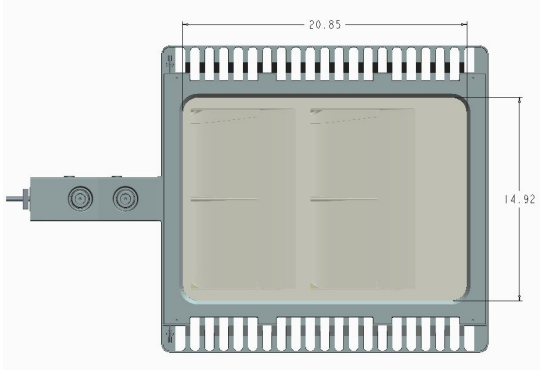


ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 25 foot mounting height.



REPORT NUMBER: RAB01670
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 DATE SAMPLE TESTED: 04/01/16
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: ALED3T260Y/480/D10 -
 ALED3T260SFY/480/D10 -
 WPLED3T260Y/480/D10 -
 WPLED3T260YFX/480/D10 (TYPE III)
 LUMINAIRE: CAST FINNED METAL HOUSING, 4
 CHIP ON BOARD LIGHT EMITTING DIODES,
 MOLDED PLASTIC REFLECTOR WITH
 SPECULAR FINISH, CLEAR GLASS LENS IN
 CAST BRONZE PAINTED METAL FRAME.
 LAMPS: FOUR WHITE LIGHT EMITTING DIODES
 (LEDs)

NOTE: DATA SHOWN IS ABSOLUTE FOR THE
 SAMPLE PROVIDED.
 TOTAL INPUT WATTS = 251.35 W AT 347.0
 VAC.

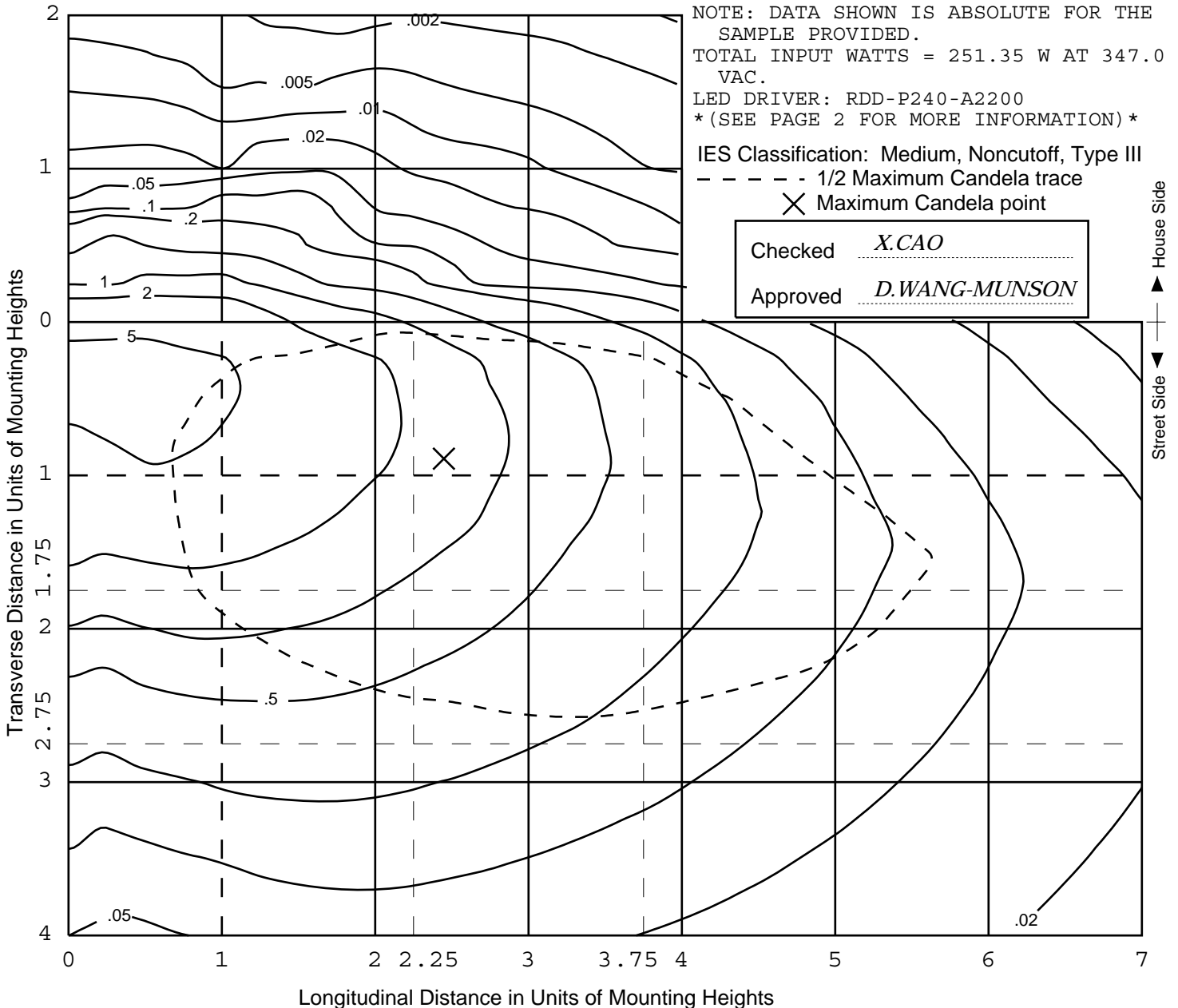
LED DRIVER: RDD-P240-A2200

(SEE PAGE 2 FOR MORE INFORMATION)

IES Classification: Medium, Noncutoff, Type III

--- 1/2 Maximum Candela trace

X Maximum Candela point



REPORT NUMBER: RAB01670
ISSUE DATE: 04/01/16
PREPARED FOR: RAB LIGHTING INC.

PAGE: 2 OF 9
DATE SAMPLE TESTED: 04/01/16

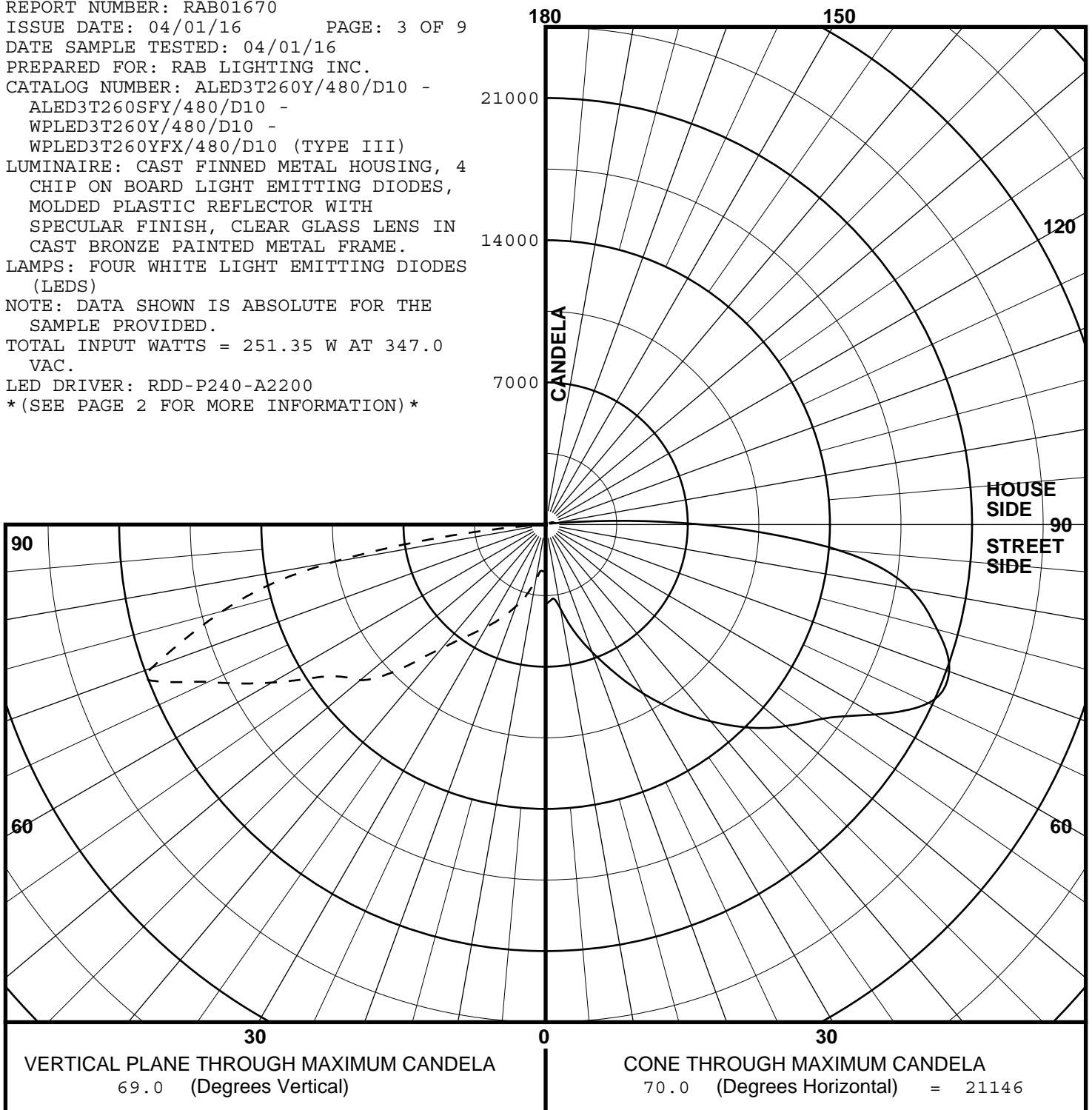
ADDITIONAL INFORMATION

TEST PROCEDURE: IESNA LM-79-08
ACCREDITED LABORATORY CODE 201058-0
TEST DISTANCE : 28.25 FEET

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.

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

REPORT NUMBER: RAB01670
 ISSUE DATE: 04/01/16 PAGE: 3 OF 9
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 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: ALED3T260Y/480/D10 -
 ALED3T260SFY/480/D10 -
 WPLED3T260Y/480/D10 -
 WPLED3T260YFX/480/D10 (TYPE III)
 LUMINAIRE: CAST FINNED METAL HOUSING, 4
 CHIP ON BOARD LIGHT EMITTING DIODES,
 MOLDED PLASTIC REFLECTOR WITH
 SPECULAR FINISH, CLEAR GLASS LENS IN
 CAST BRONZE PAINTED METAL FRAME.
 LAMPS: FOUR WHITE LIGHT EMITTING DIODES
 (LEDS)
 NOTE: DATA SHOWN IS ABSOLUTE FOR THE
 SAMPLE PROVIDED.
 TOTAL INPUT WATTS = 251.35 W AT 347.0
 VAC.
 LED DRIVER: RDD-P240-A2200
 (SEE PAGE 2 FOR MORE INFORMATION)



REPORT NUMBER: RAB01670

ISSUE DATE: 04/01/16

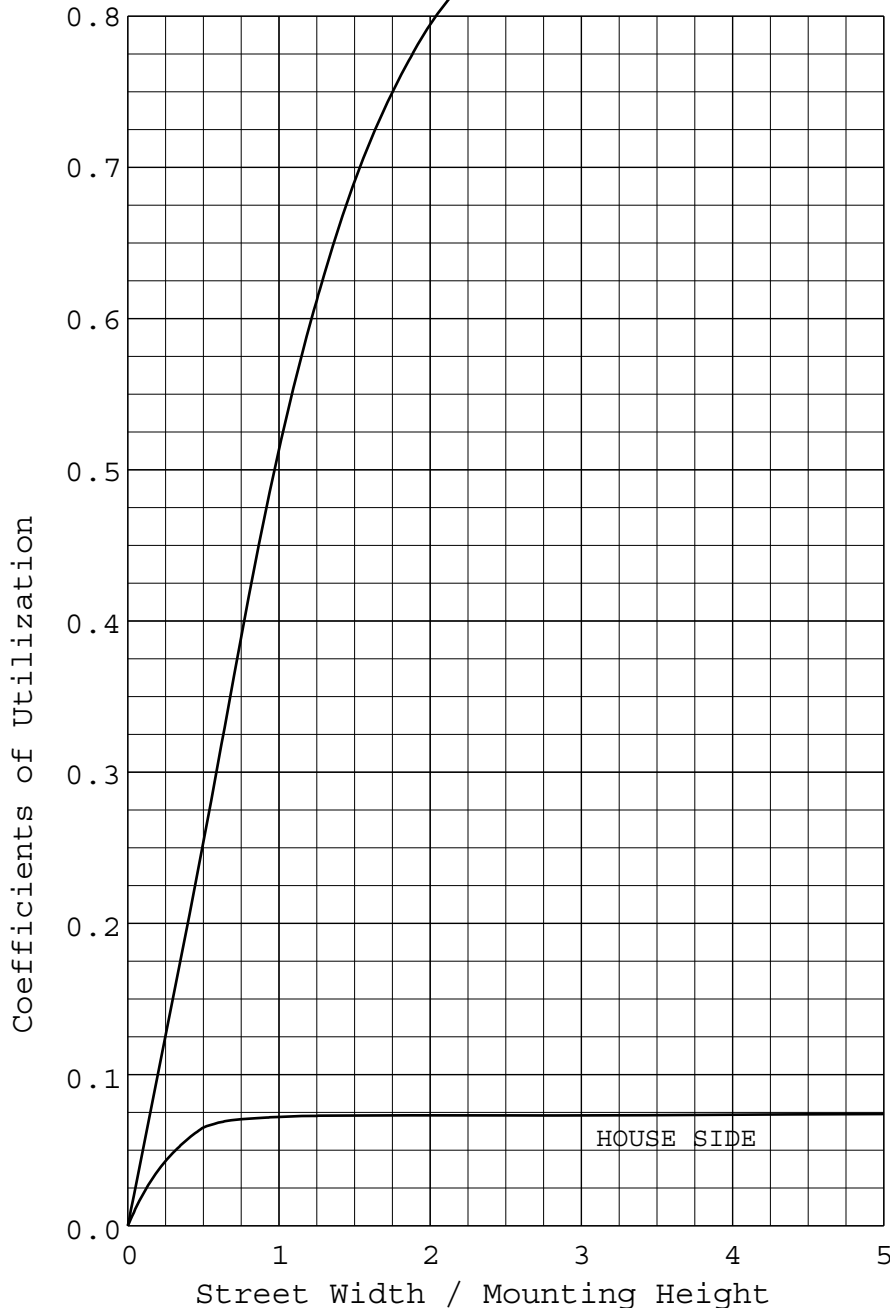
PREPARED FOR: RAB LIGHTING INC.

STREET SIDE

PAGE: 4 OF 9

DATE SAMPLE TESTED: 04/01/16

COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	24185.	92.5
DOWNWARD HOUSE SIDE	1948.	7.5
DOWNWARD TOTAL	26133.	100.0
UPWARD STREET SIDE	0.	0.0
UPWARD HOUSE SIDE	0.	0.0
UPWARD TOTAL	0.	0.0
TOTAL FLUX	26133.	100.0

TOTAL INPUT WATTS = 251.4
EFFICACY = 103.9 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.

REPORT NUMBER: RAB01670
 ISSUE DATE: 04/01/16
 PREPARED FOR: RAB LIGHTING INC.

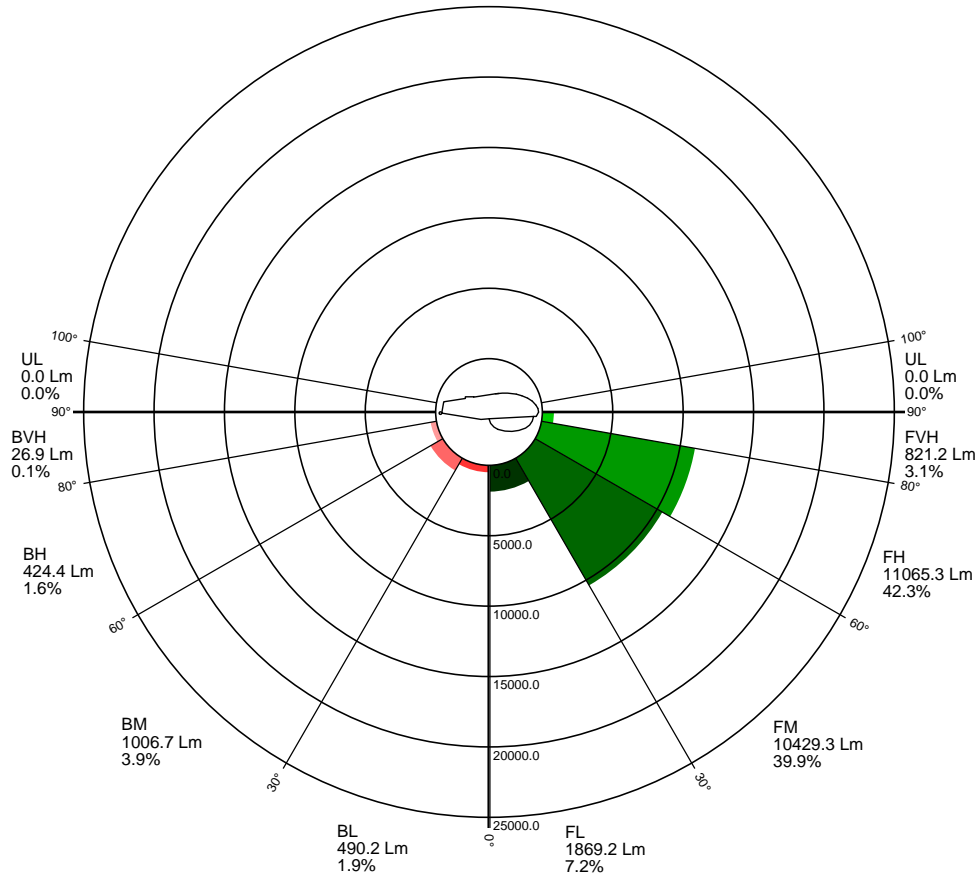
PAGE: 5 OF 9
 DATE SAMPLE TESTED: 04/01/16

BUG Rating:				B2 U0 G5		
Zonal Summary		Lumens	% of Fixture	Zone Ratings		
				B	U	G
Forward		24185	92.5			
FL	(0° - 30°)	1869.2	7.2			
FM	(30° - 60°)	10429.3	39.9			
FH	(60° - 80°)	11065.3	42.3			G4
FVH	(80° - 90°)	821.2	3.1			G5
Backward		1948	7.5			
BL	(0° - 30°)	490.2	1.9	B1		
BM	(30° - 60°)	1006.7	3.9	B2		
BH	(60° - 80°)	424.4	1.6	B1		G1
BVH	(80° - 90°)	26.9	0.1			G1
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		26133	100.0			

Zonal Lumen Summary

(Linear scale)

UH
0.0 Lm
0.0%



REPORT NUMBER: RAB01670

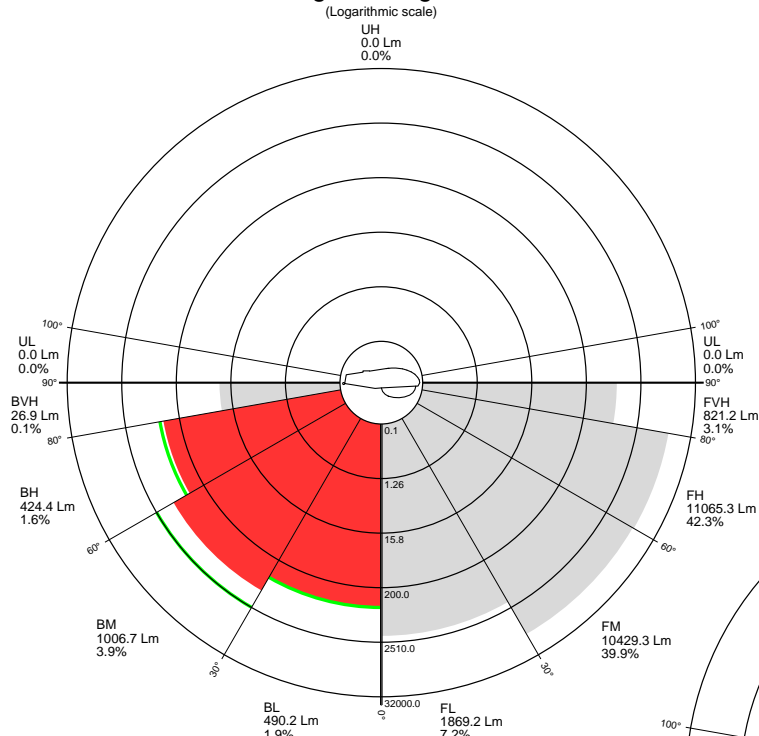
ISSUE DATE: 04/01/16

PREPARED FOR: RAB LIGHTING INC.

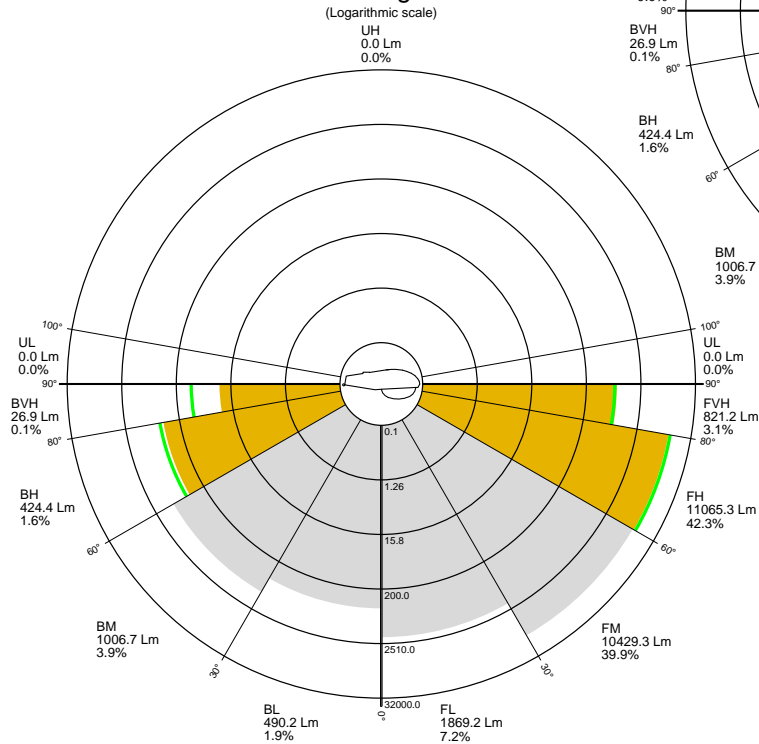
PAGE: 6 OF 9

DATE SAMPLE TESTED: 04/01/16

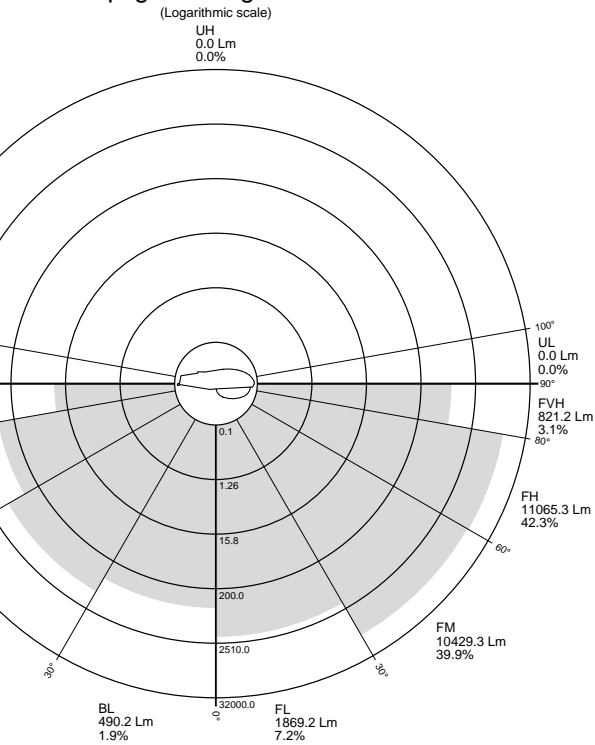
Backlight Rating Details



Glare Rating Details



Uplight Rating Details



REPORT NUMBER: RAB01670
 ISSUE DATE: 04/01/16
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PAGE: 7 OF 9
 DATE SAMPLE TESTED: 04/01/16

CANDELA TABULATION

	STREET SIDE	LATERAL ANGLE										
		0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	70.0	75.0	85.0
	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	175.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	165.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	155.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	145.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	135.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	125.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	115.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	105.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	95.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	90.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	87.5	22.	23.	30.	40.	54.	100.	102.	266.	398.	336.	195.
	85.0	32.	35.	54.	114.	263.	775.	1496.	1970.	2145.	2010.	508.
	82.5	53.	64.	206.	742.	1402.	2625.	4505.	5572.	6129.	6204.	1898.
V	80.0	457.	499.	1042.	2366.	3589.	5363.	7470.	9887.	10638.	11143.	4884.
E	77.5	1637.	1374.	2229.	4080.	5552.	7628.	10381.	12805.	14143.	14411.	9030.
R	75.0	2546.	2020.	3160.	5071.	7268.	9716.	13268.	15010.	16476.	16951.	12901.
T	72.5	3134.	2671.	4073.	6237.	8935.	11926.	15229.	18191.	18536.	18743.	14425.
I	70.0	3730.	3411.	5023.	7393.	10501.	13573.	16370.	20553.	20650.	19780.	14292.
C	69.0<<	3927.	3682.	5458.	8051.	11148.	14139.	16664.	20799.	21146.	19961.	14492.
A	67.5	4396.	4059.	6201.	8947.	11640.	14448.	16831.	19884.	20245.	19959.	14962.
L	65.0	5725.	4830.	7315.	10066.	12352.	14599.	16841.	18418.	18333.	17836.	14851.
	62.5	7211.	5678.	8185.	10515.	12456.	14442.	16172.	17105.	16942.	16496.	13645.
A	60.0	8180.	6673.	8563.	10352.	12236.	14229.	15374.	15880.	15562.	14995.	11393.
N	57.5	8238.	7324.	8194.	9969.	11988.	13575.	14537.	14218.	14178.	13562.	10005.
G	55.0	8093.	7324.	7897.	9599.	11644.	12769.	13468.	13057.	13027.	12998.	9574.
L	52.5	7805.	7070.	7959.	9313.	11150.	12044.	12501.	12552.	12360.	12243.	9224.
E	50.0	7528.	6783.	7924.	9319.	10455.	11460.	12017.	12159.	11919.	11244.	8621.
	47.5	7204.	6483.	7604.	9181.	10136.	11039.	11510.	11438.	11111.	10677.	7966.
	45.0	6847.	6141.	7052.	8762.	9858.	10610.	10865.	10453.	10009.	9432.	7221.
	42.5	6484.	5825.	6668.	8246.	9464.	9916.	10018.	9285.	8824.	8297.	6384.
	40.0	5993.	5548.	6292.	7793.	8891.	9064.	8971.	8339.	7952.	7435.	5816.
	37.5	5526.	5275.	5961.	7572.	8266.	8352.	8158.	7559.	7245.	6787.	5432.
	35.0	5341.	5131.	5735.	7200.	7579.	7661.	7371.	6951.	6690.	6252.	4980.
	30.0	5449.	4941.	5303.	5640.	6344.	6279.	6321.	6135.	5816.	5412.	4277.
	25.0	5126.	4842.	4925.	4997.	5299.	5564.	5496.	5246.	5028.	4705.	3821.
	20.0	4799.	4682.	4661.	4729.	4733.	4864.	5115.	4597.	4288.	4002.	3360.
	15.0	4449.	4425.	4325.	4253.	4290.	4108.	3973.	3702.	3555.	3387.	2967.
	10.0	3890.	3834.	3710.	3567.	3444.	3228.	3106.	2882.	2760.	2635.	2352.
	5.0	3044.	3028.	2956.	2869.	2781.	2646.	2506.	2348.	2287.	2203.	2050.
	0.0	2302.	2302.	2302.	2302.	2302.	2302.	2302.	2302.	2302.	2302.	2302.
										PLANE OF MAXIMUM CANDELA		
										CONE OF MAXIMUM CANDELA		

REPORT NUMBER: RAB01670
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 PREPARED FOR: RAB LIGHTING INC.

PAGE: 8 OF 9
 DATE SAMPLE TESTED: 04/01/16

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.	0.
175.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
155.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
145.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
87.5	117.	36.	35.	34.	32.	30.	30.	30.	29.	29.	28.
85.0	261.	52.	38.	33.	28.	26.	26.	27.	27.	27.	26.
82.5	1101.	106.	54.	35.	24.	22.	23.	25.	25.	25.	25.
V 80.0	2652.	229.	92.	42.	23.	20.	21.	23.	24.	24.	24.
E 77.5	4135.	460.	145.	58.	23.	19.	18.	22.	23.	24.	24.
R 75.0	5924.	775.	220.	97.	33.	19.	17.	20.	22.	23.	24.
T 72.5	7009.	1051.	320.	132.	54.	19.	16.	19.	21.	22.	23.
I 70.0	7410.	1317.	396.	143.	83.	24.	15.	19.	21.	22.	23.
C 69.0<<	7697.	1549.	406.	161.	98.	27.	16.	19.	22.	23.	23.
A 67.5	8351.	2025.	445.	186.	106.	31.	18.	20.	22.	23.	23.
L 65.0	8849.	3096.	492.	290.	112.	40.	22.	23.	24.	24.	25.
62.5	8081.	3116.	601.	557.	130.	54.	26.	26.	27.	27.	27.
A 60.0	7111.	2983.	824.	747.	176.	64.	30.	32.	30.	29.	30.
N 57.5	6888.	3229.	993.	776.	226.	61.	43.	39.	34.	35.	35.
G 55.0	6561.	3572.	1170.	692.	265.	62.	47.	56.	37.	40.	39.
L 52.5	6752.	4283.	1231.	677.	382.	92.	48.	55.	40.	47.	40.
E 50.0	6611.	4826.	1486.	697.	430.	140.	55.	47.	41.	43.	40.
47.5	6444.	4949.	1913.	726.	402.	175.	78.	50.	43.	40.	40.
45.0	5990.	4752.	2033.	866.	430.	173.	105.	72.	50.	43.	43.
42.5	5513.	4156.	1883.	874.	491.	199.	121.	103.	69.	54.	50.
40.0	4975.	3889.	1812.	915.	639.	285.	134.	117.	93.	79.	64.
37.5	4569.	3562.	1841.	916.	763.	392.	144.	120.	100.	92.	69.
35.0	4149.	3325.	1919.	898.	707.	596.	252.	131.	108.	94.	74.
30.0	3646.	2995.	1913.	1124.	765.	896.	906.	474.	182.	93.	85.
25.0	3284.	2762.	1903.	1282.	996.	885.	694.	526.	510.	401.	398.
20.0	2994.	2612.	1953.	1485.	1051.	673.	456.	464.	487.	341.	277.
15.0	2712.	2456.	1981.	1566.	1140.	740.	582.	543.	552.	497.	542.
10.0	2181.	2017.	1687.	1385.	1128.	1014.	938.	1004.	1096.	1086.	1082.
5.0	1974.	1911.	1792.	1700.	1628.	1592.	1567.	1532.	1572.	1598.	1627.
0.0	2302.	2302.	2302.	2302.	2302.	2302.	2302.	2302.	2302.	2302.	2302.

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB01670
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 PREPARED FOR: RAB LIGHTING INC.

PAGE: 9 OF 9
 DATE SAMPLE TESTED: 04/01/16

5-DEGREE ZONAL LUMEN SUMMARY

0- 5	53
5- 10	154
10- 15	283
15- 20	442
20- 25	613
25- 30	815
30- 35	1037
35- 40	1327
40- 45	1700
45- 50	2113
50- 55	2444
55- 60	2814
60- 65	3212
65- 70	3345
70- 75	2927
75- 80	2005
80- 85	768
85- 90	80
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	206
0- 20	930
0- 30	2359
0- 40	4724
0- 50	8537
0- 60	13795
0- 70	20353
0- 80	25285
0- 90	26133
0-100	26133
0-110	26133
0-120	26133
0-130	26133
0-140	26133
0-150	26133
0-160	26133
0-170	26133
0-180	26133

REPORT NUMBER: RAB01673
 DATE: 4/1/2016
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: ALED3T260Y/480/D10 - ALED3T260SFY/480/D10 - WPLED3T260Y/480/D10 - WPLED3T260YFX/480/D10 (TYPE III)
 ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: CAST FINNED METAL HOUSING, 4 CHIP ON BOARD LIGHT EMITTING DIODES, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH, CLEAR GLASS LENS IN CAST BRONZE PAINTED METAL FRAME.

LAMP: FOUR WHITE LIGHT EMITTING DIODES (LEDs)

DRIVER: RDD-P240-A2200

OBJECT OF TEST: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT THE RATED INPUT VOLTAGES (347.0 AND 480.0 VAC, 60Hz) TO THE TEST SAMPLE.

INSTRUMENTS: GWINSTEK PROGRAMMABLE AC POWER SOURCE APS-7100
 CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202
 OCEAN OPTICS QE65PRO Spectroradiometer
 RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry

Calibration Due: N/A
 2/26/17
 3/21/17
 3/21/17

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 (480.0 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: RAB01673
 DATE: 4/1/2016
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: ALED3T260Y/480/D10 - ALED3T260SFY/480/D10 - WPLED3T260Y/480/D10 - WPLED3T260YFX/480/D10 (TYPE III)

Page 2 of 4

RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	26133 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4243
Chromaticity Ordinate y	0.4042
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2424
Chromaticity Ordinate v'	0.5196
Correlated Color Temp CCT (K)	3225
ANSI C78.377-2008 Duv	0.002
Total Radiant Flux (milliWatts)	72874 *
ELECTRICAL	
Input Voltage (Volts AC)	347.0
Input Current (Amps AC)	0.732
Input Power (Watts)	251.3
Input Power Factor (%)	99.0
Input Current THD (%)	8.7
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	104.0
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	480.0
Input Current (Amps AC)	0.540
Input Power (Watts)	249.9
Input Power Factor (%)	96.3
Input Current THD (%)	9.6
Input Voltage THD (%)	0.2
Off-State Power (Watts)	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	70
R1 Light greyish red	66
R2 Dark greyish yellow	79
R3 Strong yellowish green	90
R4 Moderate yellowish green	67
R5 Light bluish green	65
R6 Light blue	70
R7 Light violet	79
R8 Light reddish purple	44
R9 Strong red	-38
R10 Strong yellow	50
R11 Strong green	60
R12 Strong blue	41
R13 Light yellowish pink (skin)	68
R14 Moderate olive green (leaf)	94

*NOTE:

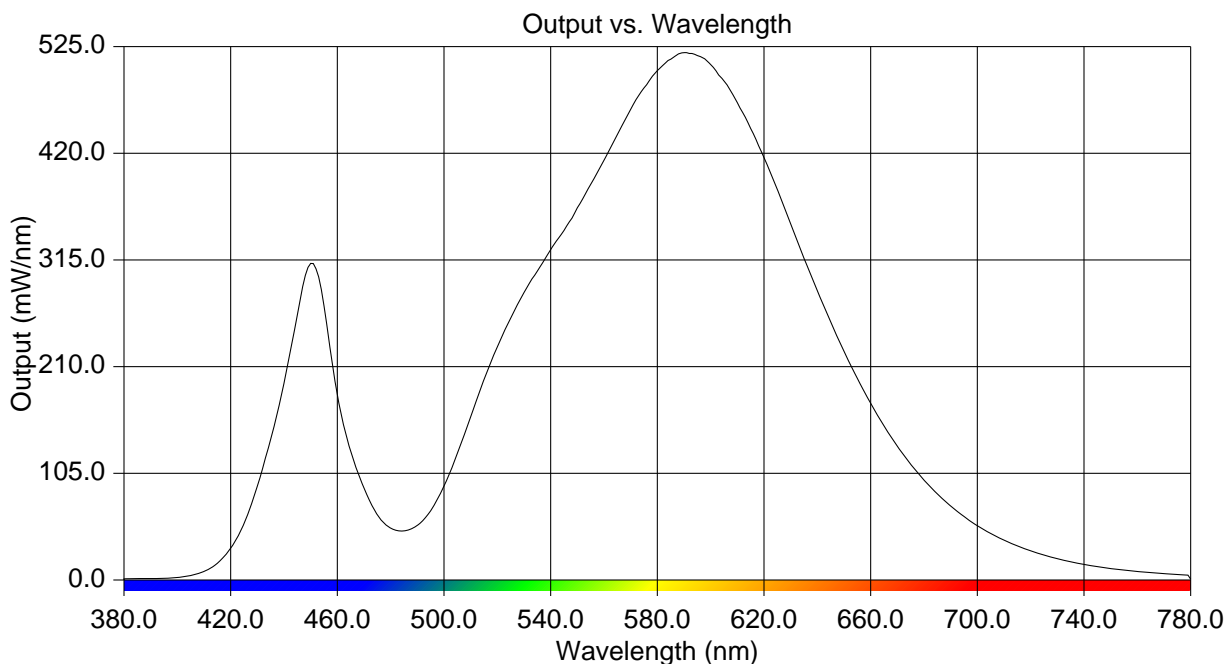
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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: RAB01673
 DATE: 4/1/2016
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: ALED3T260Y/480/D10 - ALED3T260SFY/480/D10 - WPLED3T260Y/480/D10 - WPLED3T260YFX/480/D10 (TYPE III)

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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	1.120	515	196.749	650	224.879
385	1.202	520	230.173	655	198.512
390	1.415	525	257.920	660	173.705
395	1.756	530	282.934	665	151.636
400	2.497	535	304.048	670	131.745
405	4.277	540	325.259	675	114.044
410	8.419	545	344.060	680	98.401
415	16.419	550	366.402	685	84.724
420	31.100	555	389.613	690	72.747
425	55.684	560	412.819	695	62.571
430	92.363	565	438.226	700	53.441
435	138.239	570	462.755	705	45.760
440	194.224	575	484.391	710	39.245
445	261.775	580	501.305	715	33.590
450	311.617	585	512.899	720	28.742
455	269.887	590	519.175	725	24.484
460	182.353	595	516.254	730	20.884
465	126.732	600	507.396	735	17.871
470	90.926	605	491.424	740	15.301
475	64.513	610	469.894	745	13.144
480	50.928	615	444.458	750	11.337
485	48.356	620	415.514	755	9.698
490	53.815	625	384.938	760	8.426
495	68.104	630	350.444	765	7.201
500	92.507	635	316.670	770	6.215
505	124.314	640	284.705	775	5.381
510	160.413	645	253.952	780	0.807



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CIE Chromaticity Diagram

