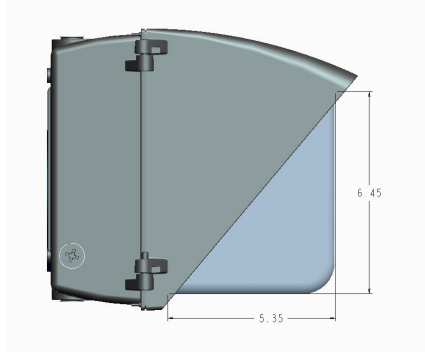


ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

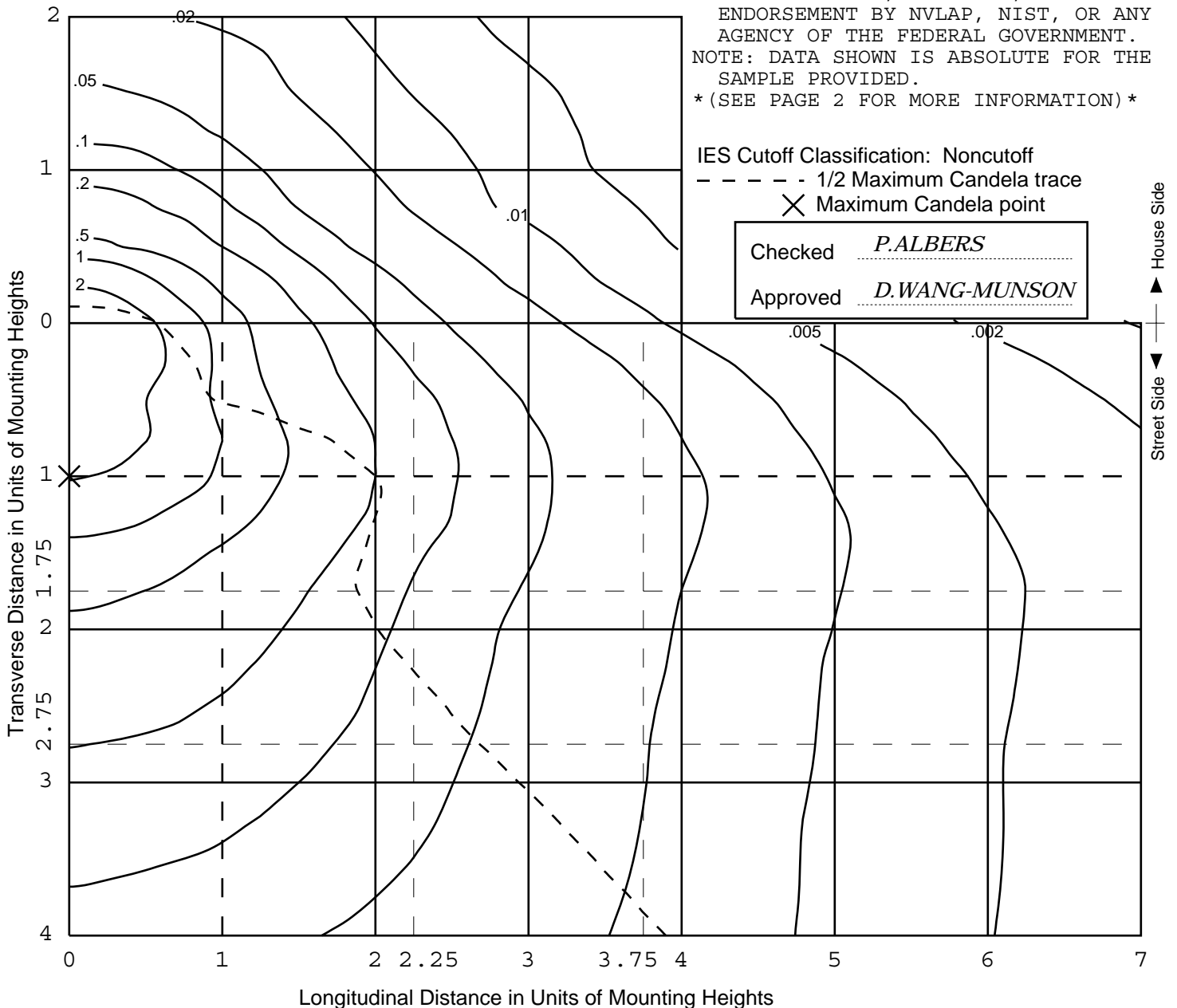
Values based on 20 foot mounting height.



REPORT NUMBER: RAB03102
 ISSUE DATE: 03/24/17 PAGE: 1 OF 9
 DATE SAMPLE TESTED: 03/24/17
 CATALOG NUMBER: WP3LED55Y/480 (ALSO APPLIES TO 347/RCL) (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: WP3LED55Y/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PR

ADDITIONAL INFORMATION

TOTAL INPUT WATTS = 57.057 W AT 480.0 VAC.

LED DRIVER: RD-H065-A1810

TEST PROCEDURE: IESNA LM-79-08

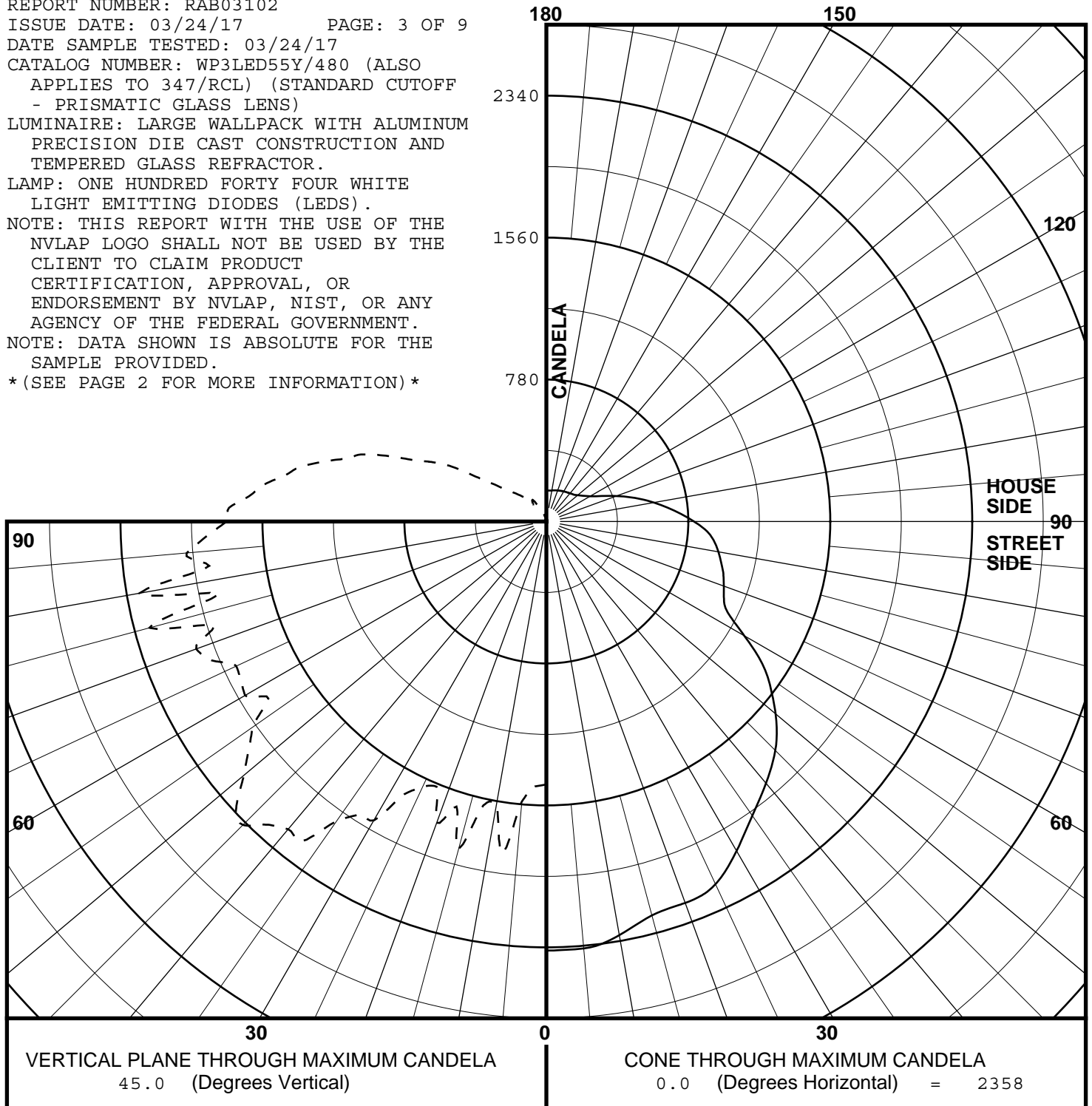
LM-80 DATA AVAILABLE FROM MANUFACTURER FOR SOLID STATE SOURCE

AMBIENT: 24.9

ACCREDITED LABORATORY CODE 201058-0

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

REPORT NUMBER: RAB03102
 ISSUE DATE: 03/24/17 PAGE: 3 OF 9
 DATE SAMPLE TESTED: 03/24/17
 CATALOG NUMBER: WP3LED55Y/480 (ALSO
 APPLIES TO 347/RCL) (STANDARD CUTOFF
 - PRISMATIC GLASS LENS)
 LUMINAIRE: LARGE WALLPACK WITH ALUMINUM
 PRECISION DIE CAST CONSTRUCTION AND
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 LAMP: ONE HUNDRED FORTY FOUR WHITE
 LIGHT EMITTING DIODES (LEDS).
 NOTE: THIS REPORT WITH THE USE OF THE
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 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: RAB03102

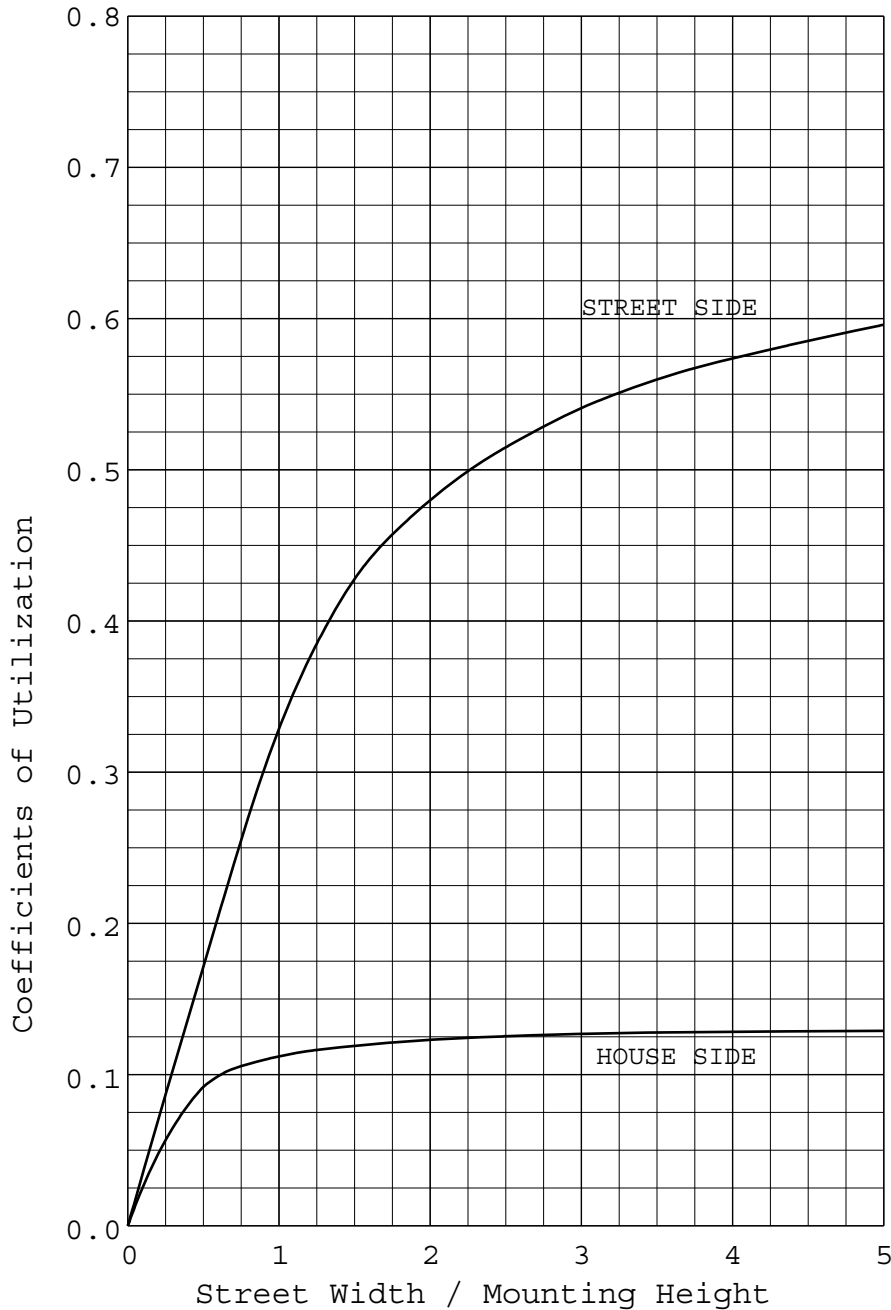
PAGE: 4 OF 9

ISSUE DATE: 03/24/17

DATE SAMPLE TESTED: 03/24/17

CATALOG NUMBER: WP3LED55Y/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PR

COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	4423.	68.1
DOWNWARD HOUSE SIDE	851.	13.1
DOWNWARD TOTAL	5274.	81.2
UPWARD STREET SIDE	1176.	18.1
UPWARD HOUSE SIDE	45.	0.7
UPWARD TOTAL	1221.	18.8
TOTAL FLUX	6495.	100.0

TOTAL INPUT WATTS = 57.1
EFFICACY = 113.7 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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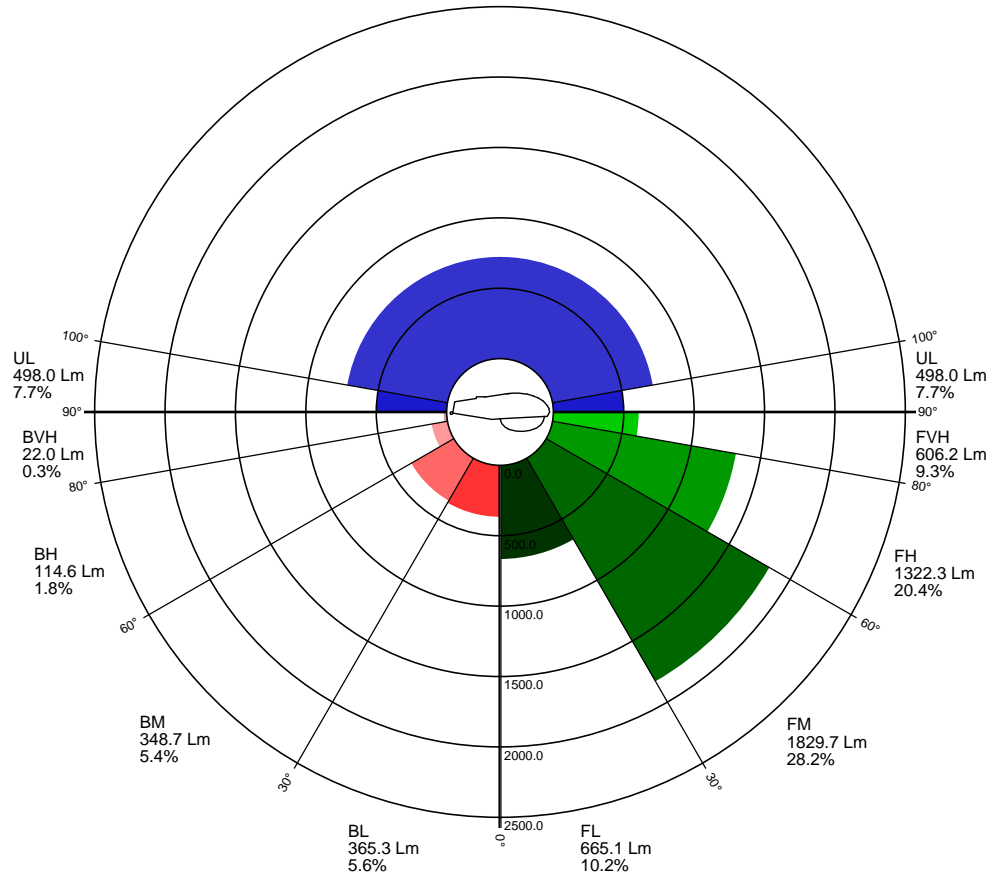
CATALOG NUMBER: WP3LED55Y/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC GLASS LENS)

Zonal Summary		Lumens	% of Fixture	Zone Ratings		
				B	U	G
Forward		4423	68.1			
FL	(0° - 30°)	665.1	10.2			
FM	(30° - 60°)	1829.7	28.2			
FH	(60° - 80°)	1322.3	20.4			G1
FVH	(80° - 90°)	606.2	9.3			G4
Backward		851	13.1			
BL	(0° - 30°)	365.3	5.6	B1		
BM	(30° - 60°)	348.7	5.4	B1		
BH	(60° - 80°)	114.6	1.8	B1		G1
BVH	(80° - 90°)	22.0	0.3			G1
Upward		1221	18.8			
UL	(90° - 100°)	498.0	7.7		U3	
UH	(100° - 180°)	722.6	11.1		U4	
Trapped Light		0	0.0			
Total Flux		6495	100.0			

Zonal Lumen Summary

(Linear scale)

UH
722.6 Lm
11.1%



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ISSUE DATE: 03/24/17

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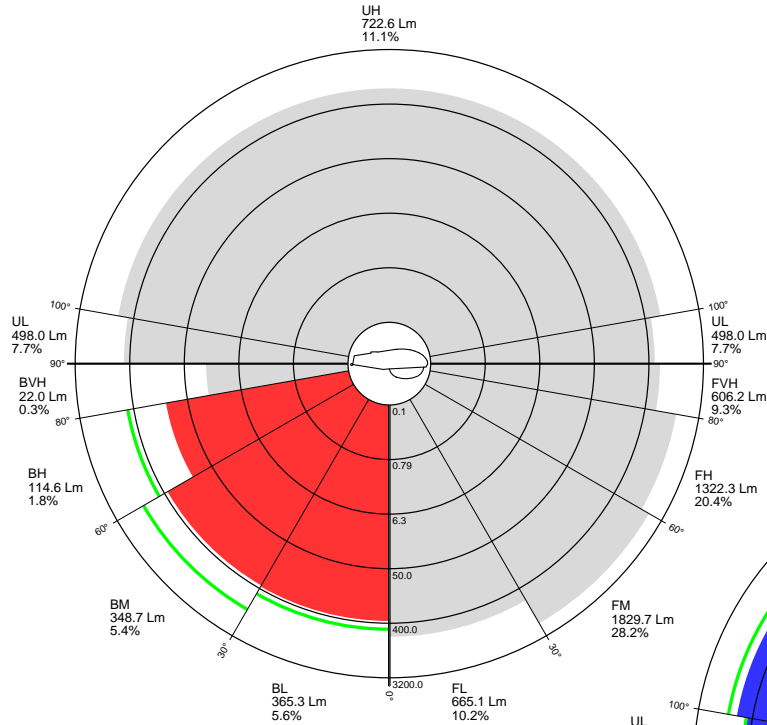
DATE SAMPLE TESTED: 03/24/17

CATALOG NUMBER: WP3LED55Y/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF -

PRISMATIC GLASS LENS)

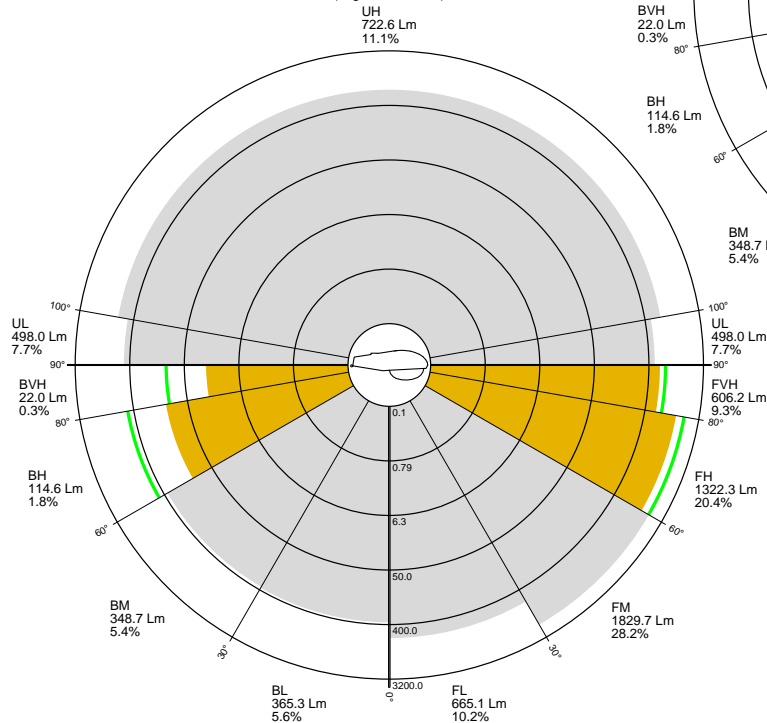
Backlight Rating Details

(Logarithmic scale)



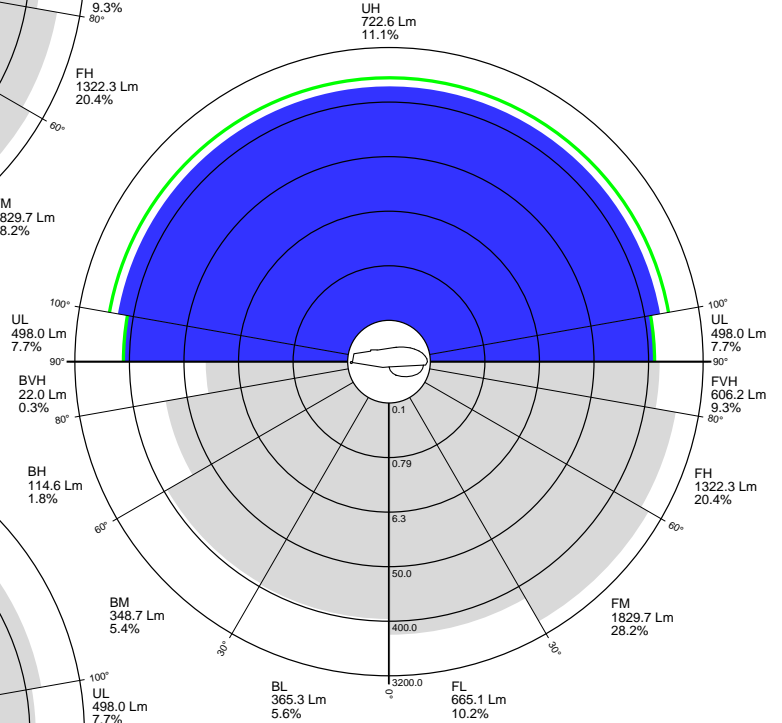
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)



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ISSUE DATE: 03/24/17

DATE SAMPLE TESTED: 03/24/17

CATALOG NUMBER: WP3LED55Y/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PR

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	4.	4.	4.	4.	4.	4.	4.	4.	4.
	175.0	1.	1.	2.	3.	4.	4.	5.	6.	6.
	165.0	22.	23.	20.	19.	16.	13.	9.	6.	6.
	155.0	64.	63.	61.	58.	50.	43.	31.	19.	9.
	145.0	135.	133.	133.	127.	117.	96.	69.	50.	25.
	135.0	203.	202.	189.	163.	127.	97.	87.	74.	47.
	125.0	365.	361.	333.	305.	241.	177.	111.	68.	63.
	115.0	794.	781.	727.	632.	466.	325.	201.	103.	70.
	105.0	1270.	1244.	1193.	1066.	825.	593.	383.	216.	92.
	95.0	1635.	1605.	1547.	1419.	1203.	902.	615.	400.	220.
	90.0	1756.	1733.	1700.	1600.	1360.	1046.	703.	483.	328.
	87.5	1869.	1819.	1742.	1625.	1409.	1086.	743.	523.	389.
	85.0	1984.	1949.	1925.	1777.	1481.	1126.	782.	569.	453.
V	82.5	1869.	1833.	1779.	1708.	1524.	1150.	810.	609.	519.
E	80.0	2271.	2221.	2152.	1878.	1470.	1154.	826.	653.	601.
R	77.5	1843.	1813.	1795.	1690.	1560.	1158.	850.	708.	688.
T	75.0	2258.	2200.	2054.	1815.	1434.	1158.	886.	784.	752.
I	72.5	1912.	1893.	1909.	1726.	1510.	1171.	926.	979.	788.
C	70.0	2048.	1996.	1917.	1722.	1426.	1188.	1010.	1057.	829.
A	67.5	1992.	1948.	1881.	1679.	1456.	1230.	1166.	1084.	844.
L	65.0	1880.	1839.	1802.	1623.	1436.	1354.	1414.	1194.	829.
	62.5	1893.	1847.	1781.	1620.	1520.	1469.	1420.	1237.	773.
A	60.0	1912.	1872.	1808.	1671.	1661.	1690.	1520.	1199.	766.
N	57.5	1811.	1780.	1811.	1793.	1734.	1771.	1613.	1238.	781.
G	55.0	1969.	1942.	1914.	1908.	1960.	1882.	1584.	1204.	801.
L	52.5	2061.	2039.	2015.	2091.	2016.	1850.	1606.	1113.	834.
E	50.0	2171.	2183.	2247.	2168.	2052.	1844.	1610.	1069.	882.
	47.5	2310.	2307.	2314.	2238.	2061.	1892.	1523.	1057.	932.
	45.0<<	2358.	2355.	2241.	2199.	1973.	1779.	1483.	1080.	1002.
	42.5	2260.	2268.	2286.	2094.	1989.	1733.	1361.	1139.	1073.
	40.0	2208.	2185.	2175.	2133.	1945.	1721.	1294.	1233.	1151.
	37.5	2215.	2248.	2105.	1997.	1805.	1533.	1306.	1331.	1249.
	35.0	2011.	2058.	2095.	1848.	1787.	1477.	1372.	1331.	1336.
	30.0	1897.	1862.	1805.	1671.	1566.	1497.	1428.	1479.	1376.
	25.0	1609.	1617.	1640.	1564.	1647.	1571.	1622.	1457.	1358.
	20.0	1761.	1744.	1694.	1673.	1634.	1685.	1829.	1626.	1479.
	15.0	1864.	1876.	1867.	1615.	1643.	1758.	1608.	1509.	1601.
	10.0	1583.	1532.	1508.	1551.	1737.	1756.	1479.	1616.	1475.
	5.0	1544.	1528.	1559.	1595.	1617.	1622.	1542.	1475.	1487.
	0.0	1445.	1445.	1445.	1445.	1445.	1445.	1445.	1445.	1445.

||
PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB03102

PAGE: 8 OF 9

ISSUE DATE: 03/24/17

DATE SAMPLE TESTED: 03/24/17

CATALOG NUMBER: WP3LED55Y/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	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.
	175.0	6.	6.	6.	6.	5.	5.	4.	3.	2.	2.	2.
	165.0	7.	6.	6.	6.	6.	5.	4.	3.	3.	3.	3.
	155.0	7.	7.	7.	7.	6.	5.	5.	4.	4.	3.	3.
	145.0	10.	9.	8.	8.	7.	6.	5.	4.	4.	4.	4.
	135.0	18.	14.	11.	11.	9.	7.	5.	4.	4.	4.	4.
	125.0	29.	23.	18.	16.	13.	9.	6.	5.	4.	4.	4.
	115.0	43.	36.	29.	23.	17.	12.	8.	6.	5.	6.	6.
	105.0	48.	41.	37.	32.	22.	15.	11.	8.	8.	8.	8.
	95.0	41.	46.	48.	44.	30.	19.	13.	10.	10.	10.	10.
	90.0	48.	45.	57.	52.	35.	22.	15.	11.	10.	10.	10.
	87.5	62.	50.	63.	57.	40.	24.	17.	12.	10.	10.	10.
	85.0	87.	61.	70.	65.	47.	29.	18.	12.	10.	10.	10.
V	82.5	124.	79.	78.	75.	55.	42.	30.	20.	20.	19.	21.
E	80.0	167.	101.	85.	84.	63.	58.	41.	38.	33.	35.	37.
R	77.5	219.	129.	93.	92.	71.	72.	52.	53.	47.	45.	46.
T	75.0	266.	161.	100.	98.	79.	83.	66.	63.	62.	56.	56.
I	72.5	309.	196.	106.	102.	85.	89.	81.	72.	77.	72.	71.
C	70.0	347.	230.	117.	106.	91.	92.	97.	79.	88.	93.	92.
A	67.5	374.	266.	133.	111.	96.	94.	108.	91.	92.	105.	106.
L	65.0	409.	307.	157.	119.	106.	98.	112.	106.	96.	105.	106.
	62.5	442.	346.	187.	129.	118.	105.	113.	119.	104.	102.	101.
A	60.0	478.	387.	219.	142.	131.	117.	116.	123.	120.	108.	108.
N	57.5	520.	430.	255.	161.	145.	129.	123.	122.	129.	131.	132.
G	55.0	564.	468.	292.	187.	160.	145.	134.	126.	126.	137.	138.
L	52.5	614.	522.	339.	219.	176.	162.	146.	139.	129.	127.	126.
E	50.0	680.	576.	390.	253.	196.	177.	162.	154.	144.	130.	128.
	47.5	746.	641.	445.	289.	219.	192.	181.	166.	160.	152.	152.
	45.0<<	812.	702.	502.	331.	247.	210.	196.	186.	177.	171.	170.
	42.5	882.	768.	558.	384.	274.	231.	210.	203.	195.	187.	186.
	40.0	942.	829.	612.	446.	307.	254.	226.	214.	205.	200.	199.
	37.5	1007.	902.	678.	508.	355.	279.	244.	225.	216.	208.	208.
	35.0	1064.	963.	744.	574.	422.	314.	269.	242.	230.	225.	224.
	30.0	1176.	1087.	890.	716.	584.	450.	348.	301.	274.	267.	267.
	25.0	1282.	1184.	1017.	859.	738.	637.	546.	453.	398.	361.	363.
	20.0	1373.	1277.	1165.	1027.	899.	790.	724.	668.	639.	612.	615.
	15.0	1409.	1368.	1270.	1174.	1087.	979.	898.	855.	831.	787.	790.
	10.0	1436.	1462.	1331.	1301.	1225.	1150.	1107.	1117.	1077.	1053.	1061.
	5.0	1451.	1451.	1464.	1396.	1355.	1336.	1313.	1304.	1290.	1290.	1281.
	0.0	1445.	1445.	1445.	1445.	1445.	1445.	1445.	1445.	1445.	1445.	1445.

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB03102
ISSUE DATE: 03/24/17
PREPARED FOR: RAB LIGHTING INC.

PAGE: 9 OF 9
DATE SAMPLE TESTED: 03/24/17

5-DEGREE ZONAL LUMEN SUMMARY

0- 5	34
5- 10	102
10- 15	163
15- 20	213
20- 25	245
25- 30	273
30- 35	303
35- 40	339
40- 45	369
45- 50	393
50- 55	393
55- 60	381
60- 65	368
65- 70	363
70- 75	359
75- 80	347
80- 85	329
85- 90	299
90- 95	267
95-100	231
100-105	192
105-110	152
110-115	115
115-120	82
120-125	55
125-130	38
130-135	27
135-140	20
140-145	15
145-150	12
150-155	7
155-160	4
160-165	2
165-170	1
170-175	0
175-180	0

10-DEGREE ZONAL LUMEN SUMMARY

0- 10	136
0- 20	512
0- 30	1030
0- 40	1673
0- 50	2434
0- 60	3209
0- 70	3940
0- 80	4646
0- 90	5274
0-100	5772
0-110	6116
0-120	6313
0-130	6406
0-140	6453
0-150	6480
0-160	6491
0-170	6494
0-180	6495

REPORT NUMBER: RAB03103
DATE: 3/24/2017
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: WP3LED55Y/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC GLASS LENS)

Page 1 of 4

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-H065-A1810

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: RAB03103
 DATE: 3/24/2017
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: WP3LED55Y/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC GLASS LENS)

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RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	6495 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4248
Chromaticity Ordinate y	0.3997
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2446
Chromaticity Ordinate v'	0.5179
Correlated Color Temp CCT (K)	3179
ANSI C78.377-2008 Duv	0.000
Total Radiant Flux (milliWatts)	19742 *
ELECTRICAL	
Input Voltage (Volts AC)	480.0
Input Current (Amps AC)	0.130
Input Power (Watts)	57.1
Input Power Factor (%)	91.4
Input Current THD (%)	13.5
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	113.7
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	347.0
Input Current (Amps AC)	0.166
Input Power (Watts)	56.0
Input Power Factor (%)	97.5
Input Current THD (%)	7.1
Input Voltage THD (%)	0.2
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	82
R1 Light greyish red	80
R2 Dark greyish yellow	90
R3 Strong yellowish green	97
R4 Moderate yellowish green	80
R5 Light bluish green	81
R6 Light blue	87
R7 Light violet	84
R8 Light reddish purple	60
R9 Strong red	7
R10 Strong yellow	76
R11 Strong green	79
R12 Strong blue	70
R13 Light yellowish pink (skin)	82
R14 Moderate olive green (leaf)	98

*NOTE:

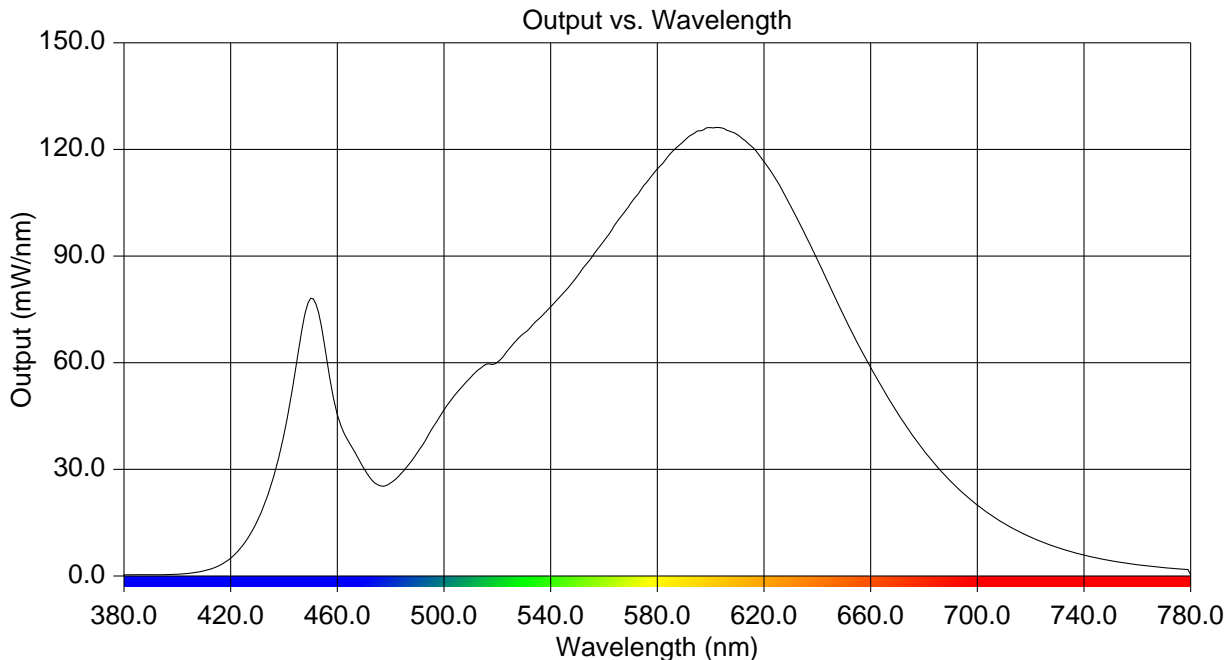
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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: RAB03103
 DATE: 3/24/2017
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: WP3LED55Y/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC GLASS LENS)

Page 3 of 4

RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.305	515	59.210	650	73.095
385	0.321	520	60.150	655	65.566
390	0.340	525	64.398	660	58.590
395	0.401	530	68.275	665	52.054
400	0.500	535	71.964	670	45.958
405	0.782	540	75.675	675	40.298
410	1.431	545	79.706	680	35.262
415	2.679	550	84.248	685	30.651
420	5.014	555	89.195	690	26.641
425	9.004	560	94.192	695	23.082
430	15.564	565	99.841	700	19.972
435	25.286	570	104.800	705	17.169
440	39.739	575	109.873	710	14.787
445	61.258	580	114.496	715	12.703
450	78.114	585	118.890	720	10.933
455	65.869	590	122.309	725	9.355
460	45.469	595	125.156	730	8.028
465	36.818	600	126.064	735	6.845
470	30.165	605	125.845	740	5.864
475	25.733	610	124.137	745	5.023
480	26.179	615	121.048	750	4.327
485	29.756	620	116.462	755	3.679
490	34.701	625	111.017	760	3.178
495	40.793	630	104.059	765	2.722
500	46.743	635	96.721	770	2.336
505	51.706	640	88.992	775	2.018
510	55.833	645	80.970	780	0.306



REPORT NUMBER: RAB03103
DATE: 3/24/2017
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: WP3LED55Y/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC GLASS LENS)

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CIE Chromaticity Diagram

