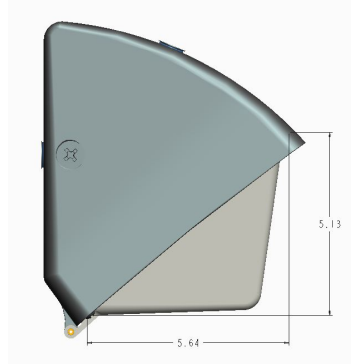


ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

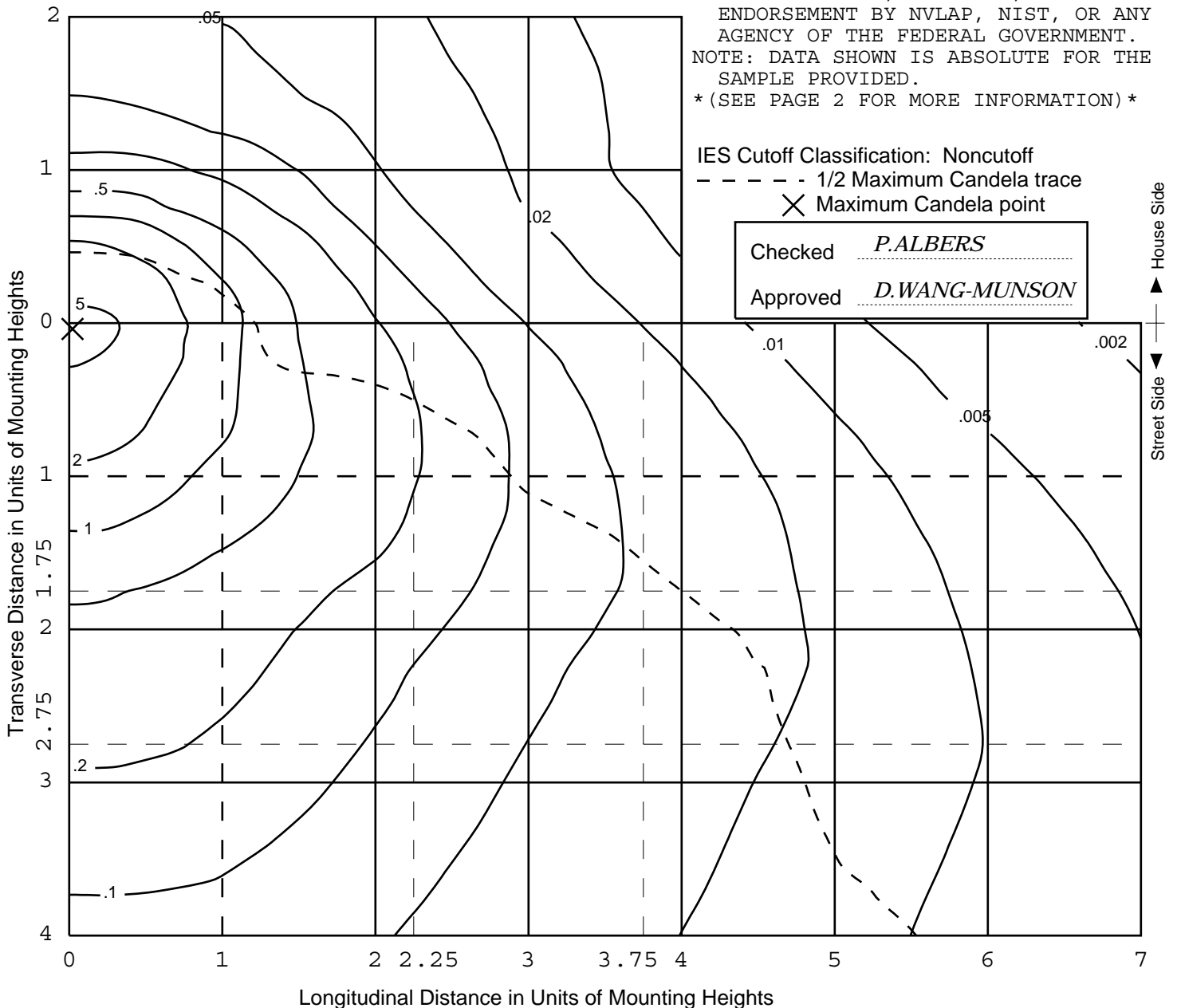
Values based on 12 foot mounting height.



REPORT NUMBER: RAB03114
 ISSUE DATE: 03/28/17 PAGE: 1 OF 9
 DATE SAMPLE TESTED: 03/28/17
 CATALOG NUMBER: WP1LED30Y,
 WP1LED30Y/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: RAB03114

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ISSUE DATE: 03/28/17

DATE SAMPLE TESTED: 03/28/17

CATALOG NUMBER: WP1LED30Y, WP1LED30Y/D10 (STANDARD CUTOFF - PRISMATIC LEXAN L

ADDITIONAL INFORMATION

TOTAL INPUT WATTS = 30.285 W AT 277.0 VAC.

LED DRIVER: RDD-U26-A0720

TEST PROCEDURE: IESNA LM-79-08

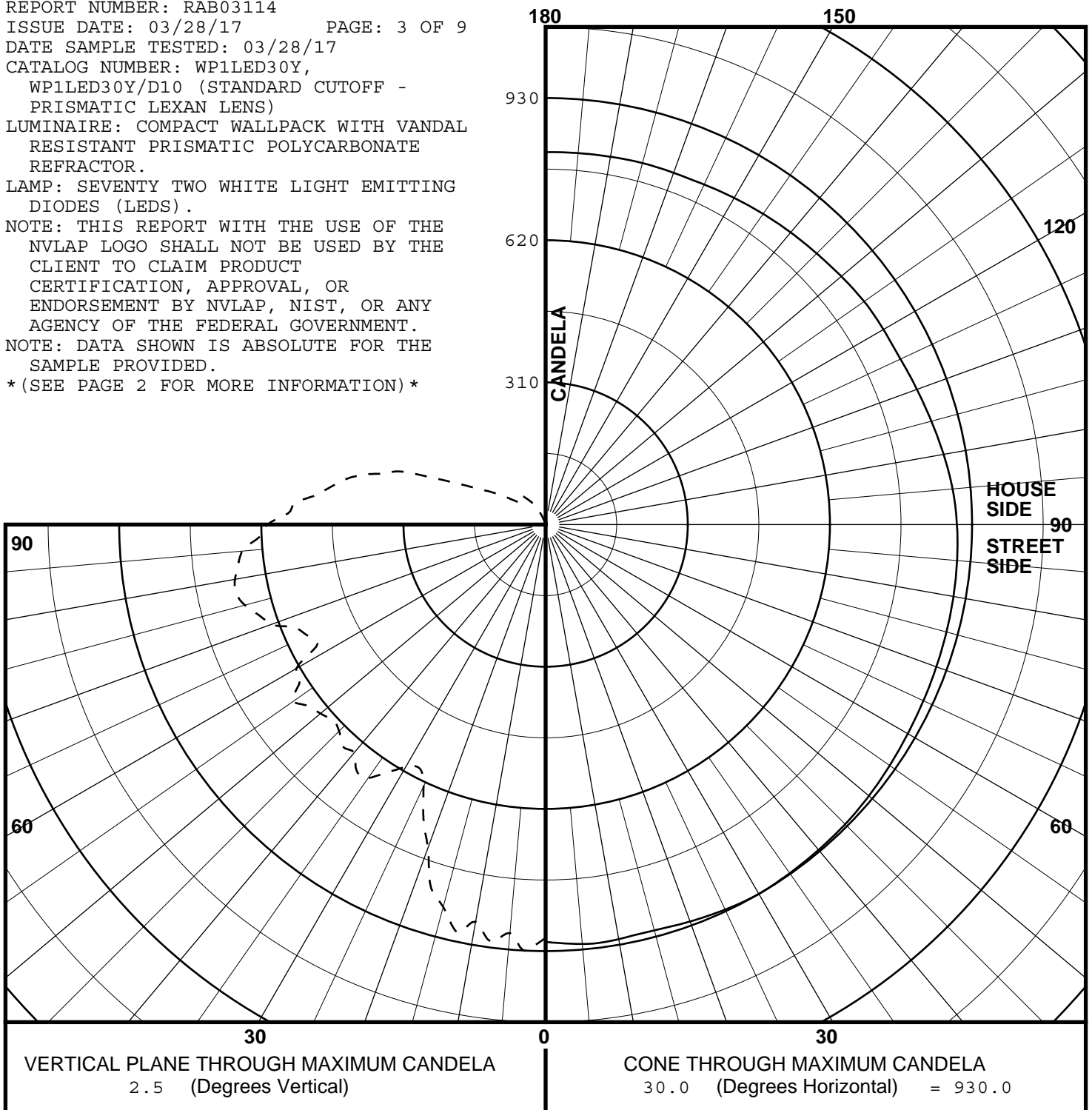
LM-80 DATA AVAILABLE FROM MANUFACTURER FOR SOLID STATE SOURCE

AMBIENT: 24.6

ACCREDITED LABORATORY CODE 201058-0

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

REPORT NUMBER: RAB03114
ISSUE DATE: 03/28/17 PAGE: 3 OF 9
DATE SAMPLE TESTED: 03/28/17
CATALOG NUMBER: WP1LED30Y,
WP1LED30Y/D10 (STANDARD CUTOFF -
PRISMATIC LEXAN LENS)
LUMINAIRE: COMPACT WALLPACK WITH VANDAL
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AGENCY OF THE FEDERAL GOVERNMENT.
NOTE: DATA SHOWN IS ABSOLUTE FOR THE
SAMPLE PROVIDED.
(SEE PAGE 2 FOR MORE INFORMATION)



REPORT NUMBER: RAB03114

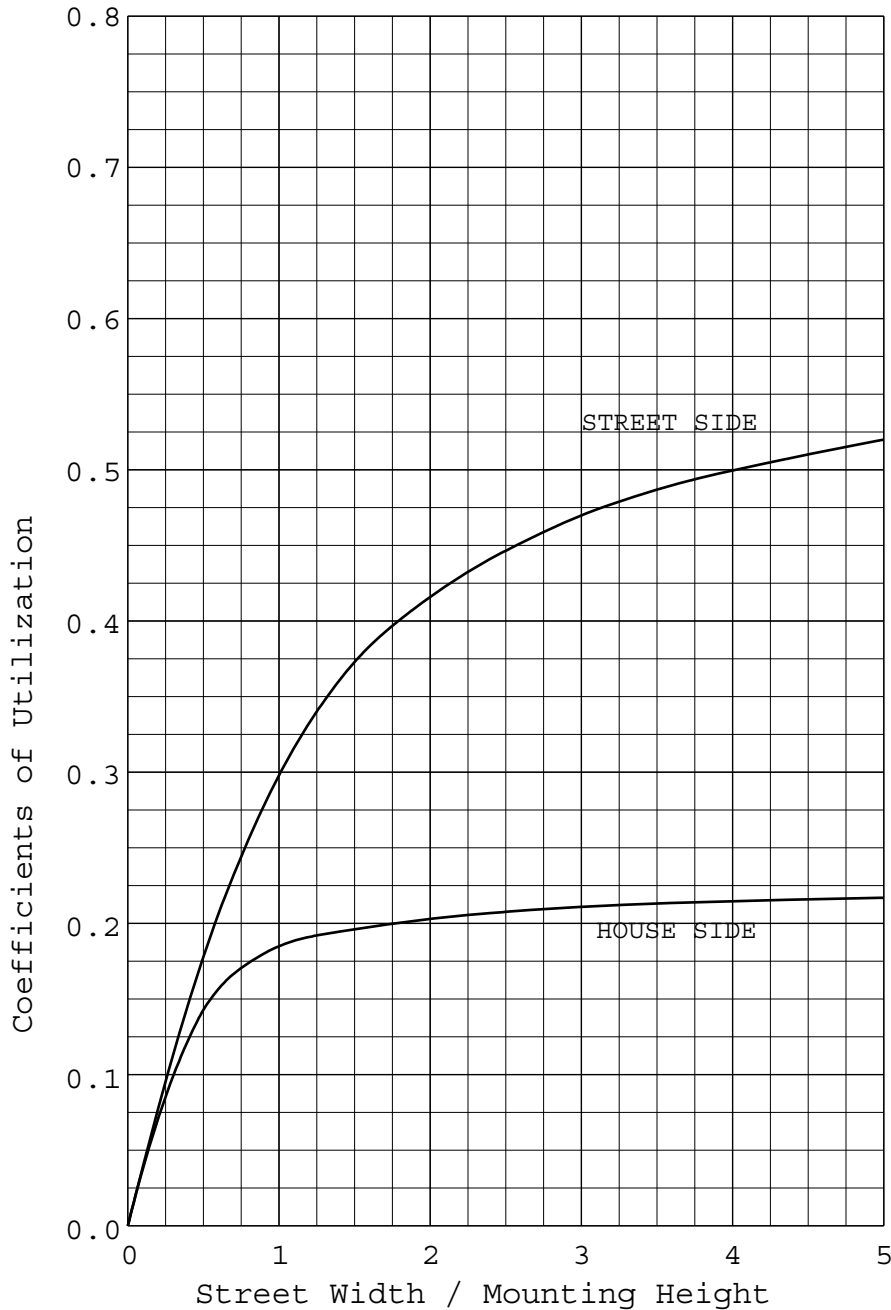
PAGE: 4 OF 9

ISSUE DATE: 03/28/17

DATE SAMPLE TESTED: 03/28/17

CATALOG NUMBER: WP1LED30Y, WP1LED30Y/D10 (STANDARD CUTOFF - PRISMATIC LEXAN L

COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	1895.	59.7
DOWNWARD HOUSE SIDE	705.	22.2
DOWNWARD TOTAL	2600.	81.9
UPWARD STREET SIDE	525.	16.5
UPWARD HOUSE SIDE	49.	1.5
UPWARD TOTAL	574.	18.1
TOTAL FLUX	3174.	100.0
TOTAL INPUT WATTS = 30.3		
EFFICACY = 104.8 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: RAB03114

ISSUE DATE: 03/28/17

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DATE SAMPLE TESTED: 03/28/17

CATALOG NUMBER: WP1LED30Y, WP1LED30Y/D10 (STANDARD CUTOFF - PRISMATIC

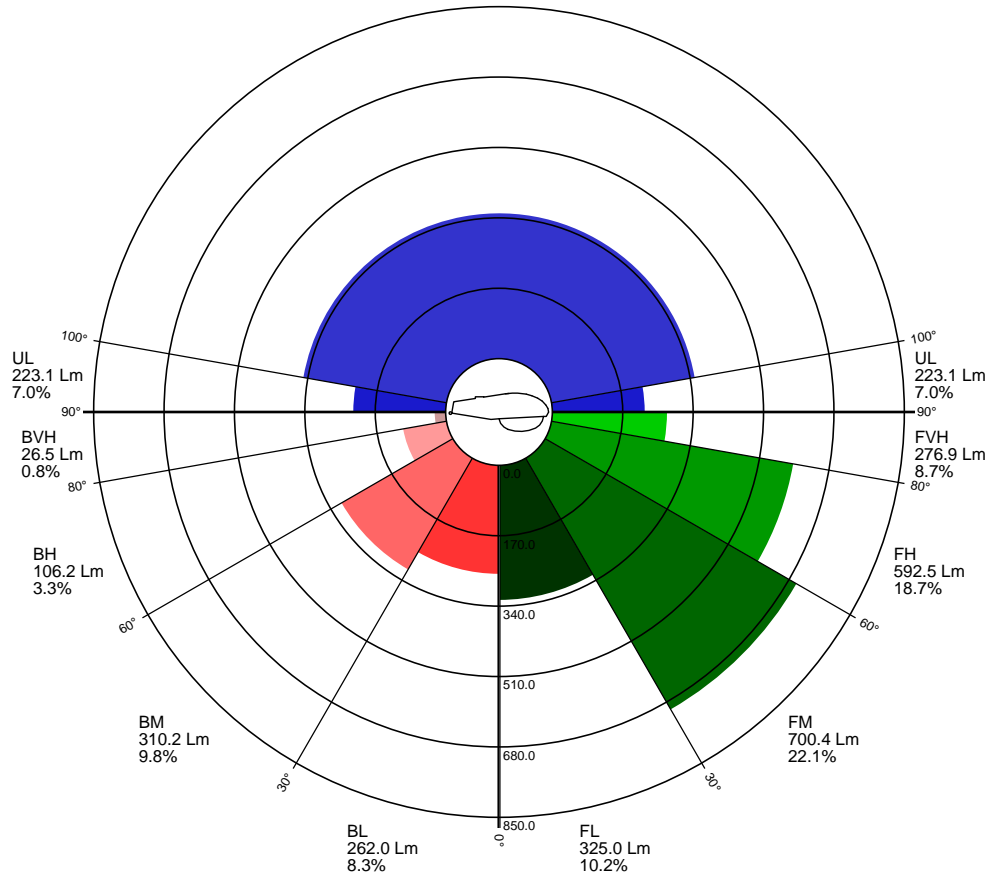
LEXAN LENS)

Zonal Summary				Zone Ratings		
				B	U	G
Forward		1895	59.7			
FL	(0° - 30°)	325.0	10.2			
FM	(30° - 60°)	700.4	22.1			
FH	(60° - 80°)	592.5	18.7			G0
FVH	(80° - 90°)	276.9	8.7			G3
Backward		705	22.2			
BL	(0° - 30°)	262.0	8.3	B1		
BM	(30° - 60°)	310.2	9.8	B1		
BH	(60° - 80°)	106.2	3.3	B0		G0
BVH	(80° - 90°)	26.5	0.8			G1
Upward		574	18.1			
UL	(90° - 100°)	223.1	7.0		U3	
UH	(100° - 180°)	350.9	11.1		U3	
Trapped Light		0	0.0			
Total Flux		3174	100.0			

Zonal Lumen Summary

(Linear scale)

UH
350.9 Lm
11.1%



REPORT NUMBER: RAB03114

ISSUE DATE: 03/28/17

PAGE: 6 OF 9

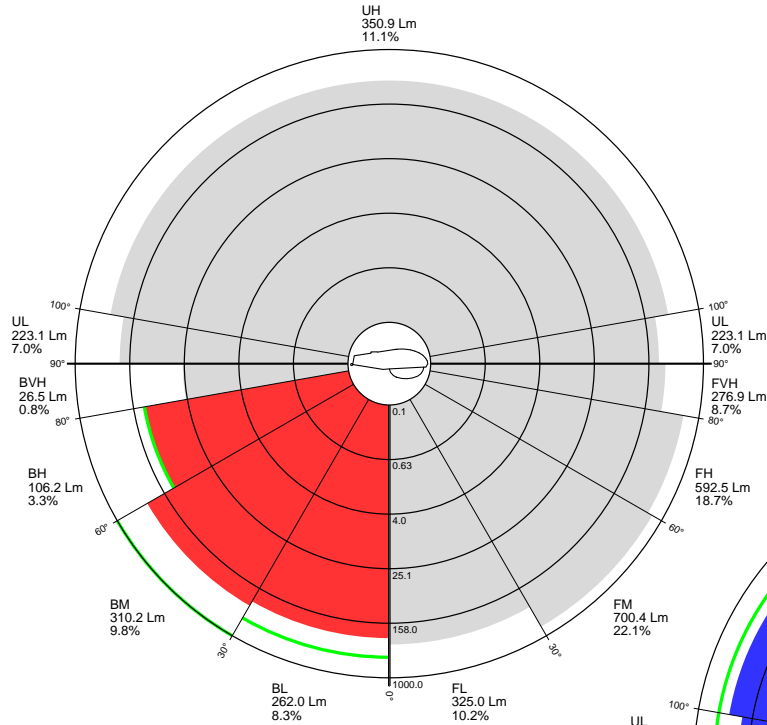
DATE SAMPLE TESTED: 03/28/17

CATALOG NUMBER: WP1LED30Y, WP1LED30Y/D10 (STANDARD CUTOFF - PRISMATIC

LEXAN LENS)

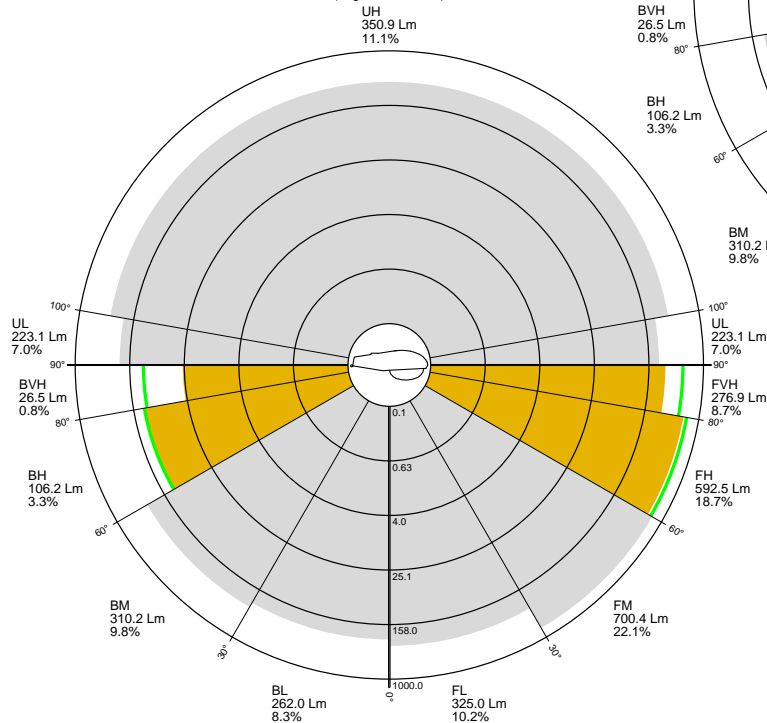
Backlight Rating Details

(Logarithmic scale)



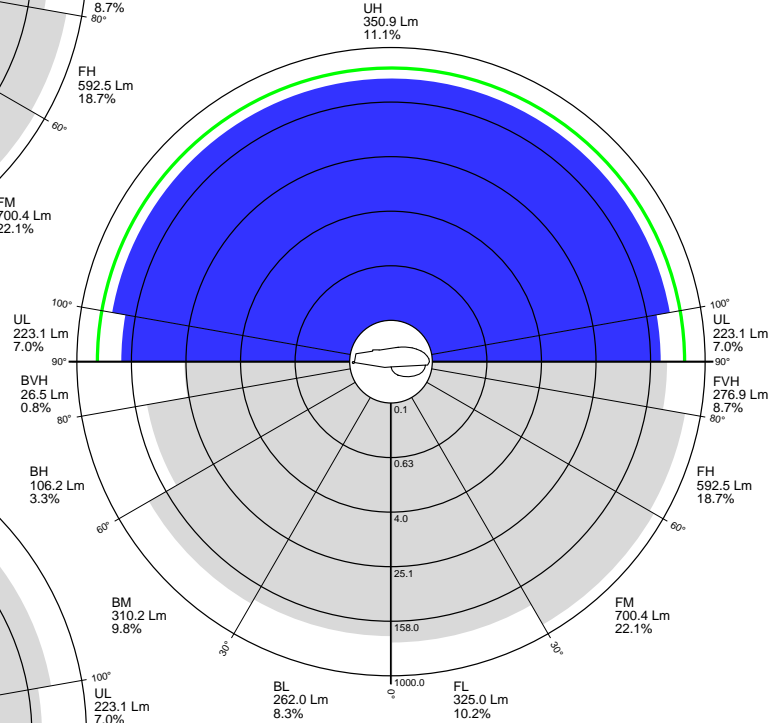
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)



ISSUE DATE: 03/28/17

DATE SAMPLE TESTED: 03/28/17

CATALOG NUMBER: WP1LED30Y, WP1LED30Y/D10 (STANDARD CUTOFF - PRISMATIC LEXAN L

CANDELA TABULATION

CANDLE STREET	CANDLE RESOLUTION					LATERAL ANGLE						
	SIDE											
	0.0	5.0	15.0	25.0	30.0	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.	1.	1.	1.	1.	1.	2.	2.	2.	2.	
165.0	0.	0.	0.	1.	1.	1.	1.	1.	2.	2.	2.	
155.0	46.	43.	39.	33.	32.	25.	14.	8.	6.	4.	4.	
145.0	74.	71.	65.	64.	66.	65.	59.	52.	36.	29.	19.	
135.0	61.	61.	63.	71.	76.	81.	85.	89.	76.	59.	35.	
125.0	123.	124.	124.	111.	103.	96.	90.	87.	89.	84.	52.	
115.0	318.	317.	307.	235.	212.	185.	136.	114.	93.	77.	58.	
105.0	437.	443.	498.	426.	417.	383.	273.	175.	99.	71.	53.	
95.0	601.	604.	614.	566.	547.	498.	439.	327.	188.	90.	49.	
90.0	761.	758.	741.	644.	607.	546.	487.	406.	271.	142.	59.	
87.5	754.	759.	771.	715.	625.	581.	511.	427.	321.	183.	71.	
85.0	794.	797.	836.	712.	665.	604.	521.	439.	363.	225.	86.	
82.5	896.	888.	820.	747.	677.	630.	540.	451.	405.	263.	112.	
V 80.0	897.	883.	841.	738.	688.	636.	542.	471.	452.	304.	146.	
E 77.5	883.	893.	831.	758.	691.	634.	537.	483.	476.	355.	189.	
R 75.0	828.	838.	844.	733.	679.	618.	533.	493.	512.	391.	233.	
T 72.5	844.	846.	815.	725.	656.	608.	527.	510.	503.	421.	291.	
I 70.0	821.	829.	806.	684.	637.	565.	521.	584.	538.	464.	321.	
C 67.5	759.	770.	730.	669.	588.	551.	536.	602.	575.	494.	370.	
A 65.0	710.	723.	702.	582.	573.	538.	629.	632.	544.	494.	378.	
L 62.5	646.	639.	603.	593.	561.	612.	629.	626.	595.	529.	405.	
60.0	643.	647.	623.	618.	628.	612.	641.	625.	591.	478.	415.	
A 57.5	632.	646.	667.	623.	635.	687.	645.	632.	571.	475.	426.	
N 55.0	633.	627.	643.	695.	672.	605.	603.	616.	598.	475.	428.	
G 52.5	706.	719.	717.	637.	651.	646.	614.	628.	596.	480.	452.	
L 50.0	698.	689.	673.	692.	641.	599.	576.	603.	570.	484.	479.	
E 47.5	718.	721.	699.	651.	630.	650.	638.	645.	510.	498.	500.	
45.0	690.	684.	665.	680.	637.	613.	605.	584.	501.	517.	527.	
42.5	702.	691.	678.	655.	655.	673.	661.	583.	507.	545.	547.	
40.0	692.	685.	671.	716.	649.	621.	610.	530.	539.	568.	572.	
37.5	731.	701.	692.	666.	677.	672.	622.	519.	559.	594.	607.	
35.0	687.	673.	690.	708.	675.	609.	590.	563.	614.	638.	627.	
30.0	626.	617.	637.	653.	610.	599.	579.	650.	685.	701.	691.	
25.0	644.	642.	618.	620.	630.	673.	694.	753.	775.	755.	772.	
20.0	722.	720.	707.	746.	750.	798.	792.	836.	811.	827.	806.	
15.0	819.	814.	825.	845.	863.	872.	894.	848.	882.	866.	868.	
10.0	852.	854.	844.	854.	879.	902.	915.	928.	898.	896.	902.	
5.0	909.	910.	908.	899.	894.	891.	872.	878.	907.	913.	909.	
2.5<<	910.	918.	916.	926.	930.	928.	924.	916.	909.	905.	901.	
0.0	901.	901.	901.	901.	901.	901.	901.	901.	901.	901.	901.	
					PLANE OF MAXIMUM CANDELA							
					CONE OF MAXIMUM CANDELA							

REPORT NUMBER: RAB03114

PAGE: 8 OF 9

ISSUE DATE: 03/28/17

DATE SAMPLE TESTED: 03/28/17

CATALOG NUMBER: WP1LED30Y, WP1LED30Y/D10 (STANDARD CUTOFF - PRISMATIC LEXAN L

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.	0.
	155.0	4.	3.	3.	2.	2.	1.	1.	1.	0.	1.
	145.0	15.	12.	8.	8.	6.	4.	1.	1.	1.	1.
	135.0	26.	21.	16.	15.	11.	7.	3.	1.	1.	1.
	125.0	37.	30.	23.	21.	17.	11.	6.	2.	1.	1.
	115.0	48.	41.	32.	28.	22.	15.	10.	4.	2.	2.
	105.0	50.	49.	43.	35.	29.	22.	14.	7.	3.	3.
	95.0	46.	48.	50.	47.	45.	39.	25.	12.	4.	4.
	90.0	46.	45.	51.	57.	60.	53.	35.	15.	5.	4.
	87.5	53.	47.	54.	63.	69.	61.	40.	17.	6.	4.
	85.0	62.	52.	58.	69.	79.	72.	49.	23.	9.	7.
	82.5	76.	61.	63.	74.	90.	81.	62.	36.	21.	16.
V	80.0	97.	73.	67.	78.	94.	87.	72.	50.	36.	33.
E	77.5	129.	90.	71.	85.	92.	96.	76.	68.	50.	47.
R	75.0	164.	112.	78.	90.	92.	105.	83.	73.	69.	58.
T	72.5	205.	140.	88.	93.	92.	102.	92.	74.	82.	87.
I	70.0	245.	174.	103.	97.	96.	97.	108.	80.	75.	90.
C	67.5	284.	211.	125.	105.	102.	94.	106.	94.	74.	63.
A	65.0	312.	245.	155.	115.	107.	93.	95.	106.	82.	66.
L	62.5	347.	277.	190.	129.	115.	97.	89.	102.	105.	94.
	60.0	362.	322.	232.	154.	126.	100.	86.	90.	107.	111.
A	57.5	395.	351.	273.	185.	133.	107.	87.	78.	85.	92.
N	55.0	421.	398.	315.	220.	147.	120.	93.	76.	72.	72.
G	52.5	443.	427.	356.	257.	173.	135.	109.	85.	74.	68.
L	50.0	473.	457.	396.	298.	206.	154.	128.	101.	85.	75.
E	47.5	498.	478.	427.	344.	241.	181.	151.	121.	102.	92.
	45.0	512.	498.	454.	386.	291.	218.	176.	146.	123.	111.
	42.5	539.	521.	479.	416.	347.	267.	212.	172.	149.	133.
	40.0	554.	543.	497.	446.	391.	334.	258.	198.	174.	159.
	37.5	574.	568.	519.	473.	423.	386.	326.	241.	205.	186.
	35.0	616.	586.	544.	499.	449.	422.	371.	331.	255.	233.
	30.0	683.	666.	604.	563.	507.	496.	461.	431.	421.	382.
	25.0	750.	751.	670.	614.	570.	526.	500.	489.	434.	429.
	20.0	814.	805.	734.	675.	612.	578.	531.	549.	497.	477.
	15.0	886.	868.	792.	768.	713.	624.	618.	577.	554.	538.
	10.0	902.	881.	815.	805.	788.	768.	750.	688.	640.	641.
	5.0	905.	890.	855.	817.	795.	802.	808.	809.	816.	813.
	2.5<<	897.	891.	871.	854.	848.	836.	827.	818.	816.	813.
	0.0	901.	901.	901.	901.	901.	901.	901.	901.	901.	901.

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB03114
ISSUE DATE: 03/28/17
PREPARED FOR: RAB LIGHTING INC.

PAGE: 9 OF 9
DATE SAMPLE TESTED: 03/28/17

5-DEGREE ZONAL LUMEN SUMMARY

0- 5	21
5- 10	61
10- 15	94
15- 20	121
20- 25	138
25- 30	152
30- 35	162
35- 40	166
40- 45	168
45- 50	170
50- 55	172
55- 60	173
60- 65	173
65- 70	176
70- 75	177
75- 80	172
80- 85	161
85- 90	143
90- 95	122
95-100	101
100-105	85
105-110	70
110-115	54
115-120	38
120-125	28
125-130	21
130-135	17
135-140	14
140-145	11
145-150	7
150-155	4
155-160	1
160-165	0
165-170	0
170-175	0
175-180	0

10-DEGREE ZONAL LUMEN SUMMARY

0- 10	81
0- 20	296
0- 30	587
0- 40	915
0- 50	1253
0- 60	1597
0- 70	1947
0- 80	2296
0- 90	2600
0-100	2823
0-110	2978
0-120	3071
0-130	3120
0-140	3150
0-150	3168
0-160	3173
0-170	3173
0-180	3174

REPORT NUMBER: RAB03115
DATE: 3/27/2017
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: WP1LED30Y, WP1LED30Y/D10 (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-042-A0700N

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: 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 (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: RAB03115
 DATE: 3/27/2017
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: WP1LED30Y, WP1LED30Y/D10 (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

Page 2 of 4

RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	3174 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4289
Chromaticity Ordinate y	0.3962
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2487
Chromaticity Ordinate v'	0.5171
Correlated Color Temp CCT (K)	3074
ANSI C78.377-2008 Duv	-0.002
Total Radiant Flux (milliWatts)	9918 *
ELECTRICAL	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.120
Input Power (Watts)	30.3
Input Power Factor (%)	91.0
Input Current THD (%)	17.2
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	104.8
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.254
Input Power (Watts)	30.2
Input Power Factor (%)	99.2
Input Current THD (%)	7.6
Input Voltage THD (%)	0.2
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	83
R1 Light greyish red	82
R2 Dark greyish yellow	91
R3 Strong yellowish green	96
R4 Moderate yellowish green	81
R5 Light bluish green	82
R6 Light blue	89
R7 Light violet	83
R8 Light reddish purple	62
R9 Strong red	14
R10 Strong yellow	80
R11 Strong green	80
R12 Strong blue	73
R13 Light yellowish pink (skin)	84
R14 Moderate olive green (leaf)	99

*NOTE:

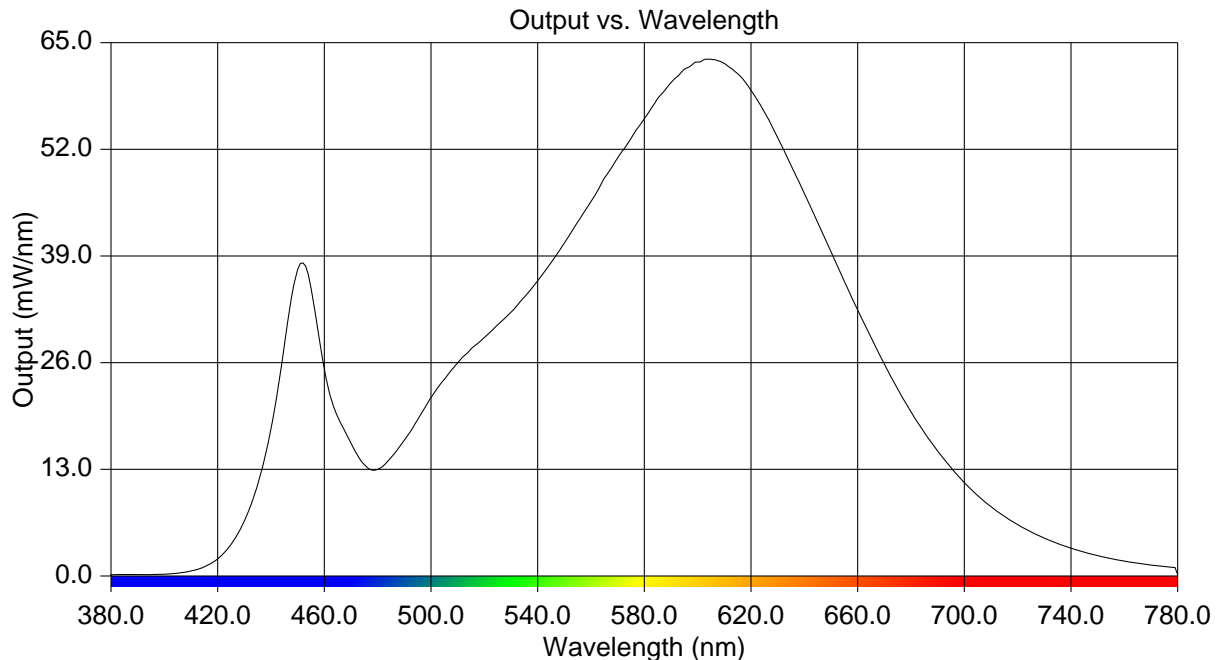
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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: RAB03115
 DATE: 3/27/2017
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: WP1LED30Y, WP1LED30Y/D10 (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

Page 3 of 4

RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.149	515	27.679	650	39.505
385	0.161	520	29.074	655	35.902
390	0.164	525	30.612	660	32.484
395	0.178	530	32.149	665	29.074
400	0.223	535	33.992	670	25.824
405	0.340	540	35.986	675	22.780
410	0.595	545	38.183	680	20.040
415	1.119	550	40.544	685	17.490
420	2.087	555	43.129	690	15.216
425	3.821	560	45.599	695	13.219
430	6.697	565	48.510	700	11.401
435	11.133	570	50.984	705	9.825
440	17.937	575	53.325	710	8.434
445	27.988	580	55.730	715	7.293
450	37.373	585	58.195	720	6.268
455	35.109	590	60.128	725	5.372
460	25.214	595	61.765	730	4.612
465	19.408	600	62.634	735	3.928
470	16.169	605	62.988	740	3.360
475	13.572	610	62.474	745	2.884
480	12.991	615	61.224	750	2.481
485	14.428	620	59.187	755	2.125
490	16.539	625	56.639	760	1.827
495	19.063	630	53.397	765	1.567
500	21.753	635	50.109	770	1.350
505	23.961	640	46.655	775	1.158
510	25.970	645	43.087	780	0.175



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CIE Chromaticity Diagram

