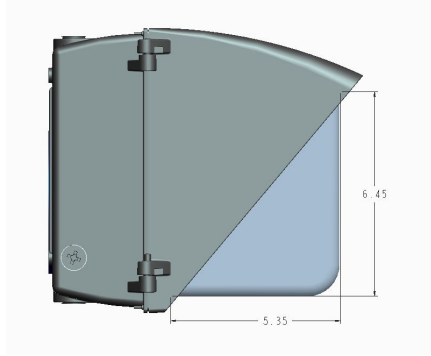


### ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

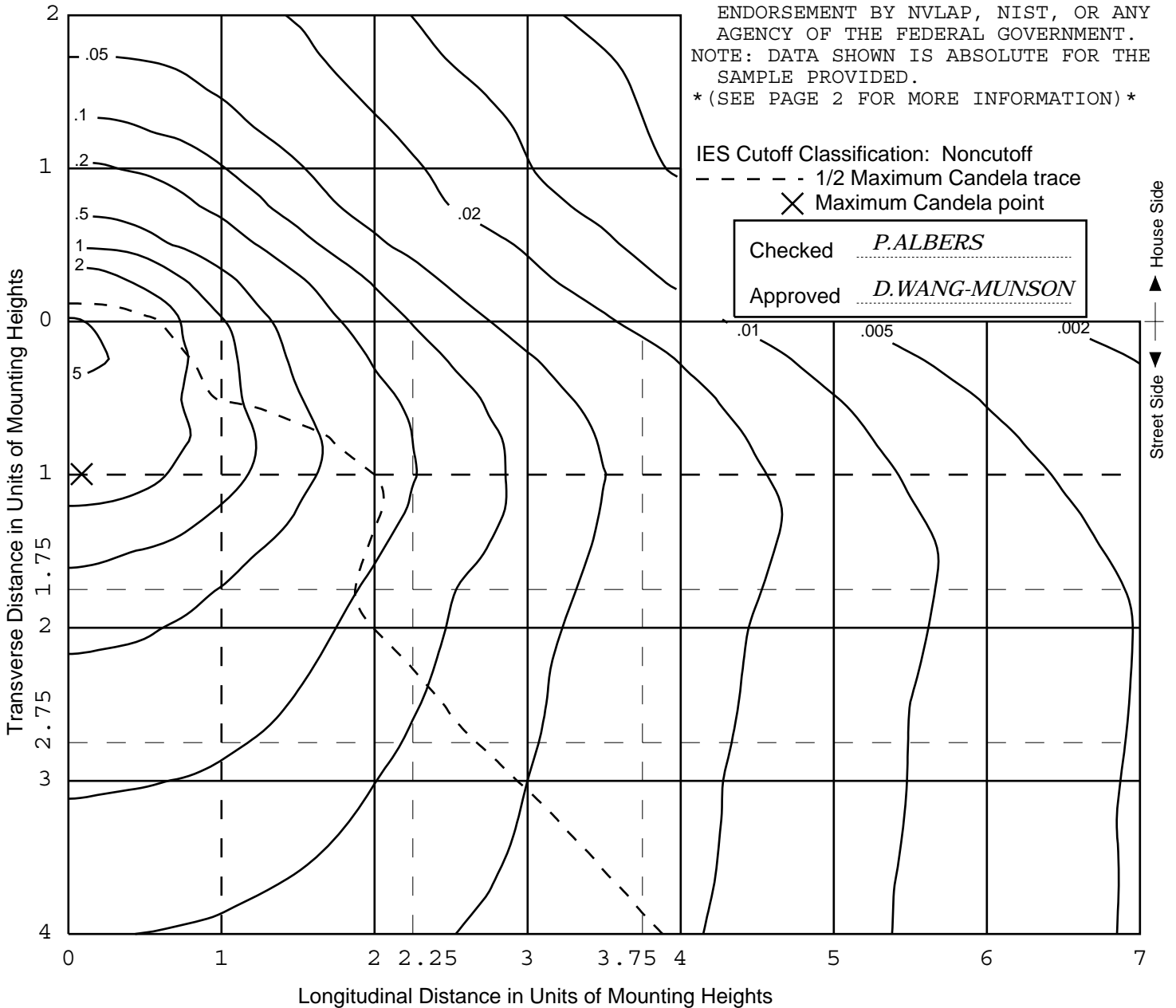
Values based on 20 foot mounting height.



REPORT NUMBER: RAB03065  
 ISSUE DATE: 03/09/17 PAGE: 1 OF 9  
 DATE SAMPLE TESTED: 03/09/17  
 CATALOG NUMBER: WP3LED82,WP3LED82/D10  
 (STANDARD CUTOFF - PRISMATIC GLASS LENS)  
 LUMINAIRE: LARGE WALLPACK WITH ALUMINUM PRECISION DIE CAST CONSTRUCTION AND TEMPERED GLASS REFRACTOR.  
 LAMP: ONE HUNDRED FORTY FOUR 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: WP3LED82,WP3LED82/D10 (STANDARD CUTOFF - PRISMATIC GLASS LENS

## ADDITIONAL INFORMATION

TOTAL INPUT WATTS = 81.118 W AT 120.0 VAC.

LED DRIVER: RD-G075-A2800-C

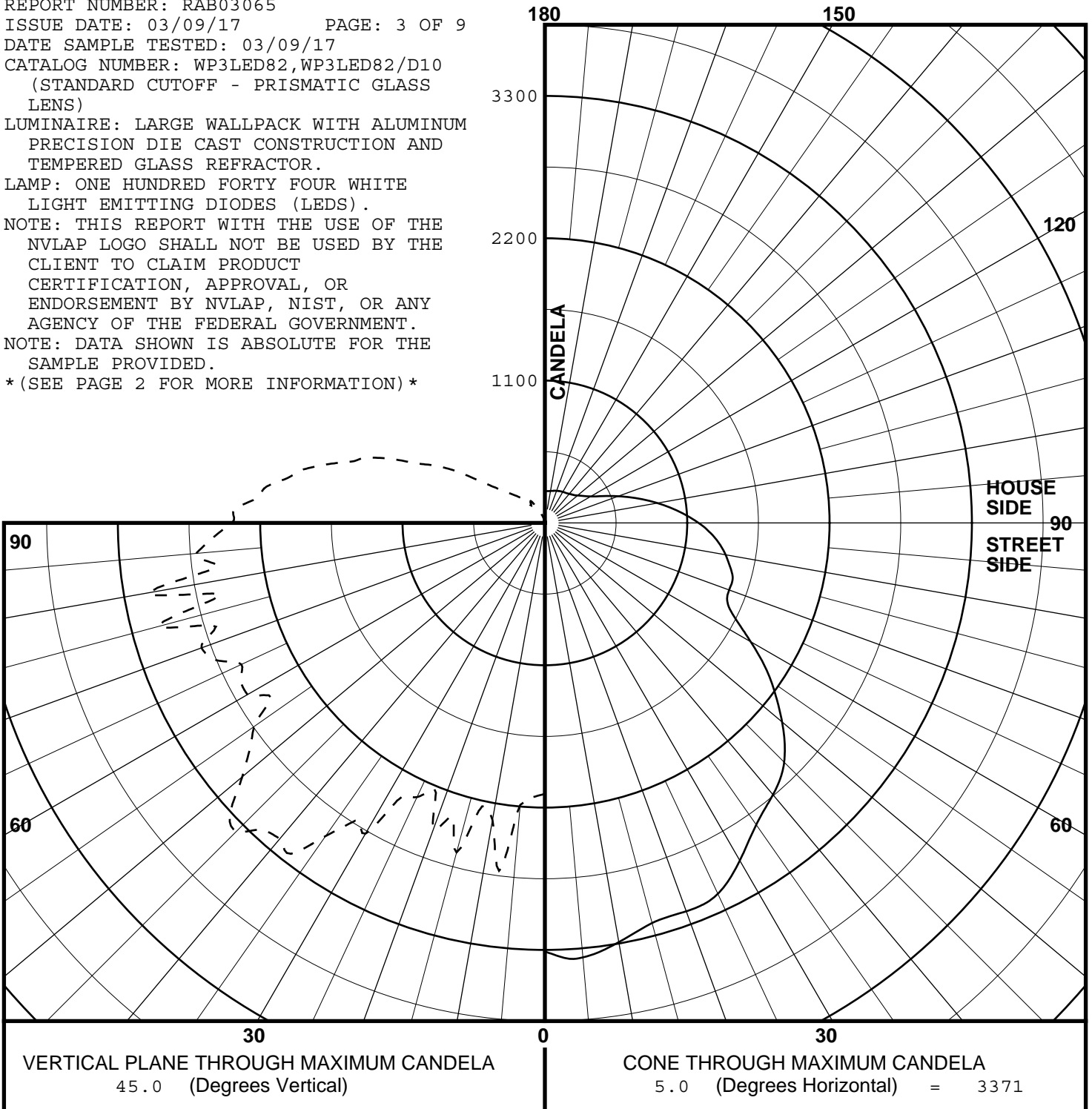
TEST PROCEDURE: IESNA LM-79-08

ACCREDITED LABORATORY CODE 201058-0

AMBIENT: 24.9

### MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

REPORT NUMBER: RAB03065  
 ISSUE DATE: 03/09/17 PAGE: 3 OF 9  
 DATE SAMPLE TESTED: 03/09/17  
 CATALOG NUMBER: WP3LED82,WP3LED82/D10  
 (STANDARD CUTOFF - PRISMATIC GLASS LENS)  
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 NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.  
 \*(SEE PAGE 2 FOR MORE INFORMATION)\*



REPORT NUMBER: RAB03065

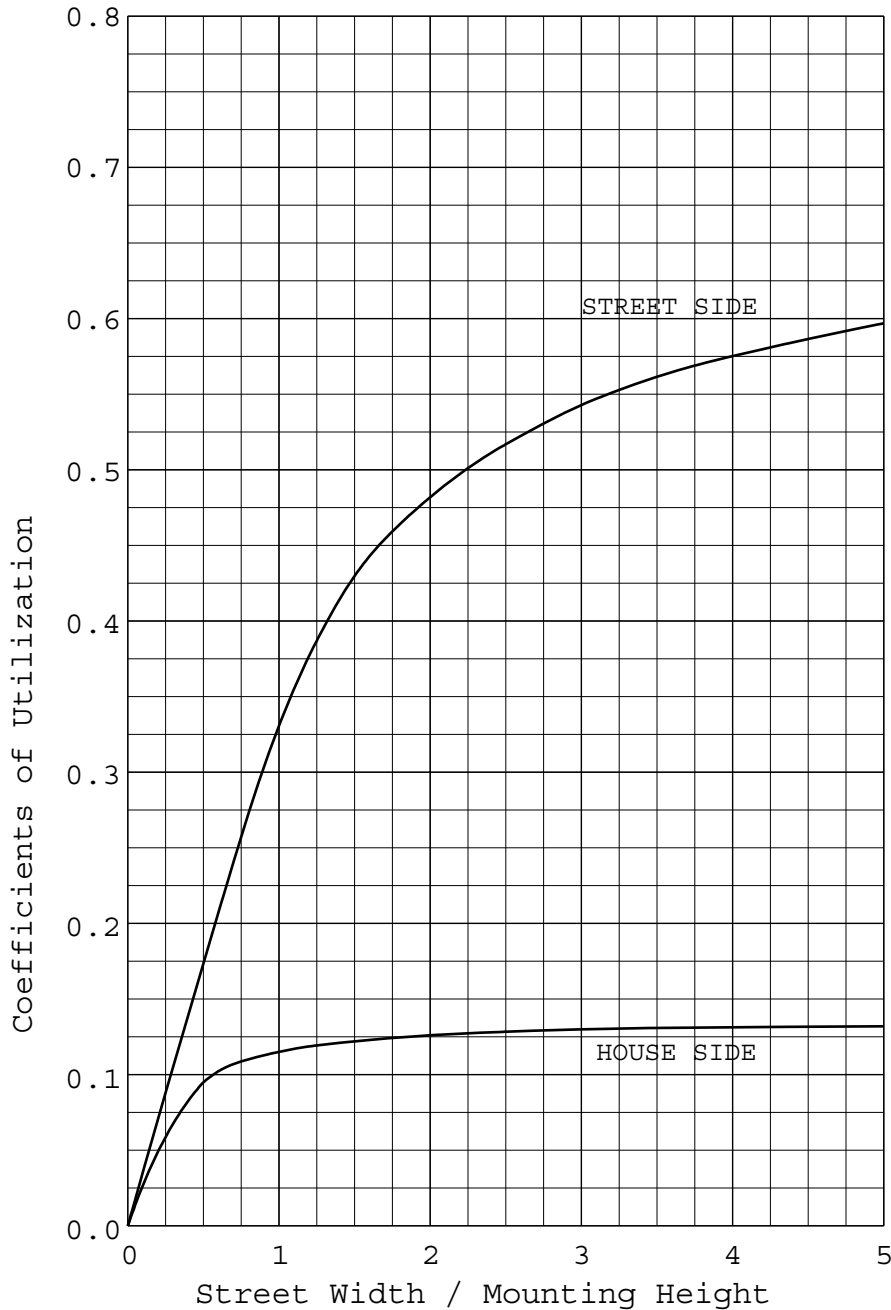
PAGE: 4 OF 9

ISSUE DATE: 03/09/17

DATE SAMPLE TESTED: 03/09/17

CATALOG NUMBER: WP3LED82,WP3LED82/D10 (STANDARD CUTOFF - PRISMATIC GLASS LENS)

### COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	6319.	68.1
DOWNWARD HOUSE SIDE	1246.	13.4
DOWNWARD TOTAL	7565.	81.5
UPWARD STREET SIDE	1653.	17.8
UPWARD HOUSE SIDE	62.	0.7
UPWARD TOTAL	1715.	18.5
TOTAL FLUX	9280.	100.0

TOTAL INPUT WATTS = 81.1  
EFFICACY = 114.4 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: 03/09/17

CATALOG NUMBER: WP3LED82,WP3LED82/D10 (STANDARD CUTOFF - PRISMATIC GLASS

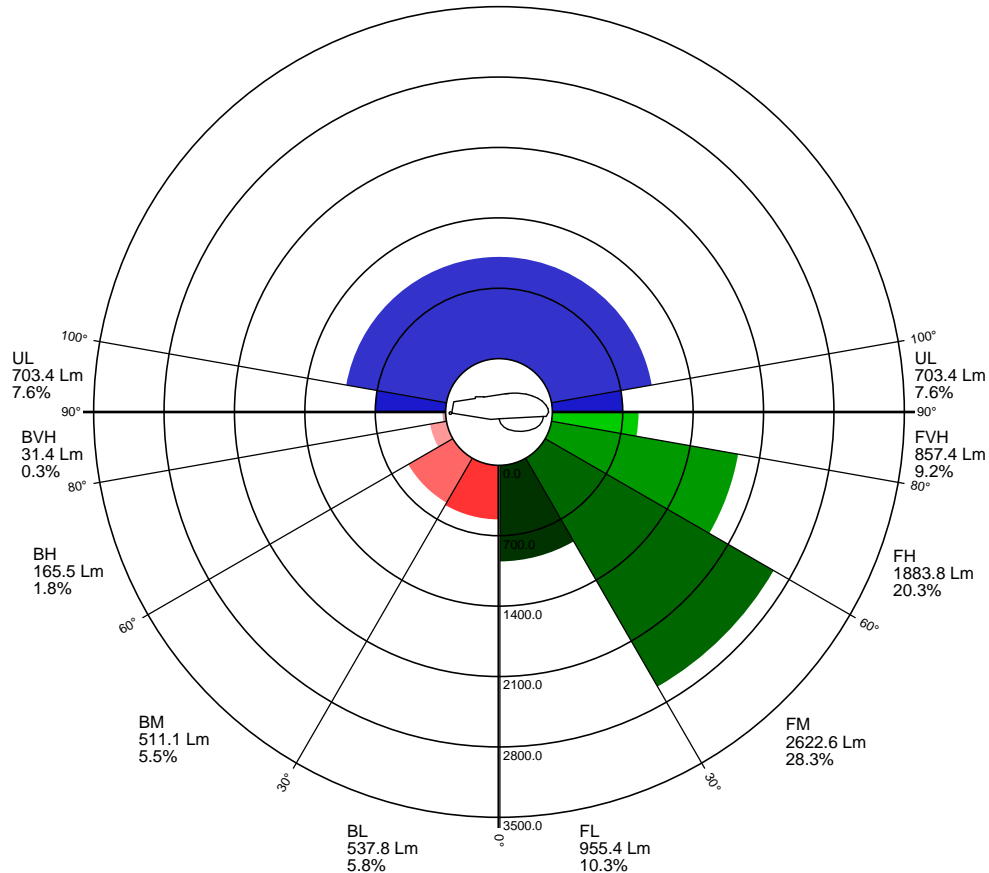
LENS BUG Rating:

Zonal Summary		Lumens	% of Fixture	Zone Ratings		
				B	U	G
Forward		6319	68.1			
FL	(0° - 30°)	955.4	10.3			
FM	(30° - 60°)	2622.6	28.3			
FH	(60° - 80°)	1883.8	20.3			G2
FVH	(80° - 90°)	857.4	9.2			G5
Backward		1246	13.4			
BL	(0° - 30°)	537.8	5.8	B2		
BM	(30° - 60°)	511.1	5.5	B1		
BH	(60° - 80°)	165.5	1.8	B1		G1
BVH	(80° - 90°)	31.4	0.3			G1
Upward		1715	18.5			
UL	(90° - 100°)	703.4	7.6		U4	
UH	(100° - 180°)	1011.8	10.9		U5	
Trapped Light		0	0.0			
Total Flux		9280	100.0			

### Zonal Lumen Summary

(Linear scale)

UH  
1011.8 Lm  
10.9%



REPORT NUMBER: RAB03065

ISSUE DATE: 03/09/17

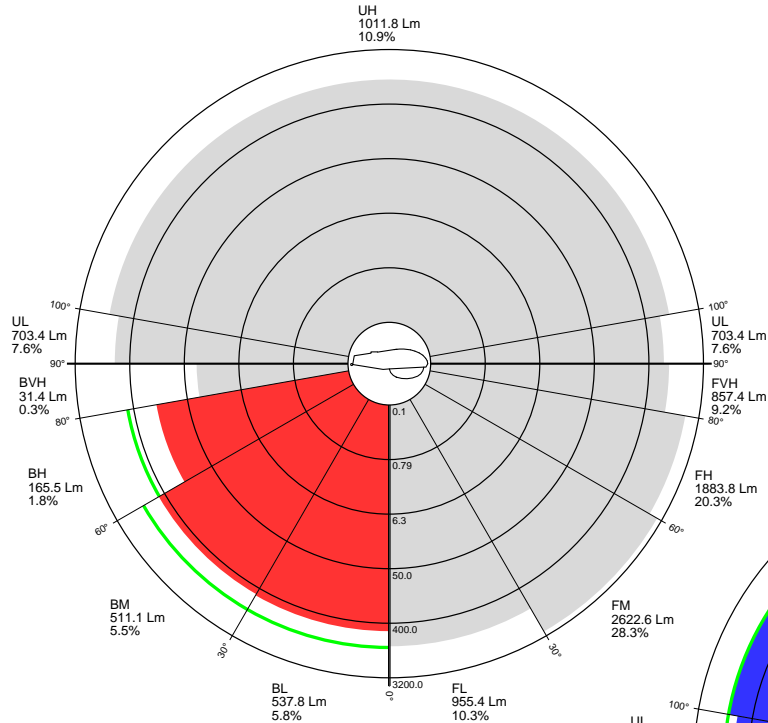
PAGE: 6 OF 9

DATE SAMPLE TESTED: 03/09/17

CATALOG NUMBER: WP3LED82, WP3LED82/D10 (STANDARD CUTOFF - PRISMATIC GLASS LENS)

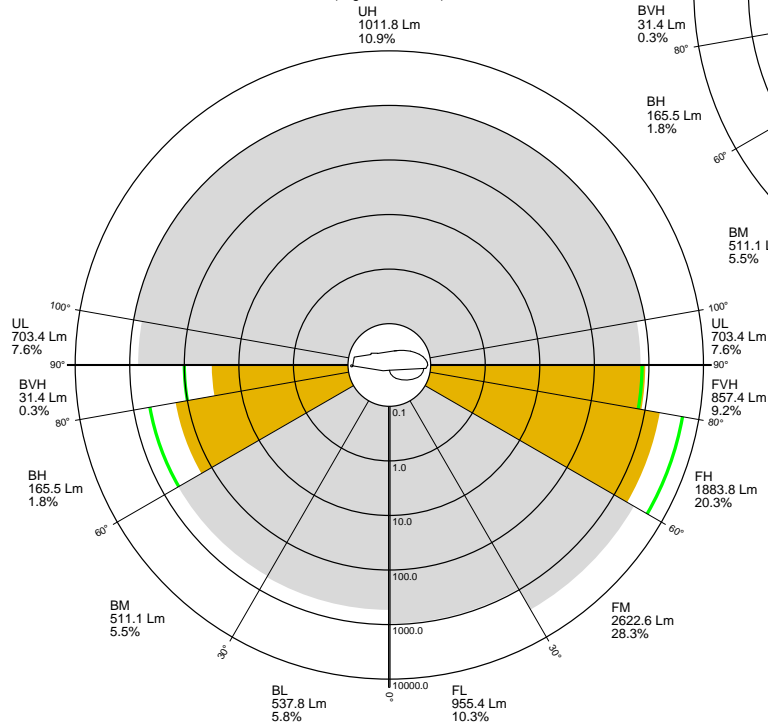
### Backlight Rating Details

(Logarithmic scale)



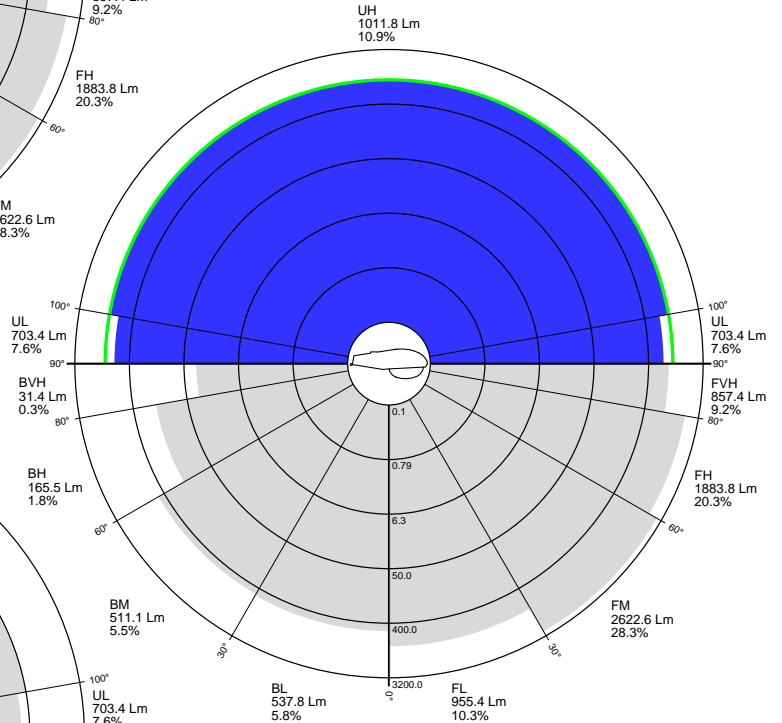
### Glare Rating Details

(Logarithmic scale)



### Uplight Rating Details

(Logarithmic scale)



REPORT NUMBER: RAB03065

PAGE: 7 OF 9

ISSUE DATE: 03/09/17

DATE SAMPLE TESTED: 03/09/17

CATALOG NUMBER: WP3LED82,WP3LED82/D10 (STANDARD CUTOFF - PRISMATIC GLASS LENS

### 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	5.	5.	5.	5.	5.	5.	5.	5.	5.
	175.0	1.	1.	2.	4.	5.	6.	7.	8.	9.
	165.0	29.	29.	29.	25.	22.	17.	11.	8.	9.
	155.0	88.	88.	86.	81.	71.	59.	42.	25.	11.
	145.0	196.	195.	192.	182.	168.	135.	98.	68.	34.
	135.0	288.	284.	265.	229.	180.	138.	123.	106.	63.
	125.0	503.	488.	469.	423.	339.	245.	156.	97.	88.
	115.0	1116.	1087.	1027.	873.	648.	450.	281.	145.	100.
	105.0	1763.	1747.	1697.	1489.	1165.	827.	544.	308.	131.
	95.0	2275.	2232.	2178.	2007.	1701.	1266.	872.	565.	310.
	90.0	2454.	2420.	2402.	2248.	1925.	1482.	1013.	701.	458.
	87.5	2617.	2565.	2482.	2315.	2003.	1543.	1062.	742.	549.
	85.0	2755.	2706.	2708.	2494.	2098.	1606.	1115.	812.	649.
V	82.5	2599.	2555.	2507.	2424.	2170.	1618.	1158.	881.	747.
E	80.0	3164.	3108.	3005.	2642.	2084.	1645.	1184.	934.	870.
R	77.5	2624.	2569.	2534.	2429.	2217.	1657.	1224.	1012.	1002.
T	75.0	3134.	3088.	2901.	2550.	2024.	1650.	1254.	1125.	1068.
I	72.5	2721.	2666.	2693.	2478.	2150.	1677.	1329.	1400.	1139.
C	70.0	2883.	2824.	2690.	2434.	2020.	1680.	1444.	1513.	1207.
A	67.5	2821.	2762.	2685.	2388.	2082.	1759.	1701.	1594.	1225.
L	65.0	2634.	2587.	2562.	2322.	2049.	1922.	1978.	1682.	1211.
	62.5	2708.	2651.	2546.	2315.	2153.	2084.	2021.	1743.	1144.
A	60.0	2689.	2653.	2564.	2390.	2361.	2436.	2160.	1786.	1124.
N	57.5	2546.	2510.	2544.	2534.	2467.	2546.	2290.	1789.	1142.
G	55.0	2792.	2744.	2700.	2705.	2748.	2645.	2308.	1736.	1181.
L	52.5	2899.	2875.	2834.	2940.	2850.	2658.	2301.	1661.	1239.
E	50.0	3000.	3053.	3233.	3094.	2965.	2668.	2300.	1540.	1309.
	47.5	3308.	3295.	3275.	3200.	2951.	2656.	2211.	1529.	1398.
	45.0<<	3312.	3371.	3202.	3163.	2847.	2615.	2135.	1578.	1498.
	42.5	3142.	3219.	3284.	2994.	2868.	2535.	1963.	1659.	1586.
	40.0	3157.	3188.	3101.	3043.	2757.	2455.	1849.	1774.	1669.
	37.5	3160.	3223.	3025.	2903.	2556.	2186.	1909.	1855.	1735.
	35.0	2832.	2954.	3041.	2627.	2578.	2135.	1968.	1902.	1827.
	30.0	2760.	2774.	2623.	2324.	2266.	2142.	2100.	2086.	1999.
	25.0	2338.	2338.	2341.	2232.	2372.	2250.	2292.	2194.	2026.
	20.0	2547.	2516.	2383.	2363.	2360.	2464.	2524.	2291.	2131.
	15.0	2624.	2636.	2637.	2402.	2279.	2642.	2224.	2254.	2269.
	10.0	2427.	2331.	2243.	2128.	2386.	2604.	2158.	2308.	2195.
	5.0	2164.	2188.	2191.	2271.	2323.	2350.	2266.	2120.	2118.
	0.0	2093.	2093.	2093.	2093.	2093.	2093.	2093.	2093.	2093.

||  
PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB03065

PAGE: 8 OF 9

ISSUE DATE: 03/09/17

DATE SAMPLE TESTED: 03/09/17

CATALOG NUMBER: WP3LED82,WP3LED82/D10 (STANDARD CUTOFF - PRISMATIC GLASS LENS

### 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	5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
	175.0	9.	9.	8.	8.	7.	6.	5.	4.	2.	1. 1.
	165.0	9.	9.	9.	8.	7.	7.	6.	4.	3.	2. 2.
	155.0	10.	9.	9.	9.	8.	7.	6.	5.	4.	3. 3.
	145.0	13.	11.	11.	11.	9.	8.	6.	5.	4.	4. 4.
	135.0	21.	16.	14.	15.	12.	9.	6.	5.	4.	4. 4.
	125.0	42.	34.	25.	21.	17.	12.	7.	5.	5.	5. 5.
	115.0	64.	54.	43.	33.	24.	16.	10.	7.	7.	7. 7.
	105.0	70.	60.	54.	45.	31.	21.	15.	11.	10.	10. 11.
	95.0	60.	67.	69.	63.	42.	26.	18.	13.	13.	13. 13.
	90.0	63.	65.	81.	74.	50.	31.	21.	15.	13.	13. 13.
	87.5	85.	70.	91.	82.	58.	35.	23.	16.	13.	14. 14.
	85.0	127.	84.	100.	94.	68.	42.	26.	16.	13.	13. 13.
V	82.5	182.	107.	111.	108.	80.	62.	43.	30.	29.	29. 30.
E	80.0	246.	142.	122.	122.	93.	85.	60.	56.	48.	50. 52.
R	77.5	324.	183.	133.	133.	104.	105.	77.	74.	68.	64. 66.
T	75.0	393.	235.	142.	140.	114.	118.	97.	89.	91.	80. 80.
I	72.5	455.	288.	152.	145.	123.	125.	120.	100.	111.	104. 103.
C	70.0	505.	342.	168.	151.	130.	130.	142.	113.	124.	133. 134.
A	67.5	552.	395.	194.	159.	139.	135.	155.	131.	129.	148. 151.
L	65.0	592.	451.	231.	171.	154.	140.	158.	153.	136.	147. 148.
	62.5	648.	508.	274.	186.	171.	152.	159.	169.	151.	142. 142.
A	60.0	690.	567.	323.	206.	190.	168.	165.	174.	174.	158. 155.
N	57.5	750.	629.	378.	236.	211.	187.	177.	173.	183.	189. 189.
G	55.0	827.	691.	438.	277.	231.	212.	194.	182.	178.	192. 193.
L	52.5	908.	767.	505.	324.	255.	235.	211.	201.	186.	177. 174.
E	50.0	999.	854.	572.	372.	285.	257.	236.	221.	208.	189. 187.
	47.5	1099.	939.	653.	428.	322.	280.	262.	242.	233.	222. 222.
	45.0<<	1188.	1034.	737.	489.	363.	307.	283.	271.	257.	247. 246.
	42.5	1283.	1126.	819.	563.	406.	338.	304.	291.	280.	269. 267.
	40.0	1378.	1218.	914.	655.	455.	374.	328.	308.	293.	285. 283.
	37.5	1466.	1318.	1009.	750.	523.	412.	358.	327.	311.	299. 298.
	35.0	1549.	1412.	1105.	859.	624.	466.	397.	355.	331.	326. 322.
	30.0	1715.	1587.	1317.	1063.	872.	674.	510.	448.	402.	389. 387.
	25.0	1853.	1727.	1508.	1278.	1097.	951.	815.	674.	591.	534. 535.
	20.0	1985.	1889.	1715.	1514.	1329.	1174.	1074.	990.	941.	905. 903.
	15.0	2040.	2013.	1847.	1730.	1588.	1437.	1332.	1253.	1221.	1163. 1164.
	10.0	2093.	2118.	1953.	1900.	1795.	1694.	1609.	1622.	1584.	1555. 1563.
	5.0	2107.	2109.	2134.	2052.	1970.	1921.	1905.	1901.	1902.	1901. 1907.
	0.0	2093.	2093.	2093.	2093.	2093.	2093.	2093.	2093.	2093.	2093. 2093.

CONE OF MAXIMUM CANDELA



REPORT NUMBER: RAB03065  
ISSUE DATE: 03/09/17  
PREPARED FOR: RAB LIGHTING INC.

PAGE: 9 OF 9  
DATE SAMPLE TESTED: 03/09/17

### 5-DEGREE ZONAL LUMEN SUMMARY

0- 5	50
5- 10	148
10- 15	235
15- 20	308
20- 25	356
25- 30	395
30- 35	438
35- 40	488
40- 45	533
45- 50	566
50- 55	564
55- 60	545
60- 65	527
65- 70	519
70- 75	510
75- 80	493
80- 85	465
85- 90	424
90- 95	378
95-100	326
100-105	271
105-110	214
110-115	161
115-120	114
120-125	77
125-130	53
130-135	38
135-140	28
140-145	22
145-150	17
150-155	9
155-160	5
160-165	3
165-170	1
170-175	0
175-180	0

### 10-DEGREE ZONAL LUMEN SUMMARY

0- 10	199
0- 20	742
0- 30	1493
0- 40	2419
0- 50	3518
0- 60	4627
0- 70	5672
0- 80	6676
0- 90	7565
0-100	8268
0-110	8753
0-120	9028
0-130	9157
0-140	9223
0-150	9261
0-160	9276
0-170	9280
0-180	9280

REPORT NUMBER: RAB03116  
 DATE: 3/28/2017  
 PREPARED FOR: RAB LIGHTING INC.  
 CATALOG NUMBER: WP3LED82,WP3LED82/D10 (STANDARD CUTOFF - PRISMATIC GLASS LENS)

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: LARGE WALLPACK WITH ALUMINUM PRECISION DIE CAST CONSTRUCTION AND TEMPERED GLASS REFRACTOR.

LAMP: ONE HUNDRED FORTY FOUR WHITE LIGHT EMITTING DIODES (LEDs).

DRIVER: RD-G075-A2800-C

OBJECT OF TEST: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT THE RATED INPUT VOLTAGES (120.0 AND 277.0 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 (277.0 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: RAB03116  
 DATE: 3/28/2017  
 PREPARED FOR: RAB LIGHTING INC.  
 CATALOG NUMBER: WP3LED82, WP3LED82/D10 (STANDARD CUTOFF - PRISMATIC GLASS LENS)

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### RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	9280 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3378
Chromaticity Ordinate y	0.3452
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2089
Chromaticity Ordinate v'	0.4804
Correlated Color Temp CCT (K)	5276
ANSI C78.377-2008 Duv	0.000
Total Radiant Flux (milliWatts)	29800 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.677
Input Power (Watts)	81.1
Input Power Factor (%)	99.8
Input Current THD (%)	5.6
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	114.4
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.299
Input Power (Watts)	79.3
Input Power Factor (%)	95.7
Input Current THD (%)	8.4
Input Voltage THD (%)	0.2
Off-State Power (Watts)	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	82
R1 Light greyish red	81
R2 Dark greyish yellow	86
R3 Strong yellowish green	88
R4 Moderate yellowish green	83
R5 Light bluish green	82
R6 Light blue	81
R7 Light violet	86
R8 Light reddish purple	70
R9 Strong red	13
R10 Strong yellow	66
R11 Strong green	83
R12 Strong blue	65
R13 Light yellowish pink (skin)	82
R14 Moderate olive green (leaf)	94

### \*NOTE:

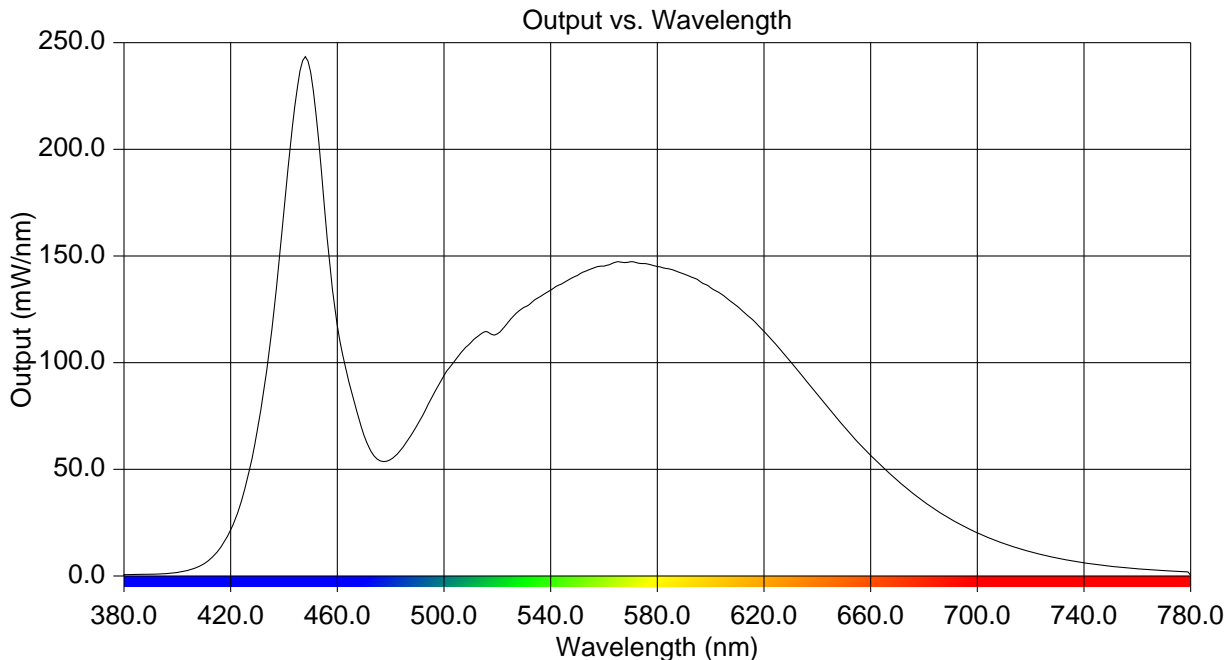
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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: RAB03116  
 DATE: 3/28/2017  
 PREPARED FOR: RAB LIGHTING INC.  
 CATALOG NUMBER: WP3LED82, WP3LED82/D10 (STANDARD CUTOFF - PRISMATIC GLASS LENS)

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### RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.602	515	114.393	650	70.132
385	0.709	520	113.516	655	62.948
390	0.820	525	120.406	660	56.636
395	1.068	530	125.937	665	50.493
400	1.672	535	130.223	670	44.806
405	2.962	540	133.987	675	39.576
410	5.746	545	137.556	680	34.866
415	11.335	550	140.822	685	30.554
420	21.411	555	143.858	690	26.640
425	39.495	560	145.244	695	23.296
430	68.394	565	147.319	700	20.251
435	110.759	570	147.338	705	17.551
440	170.763	575	146.452	710	15.175
445	228.770	580	145.166	715	13.121
450	236.148	585	143.776	720	11.324
455	175.290	590	141.560	725	9.745
460	117.287	595	139.042	730	8.365
465	87.777	600	135.131	735	7.193
470	65.896	605	131.342	740	6.164
475	54.876	610	126.400	745	5.307
480	54.605	615	120.929	750	4.566
485	61.030	620	114.514	755	3.928
490	70.853	625	107.974	760	3.387
495	82.699	630	100.297	765	2.914
500	93.949	635	92.794	770	2.514
505	102.393	640	85.153	775	2.177
510	109.286	645	77.438	780	0.329



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## CIE Chromaticity Diagram

