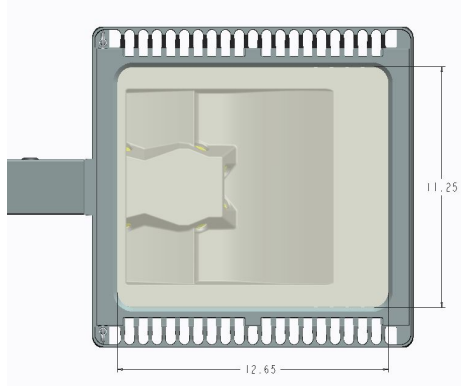


ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 25 foot mounting height.



REPORT NUMBER: RAB04339

ISSUE DATE: 05/02/18

PAGE: 1 OF 9

DATE SAMPLE TESTED: 05/02/18

CATALOG NUMBER: ALED3T50Y/480 -

RWLED3T50Y/480 - RWLED3T50SFY/480 -

WPLED3T50Y/480 (TYPE III) (ALSO

APPLIES TO 347 RCL)

LUMINAIRE: CAST FINNED METAL HOUSING, 6

CIRCUIT BOARDS EACH WITH 1 LED,

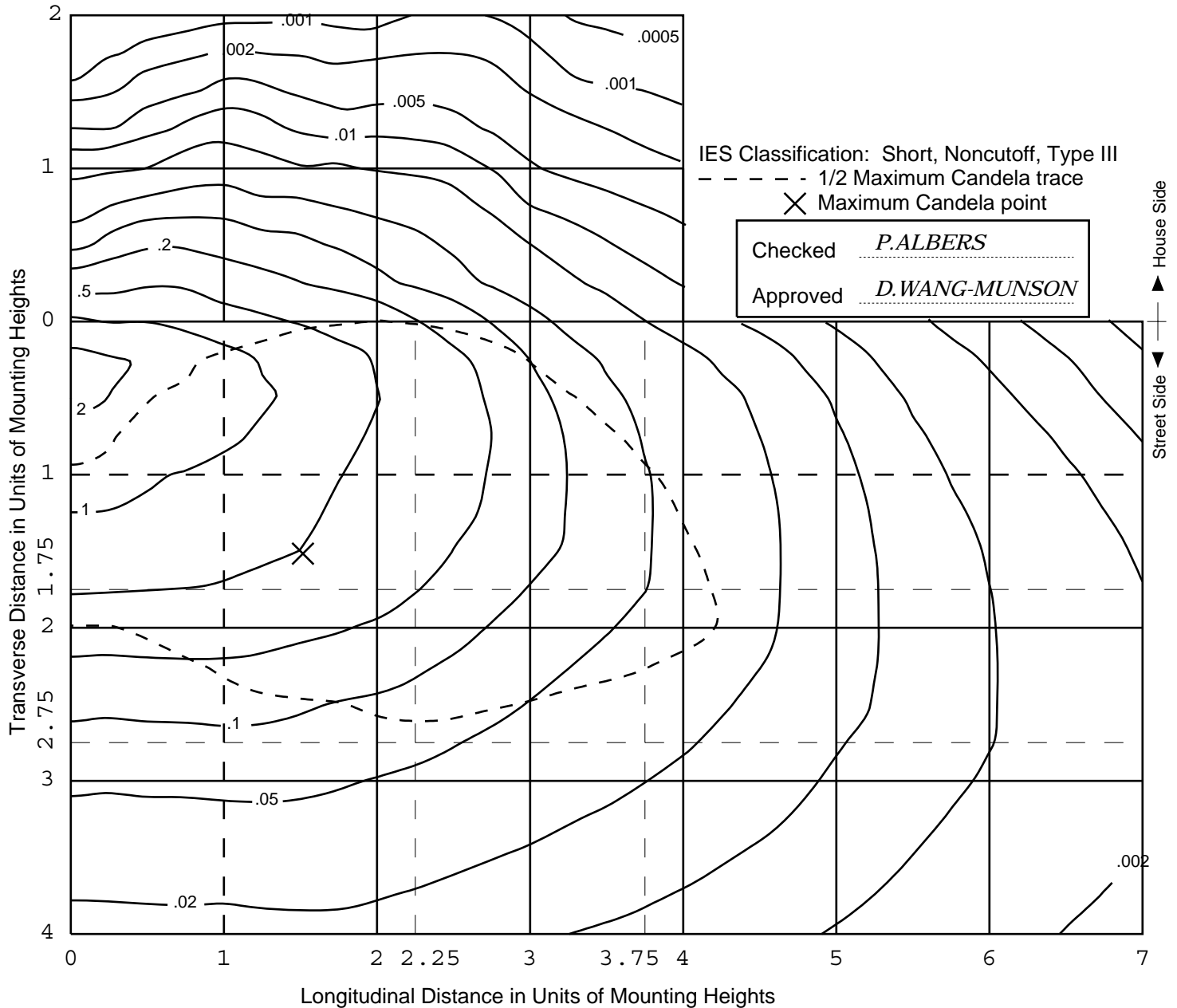
MOLDED PLASTIC REFLECTOR WITH

SPECULAR FINISH AND 1 APERTURE PER

LED, CLEAR FLAT GLASS LENS IN CAST

BROWN PAINTED METAL LENS FRAME.

(SEE PAGE 2 FOR MORE INFORMATION)



REPORT NUMBER: RAB04339

PAGE: 2 OF 9

ISSUE DATE: 05/02/18

DATE SAMPLE TESTED: 05/02/18

CATALOG NUMBER: ALED3T50Y/480 - RWLED3T50Y/480 - RWLED3T50SFY/480 - WPLED3T50

ADDITIONAL INFORMATION

LAMPS: SIX WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDs), 2 LEDs TILTED 63-DEGREES FROM VERTICAL BASE-UP POSITION AND CANTED 75-DEGREES FROM STRAIGHT AHEAD, 2 LEDs TILTED 67-DEGREES FROM VERTICAL BASE-UP POSITION AND CANTED 68-DEGREES FROM STRAIGHT AHEAD, 2 LEDs TILTED 58-DEGREES FROM VERTICAL BASE-UP POSITION AND CANTED 40-DEGREES FROM STRAIGHT AHEAD.

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.

TOTAL INPUT WATTS = 53.954 W AT 480.0 VAC.

LED DRIVER: RDD-H65-36A-A1400-480

TEST PROCEDURE: IESNA LM-79-08

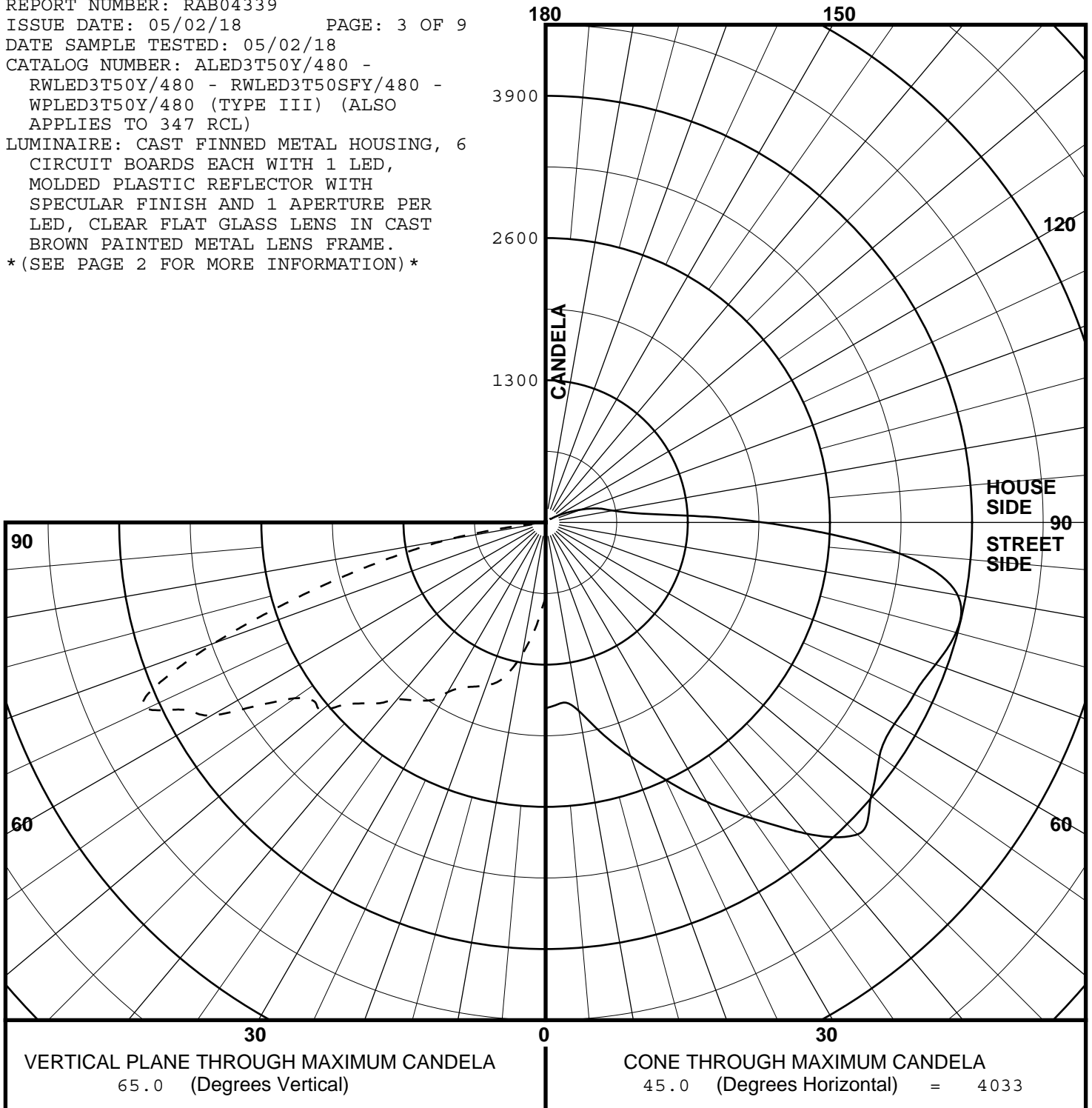
LM-80 DATA AVAILABLE FROM MANUFACTURER FOR SOLID STATE SOURCE

AMBIENT: 25.6

ACCREDITED LABORATORY CODE 201058-0

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

REPORT NUMBER: RAB04339
 ISSUE DATE: 05/02/18 PAGE: 3 OF 9
 DATE SAMPLE TESTED: 05/02/18
 CATALOG NUMBER: ALED3T50Y/480 -
 RWLED3T50Y/480 - RWLED3T50SFY/480 -
 WPLED3T50Y/480 (TYPE III) (ALSO
 APPLIES TO 347 RCL)
 LUMINAIRE: CAST FINNED METAL HOUSING, 6
 CIRCUIT BOARDS EACH WITH 1 LED,
 MOLDED PLASTIC REFLECTOR WITH
 SPECULAR FINISH AND 1 APERTURE PER
 LED, CLEAR FLAT GLASS LENS IN CAST
 BROWN PAINTED METAL LENS FRAME.
 (SEE PAGE 2 FOR MORE INFORMATION)



REPORT NUMBER: RAB04339

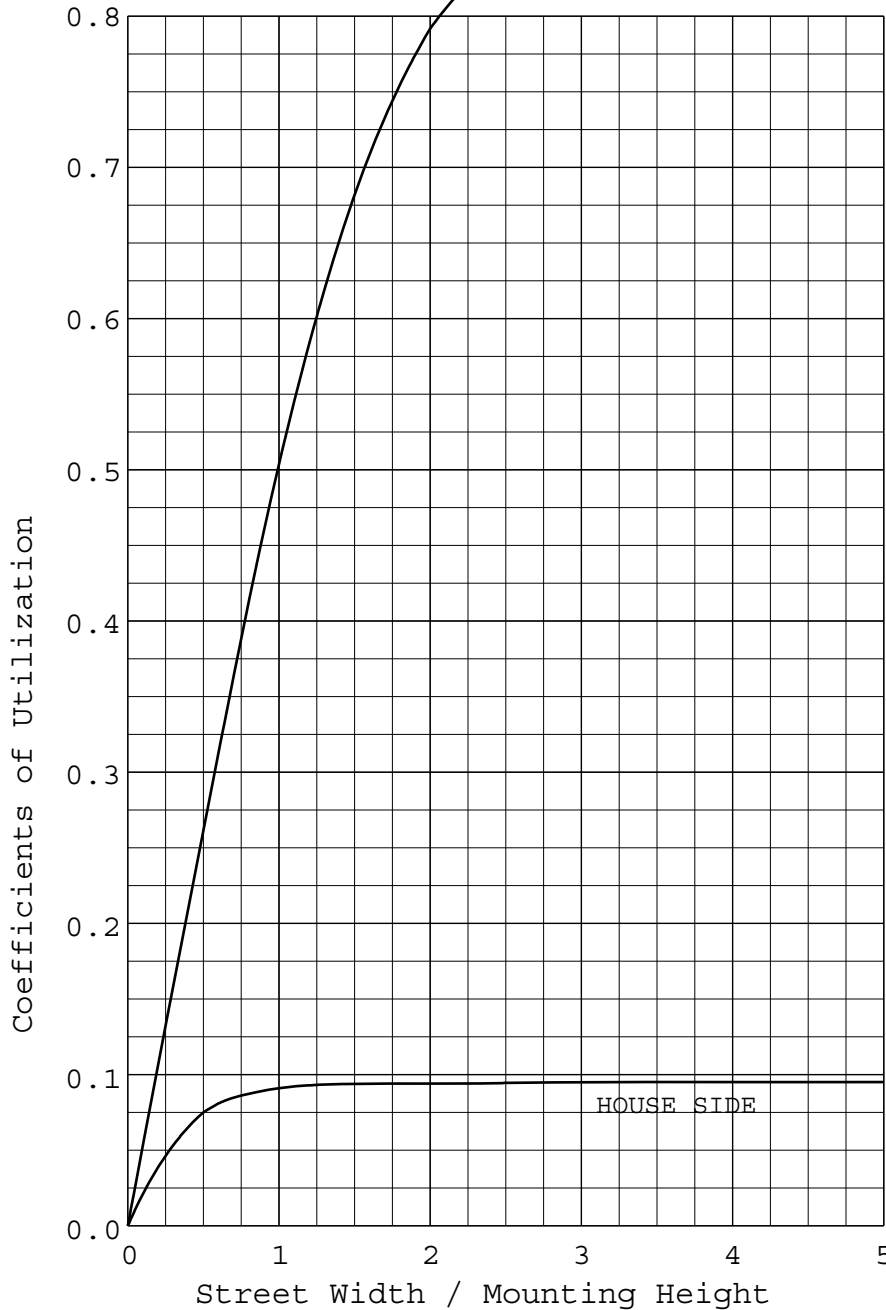
PAGE: 4 OF 9

ISSUE DATE: 05/02/18

DATE SAMPLE TESTED: 05/02/18

CATALOG NUMBER: ALED3T50Y/480 - RWLED3T50Y/480 - RWLED3T50SFY/480 - WPLED3T50

COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	5857.	90.5
DOWNWARD HOUSE SIDE	618.	9.5
DOWNWARD TOTAL	6475.	100.0
UPWARD STREET SIDE	0.	0.0
UPWARD HOUSE SIDE	0.	0.0
UPWARD TOTAL	0.	0.0
TOTAL FLUX	6475.	100.0

TOTAL INPUT WATTS = 54
EFFICACY = 119.9 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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ISSUE DATE: 05/02/18

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DATE SAMPLE TESTED: 05/02/18

CATALOG NUMBER: ALED3T50Y/480 - RWLED3T50Y/480 - RWLED3T50SFY/480 -

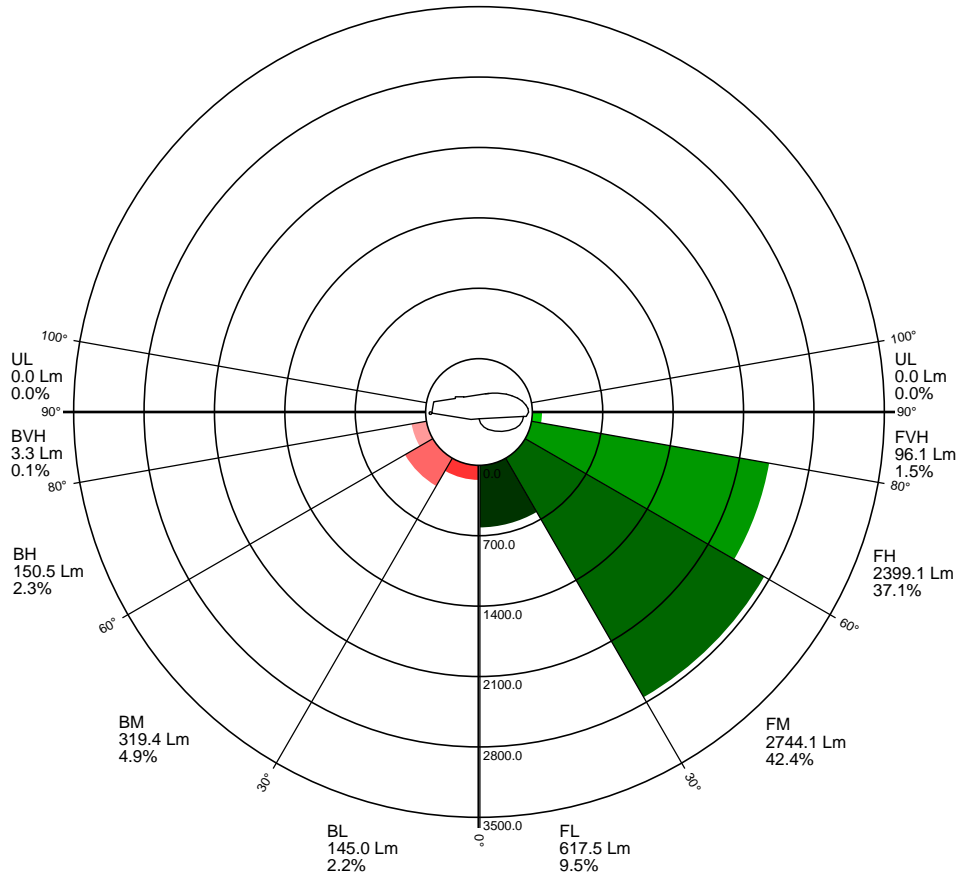
WPL3T50Y/480 (TYPE III) (ALSO APPLIES TO CL)

Zonal Summary		Lumens	% of Fixture	Zone Ratings		
				B	U	G
Forward		5857	90.5			
FL	(0° - 30°)	617.5	9.5			
FM	(30° - 60°)	2744.1	42.4			
FH	(60° - 80°)	2399.1	37.1			G2
FVH	(80° - 90°)	96.1	1.5			G1
Backward		618	9.5			
BL	(0° - 30°)	145.0	2.2	B1		
BM	(30° - 60°)	319.4	4.9	B1		
BH	(60° - 80°)	150.5	2.3	B1		G1
BVH	(80° - 90°)	3.3	0.1			G0
Upward		0	0.0			
UL	(90° - 100°)	0.0	0.0		U0	
UH	(100° - 180°)	0.0	0.0		U0	
Trapped Light		0	0.0			
Total Flux		6475	100.0			

Zonal Lumen Summary

(Linear scale)

UH
0.0 Lm
0.0%



REPORT NUMBER: RAB04339

ISSUE DATE: 05/02/18

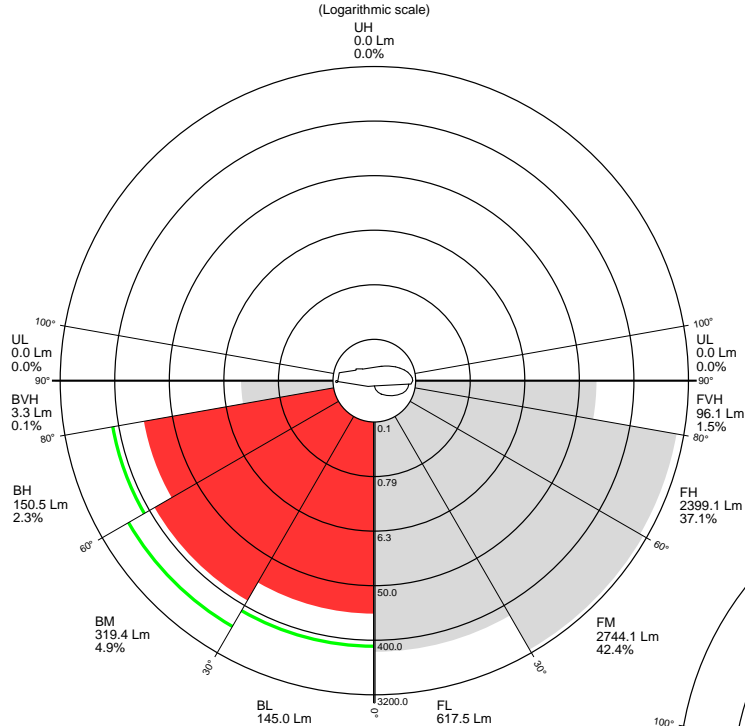
PAGE: 6 OF 9

DATE SAMPLE TESTED: 05/02/18

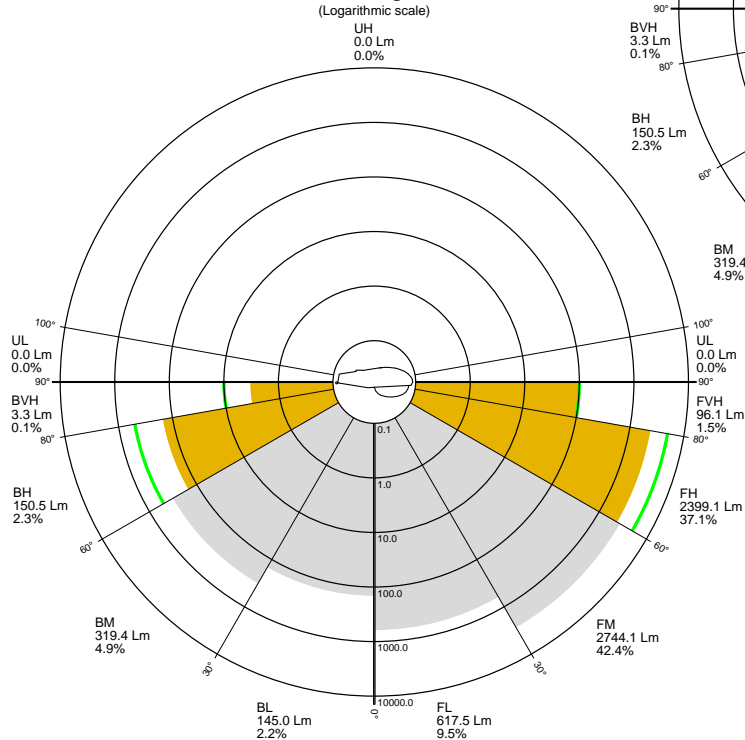
CATALOG NUMBER: ALED3T50Y/480 - RWLED3T50Y/480 - RWLED3T50SFY/480 -

WPLED3T50Y/480 (TYPE III) (ALSO APPLIES TO 347 RCL)

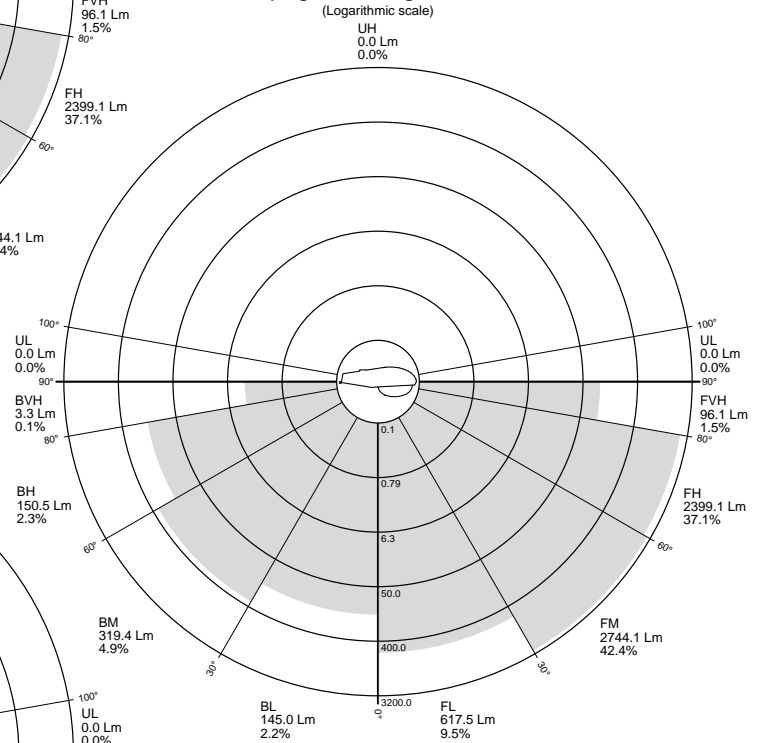
Backlight Rating Details



Glare Rating Details



Uplight Rating Details



REPORT NUMBER: RAB04339

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ISSUE DATE: 05/02/18

DATE SAMPLE TESTED: 05/02/18

CATALOG NUMBER: ALED3T50Y/480 - RWLED3T50Y/480 - RWLED3T50SFY/480 - WPLED3T50

CANDELA TABULATION

	LATERAL ANGLE									
	STREET SIDE	0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0 85.0
	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	175.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	165.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	155.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	145.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	135.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	125.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	115.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	105.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	95.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	90.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	87.5	2.	2.	3.	4.	6.	8.	8.	10.	8. 5.
	85.0	11.	11.	27.	48.	56.	87.	86.	119.	79. 11.
V	82.5	35.	61.	139.	182.	249.	352.	505.	672.	458. 92.
E	80.0	113.	165.	273.	455.	573.	920.	1219.	1325.	929. 427.
R	77.5	397.	449.	573.	894.	1074.	1385.	1802.	2159.	1644. 1040.
T	75.0	770.	788.	937.	1284.	1550.	1924.	2285.	2809.	2222. 1338.
I	72.5	1037.	1025.	1199.	1595.	1902.	2547.	3057.	3544.	2936. 1777.
C	70.0	1242.	1220.	1430.	1907.	2260.	3223.	3920.	3854.	3605. 2468.
A	67.5	1495.	1452.	1694.	2213.	2783.	3814.	3992.	3836.	3807. 2937.
L	65.0<<	1699.	1657.	1999.	2595.	3306.	4033.	3727.	3719.	3886. 3248.
	62.5	2142.	2097.	2478.	3117.	3721.	3711.	3651.	3481.	3949. 3195.
A	60.0	2778.	2740.	3060.	3574.	3712.	3531.	3329.	3540.	3826. 3055.
N	57.5	3203.	3215.	3359.	3455.	3293.	3112.	3142.	3767.	3549. 2835.
G	55.0	3161.	3159.	3050.	2978.	2932.	2803.	2913.	3490.	3174. 2593.
L	52.5	2694.	2690.	2701.	2627.	2572.	2677.	2930.	3044.	2855. 2238.
E	50.0	2395.	2392.	2436.	2323.	2301.	2673.	2829.	2820.	2586. 1876.
	47.5	2223.	2211.	2190.	2138.	2263.	2454.	2577.	2519.	2382. 1763.
	45.0	2075.	2073.	2022.	2074.	2270.	2339.	2318.	2288.	2233. 1585.
	42.5	1940.	1951.	1968.	2154.	2173.	2240.	2185.	2136.	2063. 1440.
	40.0	1952.	1957.	1990.	2088.	2121.	2108.	2054.	1997.	1962. 1330.
	37.5	1835.	1822.	1890.	2097.	2005.	2046.	1912.	1868.	1790. 1263.
	35.0	1893.	1886.	1972.	2008.	2009.	1989.	1873.	1849.	1670. 1199.
	30.0	1955.	1935.	1887.	1891.	1887.	1792.	1761.	1794.	1641. 1142.
	25.0	2018.	2001.	1838.	1771.	1701.	1659.	1653.	1612.	1359. 992.
	20.0	1869.	1870.	1768.	1651.	1604.	1586.	1537.	1395.	1160. 867.
	15.0	1676.	1679.	1648.	1580.	1517.	1466.	1375.	1203.	981. 769.
	10.0	1507.	1502.	1497.	1414.	1344.	1222.	1105.	969.	824. 696.
	5.0	1097.	1081.	1081.	1042.	1009.	941.	879.	805.	742. 689.
	0.0	683.	683.	683.	683.	683.	683.	683.	683.	683. 683.

||

PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB04339

PAGE: 8 OF 9

ISSUE DATE: 05/02/18

DATE SAMPLE TESTED: 05/02/18

CATALOG NUMBER: ALED3T50Y/480 - RWLED3T50Y/480 - RWLED3T50SFY/480 - WPLED3T50

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	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	175.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	165.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	155.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	145.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	135.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	125.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	115.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	105.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	95.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	90.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	87.5	5.	5.	5.	5.	5.	4.	3.	2.	2.	2.
	85.0	7.	6.	5.	5.	4.	4.	3.	2.	2.	2.
V	82.5	38.	20.	10.	6.	5.	3.	3.	2.	2.	2.
E	80.0	216.	99.	25.	15.	5.	3.	3.	2.	3.	3.
R	77.5	513.	270.	55.	25.	7.	3.	3.	2.	3.	3.
T	75.0	745.	369.	109.	28.	15.	6.	3.	2.	3.	3.
I	72.5	1049.	526.	146.	71.	40.	10.	6.	3.	4.	4.
C	70.0	1511.	733.	357.	122.	45.	11.	11.	3.	4.	5.
A	67.5	1842.	865.	490.	166.	48.	18.	8.	4.	4.	5.
L	65.0 <<	1996.	903.	494.	208.	58.	34.	16.	5.	5.	5.
	62.5	2093.	952.	515.	257.	75.	50.	33.	10.	5.	4.
A	60.0	1871.	950.	572.	304.	98.	70.	41.	15.	7.	4.
N	57.5	1793.	931.	563.	296.	120.	93.	48.	20.	9.	4.
G	55.0	1666.	960.	526.	306.	143.	101.	52.	25.	11.	5.
L	52.5	1519.	966.	472.	319.	185.	100.	59.	30.	15.	6.
E	50.0	1377.	974.	456.	365.	239.	122.	64.	34.	18.	22.
	47.5	1292.	908.	487.	333.	247.	136.	77.	38.	23.	29.
	45.0	1227.	861.	488.	336.	237.	144.	91.	47.	33.	29.
	42.5	1179.	883.	496.	333.	249.	155.	95.	80.	42.	26.
	40.0	1103.	941.	558.	339.	268.	164.	102.	70.	60.	38.
	37.5	1046.	925.	735.	380.	267.	173.	114.	73.	63.	47.
	35.0	1009.	890.	757.	490.	303.	201.	128.	85.	65.	51.
	30.0	929.	820.	618.	438.	312.	240.	195.	96.	69.	56.
	25.0	826.	733.	555.	437.	291.	212.	157.	119.	86.	73.
	20.0	748.	671.	535.	464.	339.	233.	169.	132.	123.	113.
	15.0	680.	623.	540.	460.	408.	347.	283.	223.	201.	171.
	10.0	637.	595.	526.	485.	439.	408.	381.	353.	328.	302.
	5.0	660.	638.	592.	552.	522.	499.	488.	469.	458.	447.
	0.0	683.	683.	683.	683.	683.	683.	683.	683.	683.	683.

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB04339

ISSUE DATE: 05/02/18

PREPARED FOR: RAB LIGHTING INC. RC LIGHTING

PAGE: 9 OF 9

DATE SAMPLE TESTED: 05/02/18

5-DEGREE ZONAL LUMEN SUMMARY

0- 5	17
5- 10	54
10- 15	99
15- 20	145
20- 25	195
25- 30	252
30- 35	312
35- 40	364
40- 45	427
45- 50	514
50- 55	643
55- 60	803
60- 65	844
65- 70	783
70- 75	591
75- 80	331
80- 85	94
85- 90	6
90- 95	0
95-100	0
100-105	0
105-110	0
110-115	0
115-120	0
120-125	0
125-130	0
130-135	0
135-140	0
140-145	0
145-150	0
150-155	0
155-160	0
160-165	0
165-170	0
170-175	0
175-180	0

10-DEGREE ZONAL LUMEN SUMMARY

0- 10	71
0- 20	315
0- 30	762
0- 40	1439
0- 50	2380
0- 60	3826
0- 70	5453
0- 80	6376
0- 90	6475
0-100	6475
0-110	6475
0-120	6475
0-130	6475
0-140	6475
0-150	6475
0-160	6475
0-170	6475
0-180	6475

REPORT NUMBER: RAB04340
DATE: 5/2/2018
PREPARED FOR: RAB LIGHTING INC. RC LIGHTING
CATALOG NUMBER: ALED3T50Y/480 - RWLED3T50Y/480 - RWLED3T50SFY/480 - WPLED3T50Y/480
(TYPE III) (ALSO APPLIES TO 347 RCL)

Page 1 of 4

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: CAST FINNED METAL HOUSING, 6 CIRCUIT BOARDS EACH WITH 1 LED, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH AND 1 APERTURE PER LED, CLEAR FLAT GLASS LENS IN CAST BROWN PAINTED METAL LENS FRAME.

LAMP: SIX WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDs), 2 LEDs TILTED 63-DEGREES FROM VERTICAL BASE-UP POSITION AND CANTED 75-DEGREES FROM STRAIGHT AHEAD, 2 LEDs TILTED 67-DEGREES FROM VERTICAL BASE-UP POSITION AND CANTED 68-DEGREES FROM STRAIGHT AHEAD, 2 LEDs TILTED 58-DEGREES FROM VERTICAL BASE-UP POSITION AND CANTED 40-DEGREES FROM STRAIGHT AHEAD.

DRIVER: RDD-H65-36A-A1400-480

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	N/A
	CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202	3/08/19
	OCEAN OPTICS QE65PRO Spectroradiometer	04/23/19
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	04/23/19

Calibration Due:

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: RAB04340
 DATE: 5/2/2018
 PREPARED FOR: RAB LIGHTING INC. RC LIGHTING
 CATALOG NUMBER: ALED3T50Y/480 - RWLED3T50Y/480 - RWLED3T50SFY/480 - WPLED3T50Y/480
 (TYPE III) (ALSO APPLIES TO 347 RCL)

Page 2 of 4

RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	6475 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4335
Chromaticity Ordinate y	0.4067
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2473
Chromaticity Ordinate v'	0.5219
Correlated Color Temp CCT (K)	3079
ANSI C78.377-2008 Duv	0.002
Total Radiant Flux (milliWatts)	17955 *
ELECTRICAL	
Input Voltage (Volts AC)	480.0
Input Current (Amps AC)	0.125
Input Power (Watts)	54.0
Input Power Factor (%)	90.3
Input Current THD (%)	13.6
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	119.9
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	347.0
Input Current (Amps AC)	0.155
Input Power (Watts)	52.5
Input Power Factor (%)	97.5
Input Current THD (%)	5.7
Input Voltage THD (%)	0.2
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	71
R1 Light greyish red	66
R2 Dark greyish yellow	82
R3 Strong yellowish green	95
R4 Moderate yellowish green	69
R5 Light bluish green	68
R6 Light blue	77
R7 Light violet	75
R8 Light reddish purple	38
R9 Strong red	-46
R10 Strong yellow	61
R11 Strong green	66
R12 Strong blue	59
R13 Light yellowish pink (skin)	69
R14 Moderate olive green (leaf)	97

*NOTE:

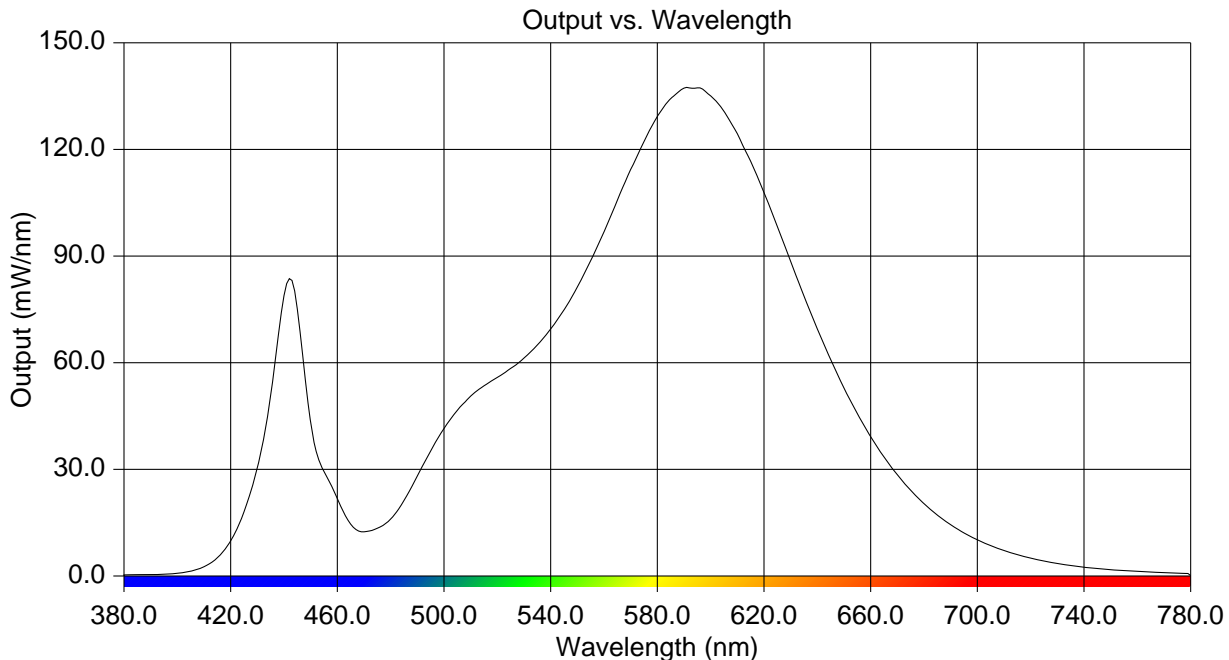
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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: RAB04340
 DATE: 5/2/2018
 PREPARED FOR: RAB LIGHTING INC. RC LIGHTING
 CATALOG NUMBER: ALED3T50Y/480 - RWLED3T50Y/480 - RWLED3T50SFY/480 - WPLED3T50Y/480
 (TYPE III) (ALSO APPLIES TO 347 RCL)

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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.301	515	53.491	650	52.764
385	0.352	520	55.869	655	45.670
390	0.381	525	58.392	660	39.167
395	0.501	530	61.304	665	33.436
400	0.760	535	64.980	670	28.464
405	1.340	540	69.490	675	24.113
410	2.607	545	74.822	680	20.393
415	5.097	550	81.245	685	17.136
420	9.890	555	88.716	690	14.380
425	18.049	560	96.691	695	12.105
430	30.479	565	105.647	700	10.144
435	50.707	570	114.344	705	8.549
440	78.866	575	122.137	710	7.149
445	75.048	580	129.245	715	5.983
450	43.151	585	134.280	720	5.007
455	29.391	590	137.214	725	4.195
460	21.797	595	137.289	730	3.522
465	14.584	600	135.027	735	2.943
470	12.425	605	130.686	740	2.478
475	13.431	610	124.399	745	2.103
480	16.003	615	116.640	750	1.779
485	21.247	620	107.811	755	1.505
490	28.159	625	98.476	760	1.273
495	35.229	630	88.342	765	1.083
500	41.560	635	78.703	770	0.925
505	46.588	640	69.452	775	0.794
510	50.601	645	60.950	780	0.118



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CIE Chromaticity Diagram

