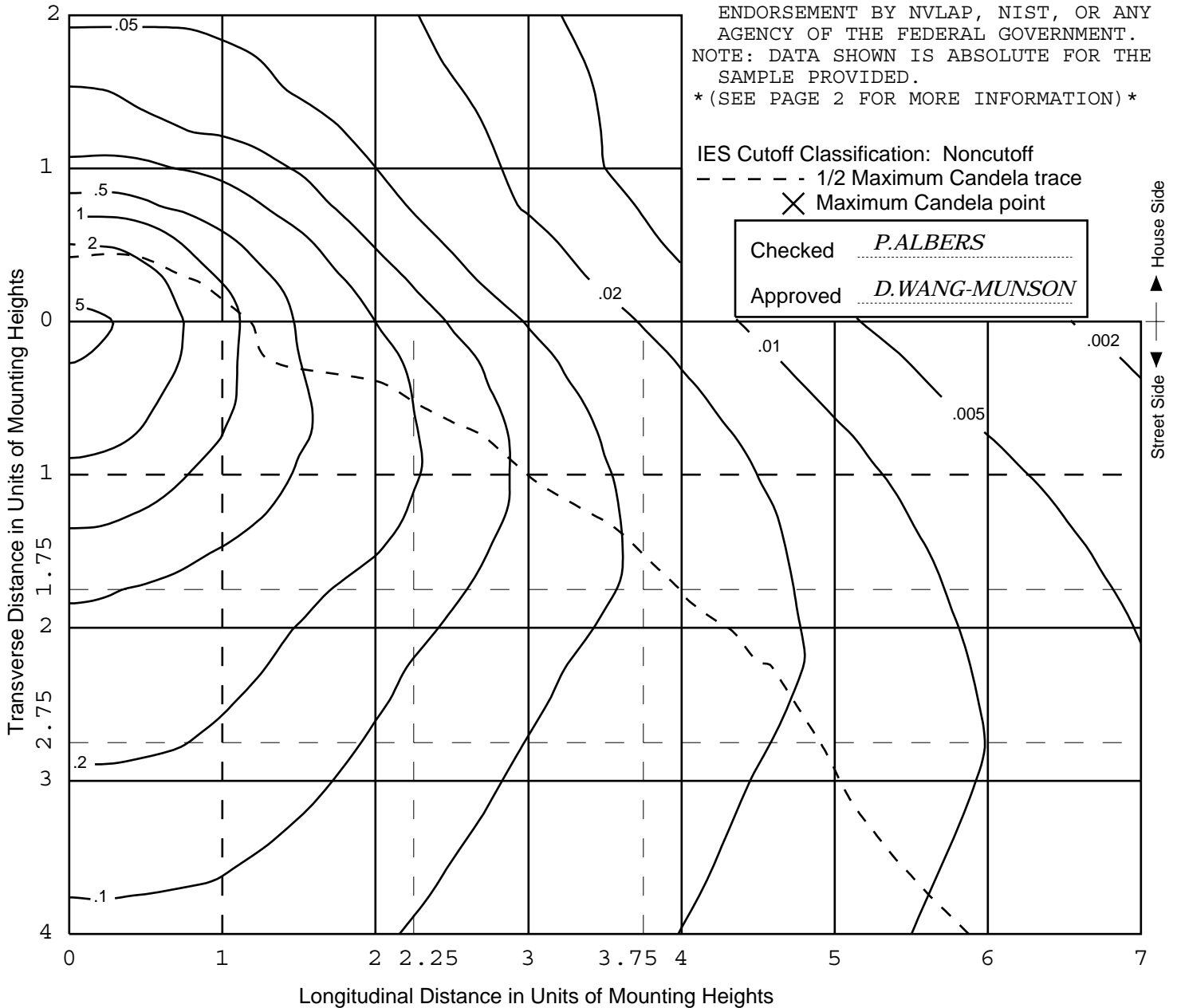
Values based on 12 foot mounting height.



REPORT NUMBER: RAB03098
 ISSUE DATE: 03/27/17 PAGE: 1 OF 9
 DATE SAMPLE TESTED: 03/27/17
 CATALOG NUMBER: WP1LED30/480 (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



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CATALOG NUMBER: WP1LED30/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRI

ADDITIONAL INFORMATION

TOTAL INPUT WATTS = 28.296 W AT 480.0 VAC.

LED DRIVER: RD-LT40-A0700-60PF

TEST PROCEDURE: IESNA LM-79-08

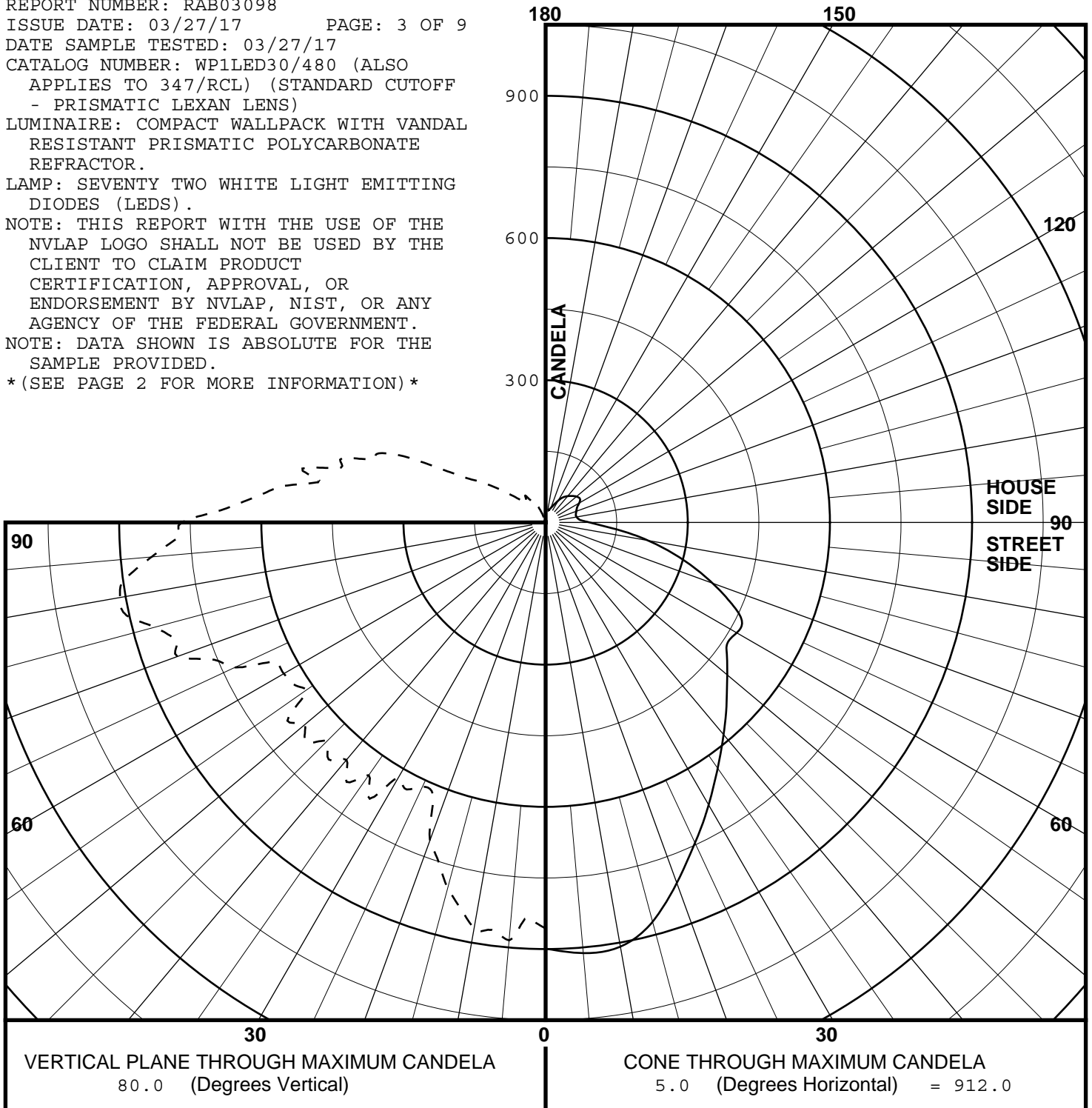
AMBIENT: 24.9

LM-80 DATA AVAILABLE FROM MANUFACTURER FOR SOLID STATE SOURCE

ACCREDITED LABORATORY CODE 201058-0

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

REPORT NUMBER: RAB03098
 ISSUE DATE: 03/27/17 PAGE: 3 OF 9
 DATE SAMPLE TESTED: 03/27/17
 CATALOG NUMBER: WP1LED30/480 (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)



REPORT NUMBER: RAB03098

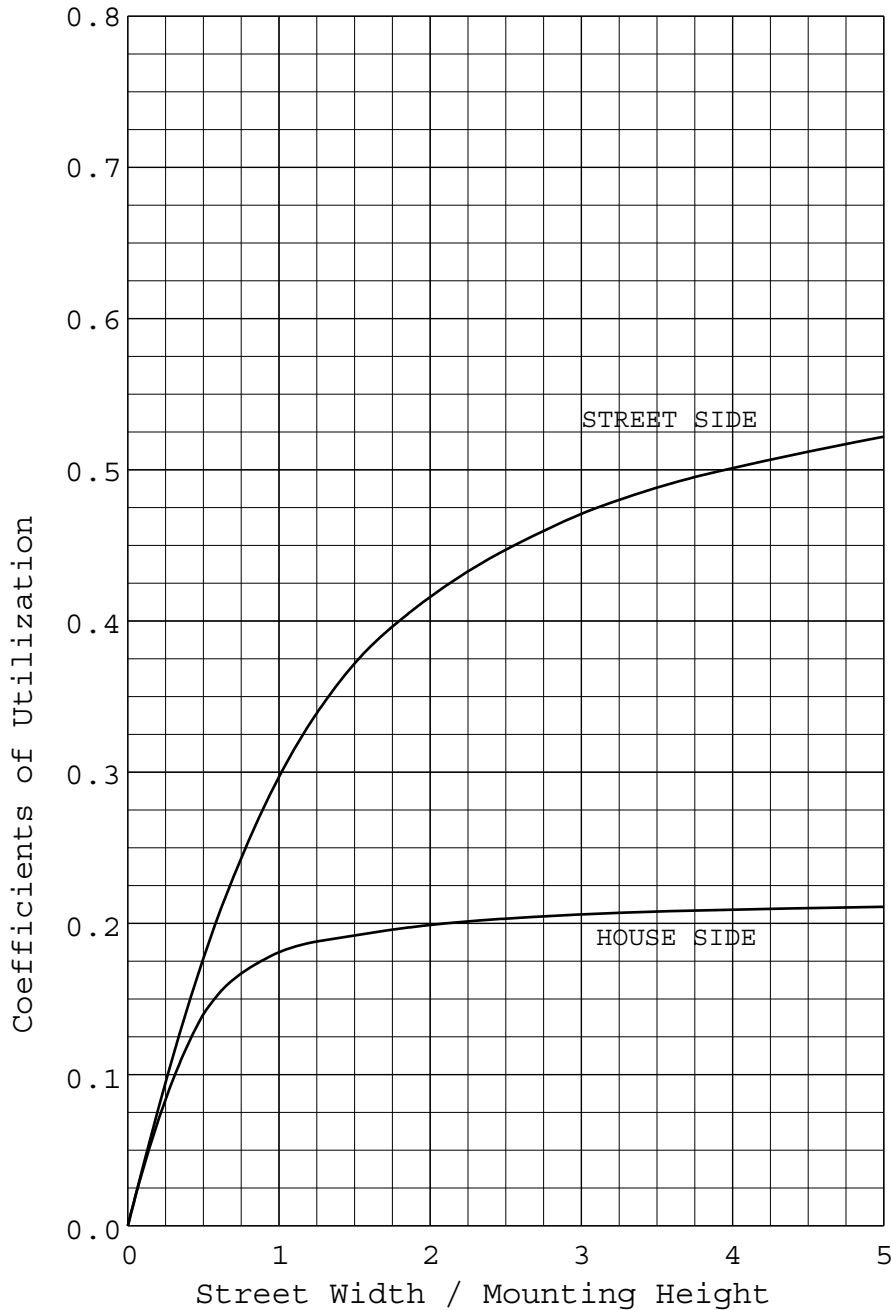
PAGE: 4 OF 9

ISSUE DATE: 03/27/17

DATE SAMPLE TESTED: 03/27/17

CATALOG NUMBER: WP1LED30/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRI

COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	1867.	60.1
DOWNWARD HOUSE SIDE	669.	21.6
DOWNWARD TOTAL	2536.	81.7
UPWARD STREET SIDE	521.	16.8
UPWARD HOUSE SIDE	47.	1.5
UPWARD TOTAL	568.	18.3
TOTAL FLUX	3104.	100.0
TOTAL INPUT WATTS = 28.3		
EFFICACY = 109.7 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.

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DATE SAMPLE TESTED: 03/27/17

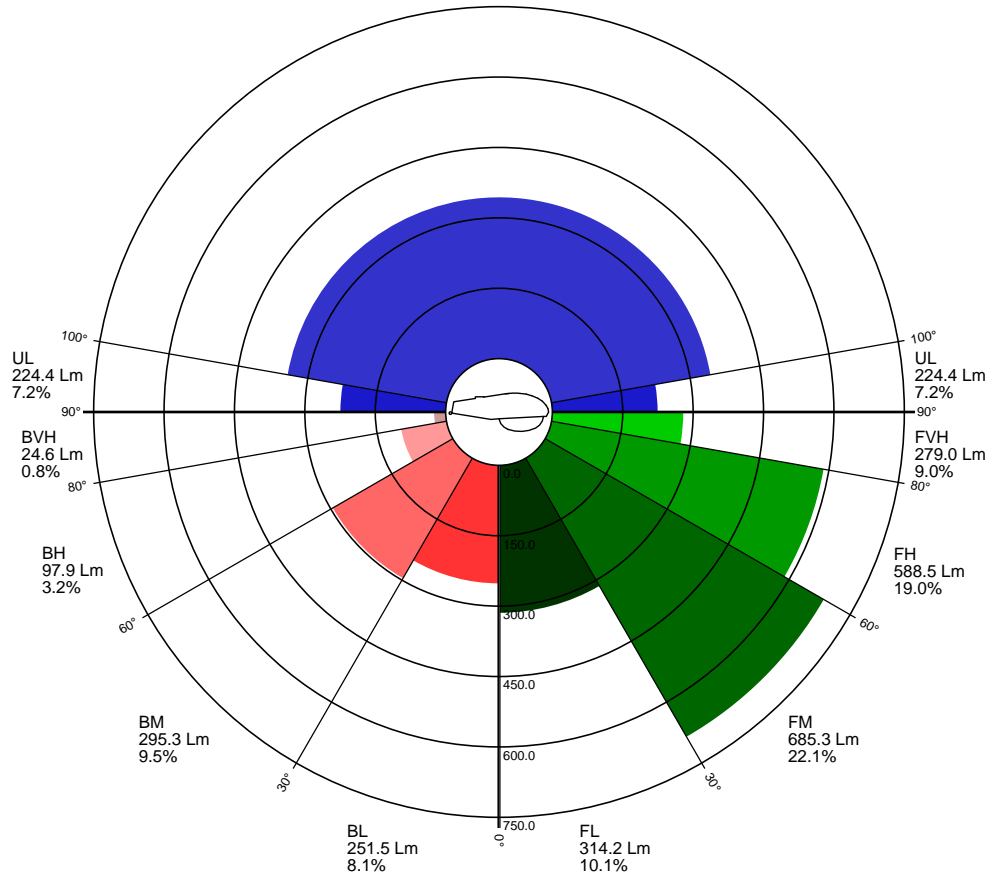
CATALOG NUMBER: WP1LED30/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

Zonal Summary		Lumens	% of Fixture	Zone Ratings		
				B	U	G
Forward		1867	60.1			
FL	(0° - 30°)	314.2	10.1			
FM	(30° - 60°)	685.3	22.1			
FH	(60° - 80°)	588.5	19.0			G0
FVH	(80° - 90°)	279.0	9.0			G3
Backward		669	21.6			
BL	(0° - 30°)	251.5	8.1	B1		
BM	(30° - 60°)	295.3	9.5	B1		
BH	(60° - 80°)	97.9	3.2	B0		G0
BVH	(80° - 90°)	24.6	0.8			G1
Upward		568	18.3			
UL	(90° - 100°)	224.4	7.2		U3	
UH	(100° - 180°)	343.7	11.1		U3	
Trapped Light		0	0.0			
Total Flux		3104	100.0			

Zonal Lumen Summary

(Linear scale)

UH
343.7 Lm
11.1%



REPORT NUMBER: RAB03098

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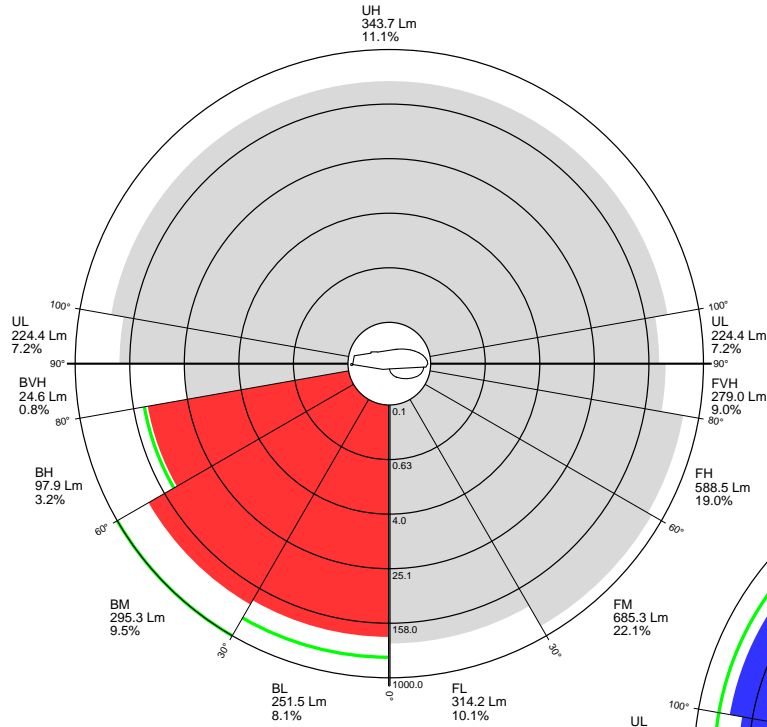
PAGE: 6 OF 9

CATALOG NUMBER: WP1LED30/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF -

PRISMATIC LEXAN LENS)

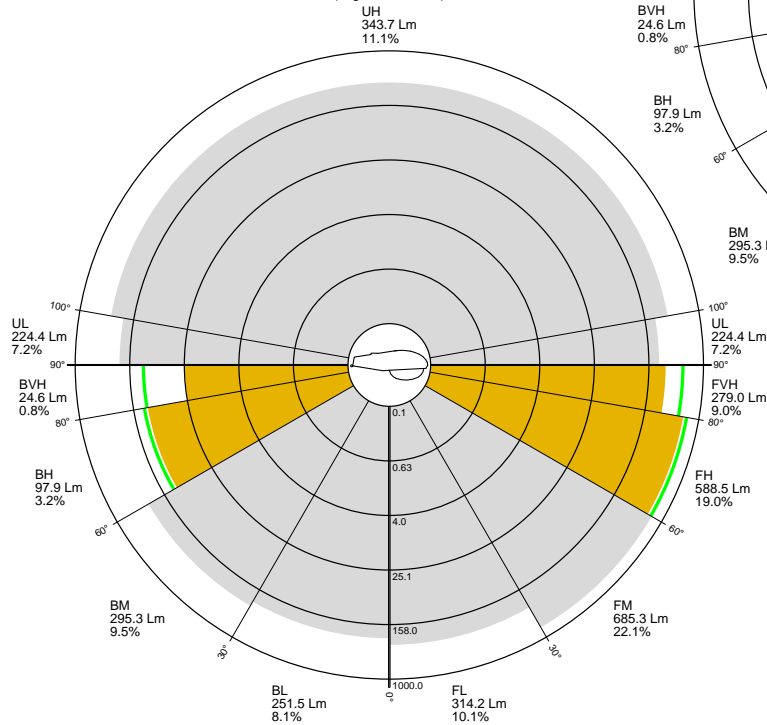
Backlight Rating Details

(Logarithmic scale)



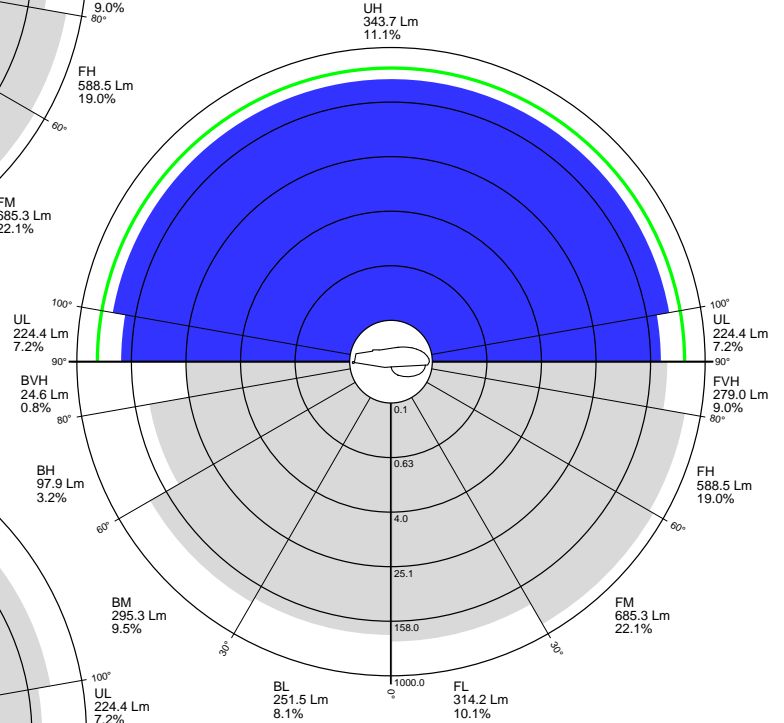
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)



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ISSUE DATE: 03/27/17

DATE SAMPLE TESTED: 03/27/17

CATALOG NUMBER: WP1LED30/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRI

CANDELA TABULATION

	STREET SIDE	LATERAL ANGLE								
		0.0	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.
	175.0	0.	0.	1.	1.	1.	1.	1.	2.	2.
	165.0	0.	0.	1.	1.	1.	1.	1.	2.	2.
	155.0	38.	35.	32.	28.	21.	12.	7.	6.	5.
	145.0	62.	60.	57.	56.	58.	52.	45.	32.	26.
	135.0	59.	59.	60.	65.	73.	77.	78.	64.	47.
	125.0	127.	128.	127.	112.	95.	84.	81.	82.	77.
	115.0	331.	330.	309.	246.	191.	138.	110.	87.	71.
	105.0	437.	447.	498.	424.	383.	277.	176.	98.	68.
	95.0	605.	615.	618.	563.	502.	439.	331.	191.	89.
	90.0	768.	768.	754.	659.	548.	487.	399.	274.	142.
	87.5	773.	779.	791.	716.	581.	509.	415.	323.	183.
	85.0	828.	835.	840.	715.	606.	519.	437.	363.	217.
V	82.5	884.	893.	844.	748.	629.	534.	457.	415.	258.
E	80.0 <<	899.	912.	872.	746.	633.	540.	466.	448.	298.
R	77.5	898.	906.	858.	771.	635.	535.	478.	462.	346.
T	75.0	846.	854.	850.	736.	611.	530.	490.	517.	386.
I	72.5	814.	819.	813.	724.	603.	516.	501.	503.	429.
C	70.0	822.	827.	806.	676.	563.	515.	551.	541.	457.
A	67.5	757.	757.	724.	670.	547.	528.	604.	585.	472.
L	65.0	717.	724.	699.	585.	531.	618.	623.	531.	489.
	62.5	648.	639.	606.	582.	595.	602.	582.	611.	526.
A	60.0	644.	638.	604.	616.	604.	633.	596.	554.	475.
N	57.5	634.	633.	662.	612.	673.	643.	616.	602.	468.
G	55.0	619.	615.	626.	691.	585.	582.	592.	579.	470.
L	52.5	701.	687.	695.	615.	635.	602.	608.	606.	468.
E	50.0	679.	664.	641.	665.	579.	566.	568.	559.	475.
	47.5	704.	686.	676.	614.	648.	641.	641.	505.	483.
	45.0	660.	653.	639.	682.	602.	603.	572.	492.	504.
	42.5	697.	678.	673.	642.	667.	644.	598.	497.	522.
	40.0	676.	654.	663.	706.	605.	604.	529.	523.	555.
	37.5	711.	690.	687.	653.	678.	592.	514.	543.	572.
	35.0	677.	651.	678.	723.	601.	584.	551.	591.	619.
	30.0	632.	622.	626.	652.	591.	579.	642.	649.	666.
	25.0	619.	615.	625.	613.	652.	674.	717.	734.	738.
	20.0	720.	714.	718.	738.	749.	780.	795.	807.	791.
	15.0	805.	798.	799.	821.	825.	841.	824.	843.	859.
	10.0	875.	870.	860.	838.	843.	881.	868.	892.	841.
	5.0	884.	885.	883.	886.	885.	858.	836.	843.	850.
	0.0	857.	857.	857.	857.	857.	857.	857.	857.	857.

||
PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB03098

PAGE: 8 OF 9

ISSUE DATE: 03/27/17

DATE SAMPLE TESTED: 03/27/17

CATALOG NUMBER: WP1LED30/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRI

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.	2.	1.	1.	1.	0.	0.
	165.0	2.	2.	2.	2.	2.	1.	1.	1.	1.	0.
	155.0	3.	3.	3.	3.	2.	2.	1.	1.	1.	1.
	145.0	13.	11.	8.	7.	6.	3.	2.	1.	1.	1.
	135.0	20.	16.	13.	13.	10.	6.	3.	1.	1.	1.
	125.0	37.	30.	23.	19.	16.	11.	6.	2.	1.	1.
	115.0	48.	41.	34.	27.	21.	15.	9.	4.	2.	2.
	105.0	47.	46.	42.	35.	28.	21.	13.	6.	3.	3.
	95.0	44.	46.	48.	47.	45.	37.	23.	10.	4.	4.
	90.0	46.	45.	51.	57.	60.	51.	32.	14.	5.	4.
	87.5	52.	47.	53.	61.	66.	57.	36.	16.	5.	4.
	85.0	61.	52.	56.	66.	75.	66.	43.	19.	6.	4.
V	82.5	75.	60.	61.	70.	83.	74.	54.	30.	15.	12.
E	80.0<<	93.	71.	66.	73.	88.	79.	65.	41.	28.	24.
R	77.5	123.	87.	70.	79.	88.	84.	70.	56.	40.	38.
T	75.0	161.	106.	75.	85.	87.	94.	74.	68.	53.	47.
I	72.5	200.	134.	85.	89.	87.	99.	79.	68.	70.	58.
C	70.0	242.	166.	98.	93.	89.	94.	89.	71.	73.	80.
A	67.5	271.	201.	117.	101.	95.	90.	98.	76.	69.	71.
L	65.0	306.	237.	145.	112.	100.	88.	93.	89.	69.	59.
	62.5	330.	272.	179.	124.	108.	89.	84.	95.	81.	67.
A	60.0	359.	301.	216.	146.	121.	93.	81.	89.	96.	89.
N	57.5	381.	345.	254.	175.	130.	99.	81.	77.	90.	96.
G	55.0	403.	379.	299.	207.	144.	113.	86.	72.	73.	78.
L	52.5	429.	402.	338.	242.	167.	128.	99.	77.	68.	65.
E	50.0	454.	436.	380.	281.	197.	150.	117.	92.	76.	67.
	47.5	478.	460.	401.	324.	230.	175.	140.	110.	93.	80.
	45.0	496.	483.	433.	366.	274.	207.	166.	136.	113.	100.
	42.5	514.	496.	457.	395.	329.	250.	194.	165.	138.	124.
	40.0	540.	519.	478.	425.	374.	311.	229.	198.	164.	151.
	37.5	555.	547.	511.	450.	408.	372.	291.	240.	190.	177.
	35.0	589.	572.	535.	477.	437.	414.	358.	304.	240.	211.
	30.0	659.	633.	581.	534.	498.	461.	433.	400.	380.	381.
	25.0	716.	707.	642.	587.	547.	505.	512.	445.	456.	437.
	20.0	765.	764.	699.	653.	602.	574.	515.	494.	525.	503.
	15.0	825.	829.	770.	734.	672.	616.	594.	568.	551.	541.
	10.0	843.	845.	809.	740.	760.	724.	710.	674.	646.	631.
	5.0	857.	858.	851.	828.	789.	760.	743.	745.	751.	762.
	0.0	857.	857.	857.	857.	857.	857.	857.	857.	857.	857.

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB03098
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	20
5- 10	58
10- 15	91
15- 20	117
20- 25	134
25- 30	147
30- 35	157
35- 40	161
40- 45	163
45- 50	164
50- 55	166
55- 60	169
60- 65	169
65- 70	173
70- 75	174
75- 80	171
80- 85	160
85- 90	143
90- 95	123
95-100	102
100-105	85
105-110	70
110-115	54
115-120	39
120-125	28
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	78
0- 20	285
0- 30	566
0- 40	884
0- 50	1211
0- 60	1546
0- 70	1888
0- 80	2233
0- 90	2536
0-100	2761
0-110	2915
0-120	3008
0-130	3056
0-140	3084
0-150	3099
0-160	3104
0-170	3104
0-180	3104

REPORT NUMBER: RAB03099
 DATE: 3/24/2017
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: WP1LED30/480 (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:
	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 (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: RAB03099
 DATE: 3/24/2017
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: WP1LED30/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

Page 2 of 4

RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	3104 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3372
Chromaticity Ordinate y	0.3452
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2085
Chromaticity Ordinate v'	0.4803
Correlated Color Temp CCT (K)	5299
ANSI C78.377-2008 Duv	0.000
Total Radiant Flux (milliWatts)	10073 *
ELECTRICAL	
Input Voltage (Volts AC)	480.0
Input Current (Amps AC)	0.064
Input Power (Watts)	28.3
Input Power Factor (%)	92.3
Input Current THD (%)	6.9
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	109.7
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	347.0
Input Current (Amps AC)	0.081
Input Power (Watts)	28.0
Input Power Factor (%)	99.3
Input Current THD (%)	10.2
Input Voltage THD (%)	0.2
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	86
R1 Light greyish red	85
R2 Dark greyish yellow	91
R3 Strong yellowish green	93
R4 Moderate yellowish green	86
R5 Light bluish green	86
R6 Light blue	86
R7 Light violet	89
R8 Light reddish purple	73
R9 Strong red	26
R10 Strong yellow	78
R11 Strong green	85
R12 Strong blue	65
R13 Light yellowish pink (skin)	87
R14 Moderate olive green (leaf)	97

*NOTE:

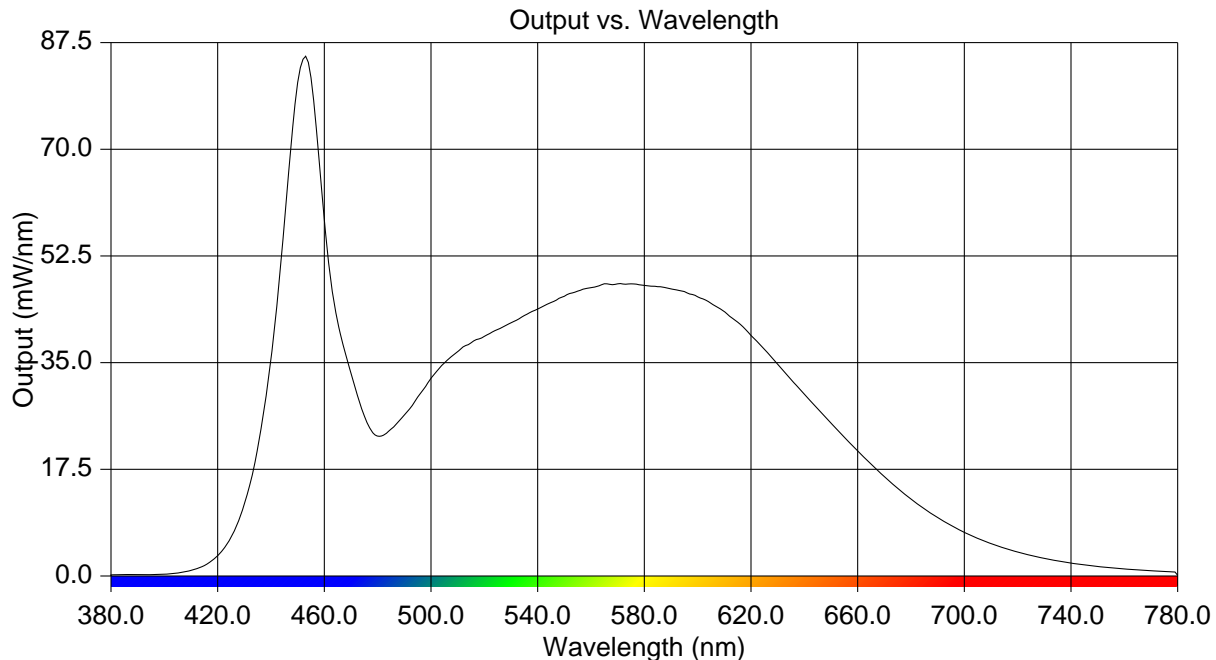
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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: RAB03099
 DATE: 3/24/2017
 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	0.179	515	38.246	650	25.096
385	0.195	520	39.317	655	22.765
390	0.216	525	40.459	660	20.540
395	0.238	530	41.532	665	18.360
400	0.319	535	42.734	670	16.314
405	0.489	540	43.811	675	14.365
410	0.877	545	44.867	680	12.627
415	1.705	550	45.891	685	11.023
420	3.315	555	46.736	690	9.581
425	6.340	560	47.261	695	8.312
430	11.820	565	47.945	700	7.159
435	20.887	570	47.934	705	6.176
440	35.529	575	47.932	710	5.295
445	57.805	580	47.680	715	4.568
450	80.961	585	47.464	720	3.929
455	81.767	590	47.113	725	3.376
460	58.434	595	46.668	730	2.889
465	41.696	600	45.801	735	2.469
470	33.255	605	44.782	740	2.118
475	26.259	610	43.378	745	1.823
480	22.953	615	41.647	750	1.566
485	24.092	620	39.462	755	1.338
490	26.404	625	37.240	760	1.157
495	29.349	630	34.735	765	0.995
500	32.442	635	32.228	770	0.853
505	34.945	640	29.826	775	0.738
510	36.796	645	27.413	780	0.111



REPORT NUMBER: RAB03099
DATE: 3/24/2017
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

