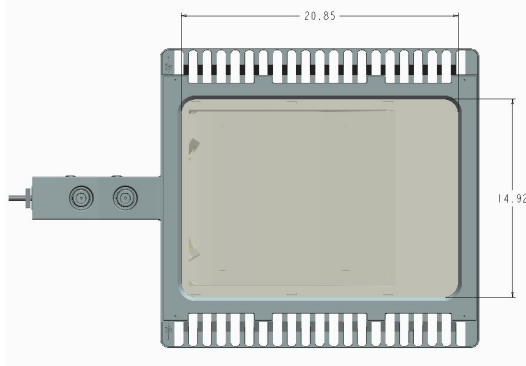


ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 25 foot mounting height.



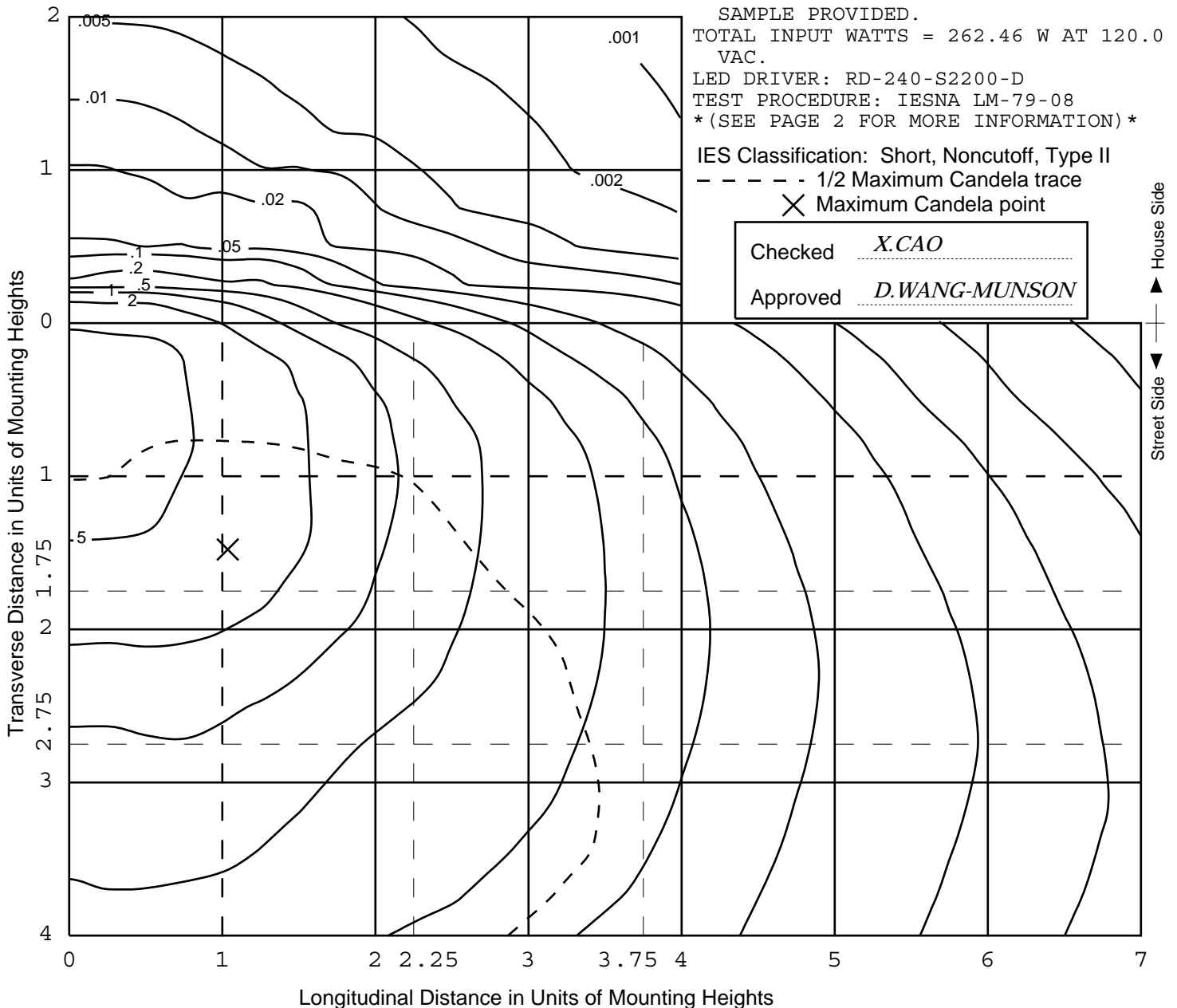
REPORT NUMBER: RAB01809
 ISSUE DATE: 03/29/16 PAGE: 1 OF 9
 DATE SAMPLE TESTED: 03/29/16
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: ALED4T260/D10 -
 ALED4T260SF/D10 - WPLED4T260/D10 -
 WPLED4T260FX/D10 (TYPE IV)
 LUMINAIRE: CAST FINNED METAL HOUSING, 4
 CHIP ON BOARD LIGHT EMITTING DIODES,
 MOLDED 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 = 262.46 W AT 120.0
 VAC.

LED DRIVER: RD-240-S2200-D
 TEST PROCEDURE: IESNA LM-79-08
 (SEE PAGE 2 FOR MORE INFORMATION)

IES Classification: Short, Noncutoff, Type II

--- 1/2 Maximum Candela trace
 X Maximum Candela point



REPORT NUMBER: RAB01809
ISSUE DATE: 03/29/16
PREPARED FOR: RAB LIGHTING INC.

PAGE: 2 OF 9
DATE SAMPLE TESTED: 03/29/16

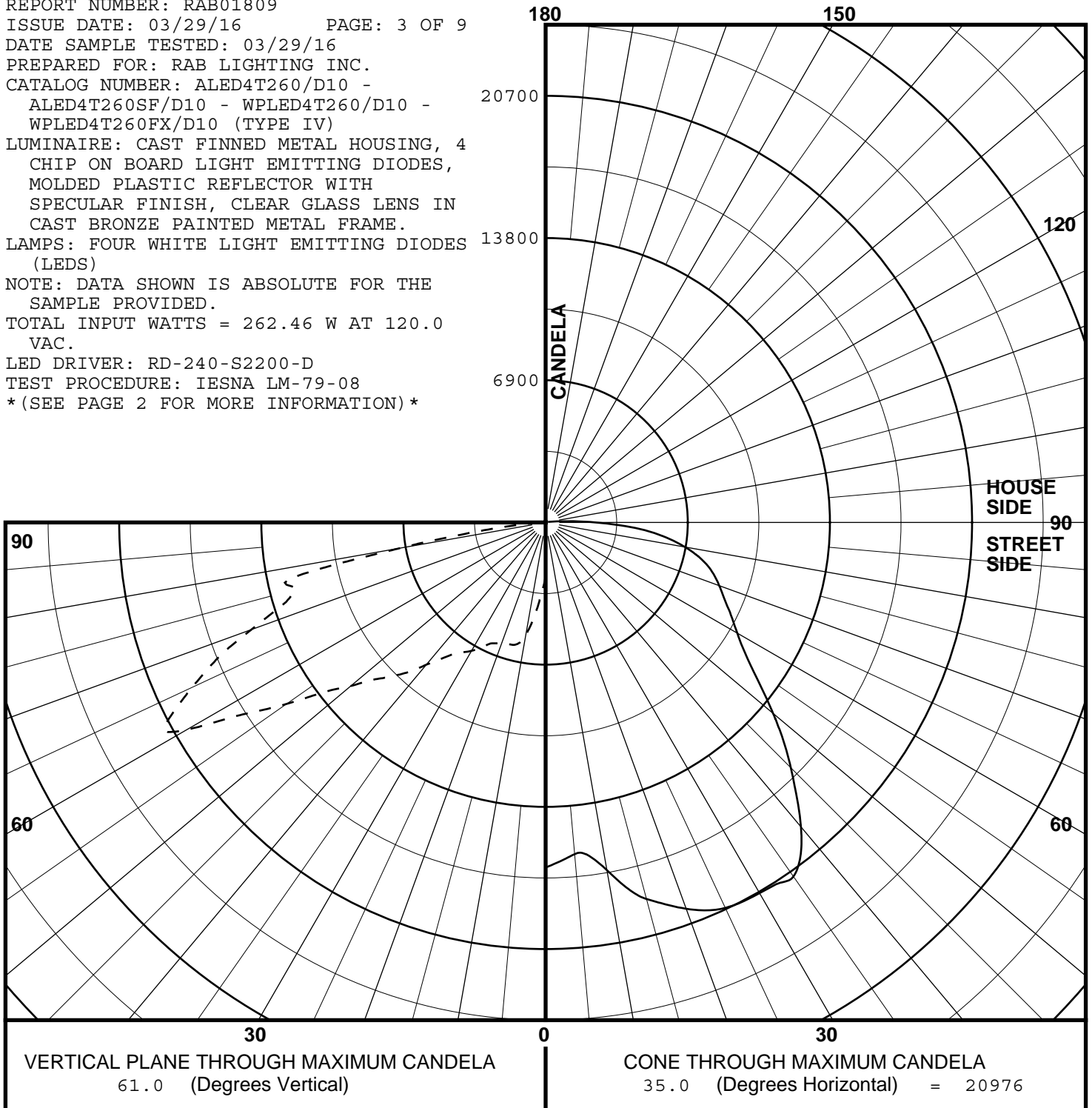
ADDITIONAL INFORMATION

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

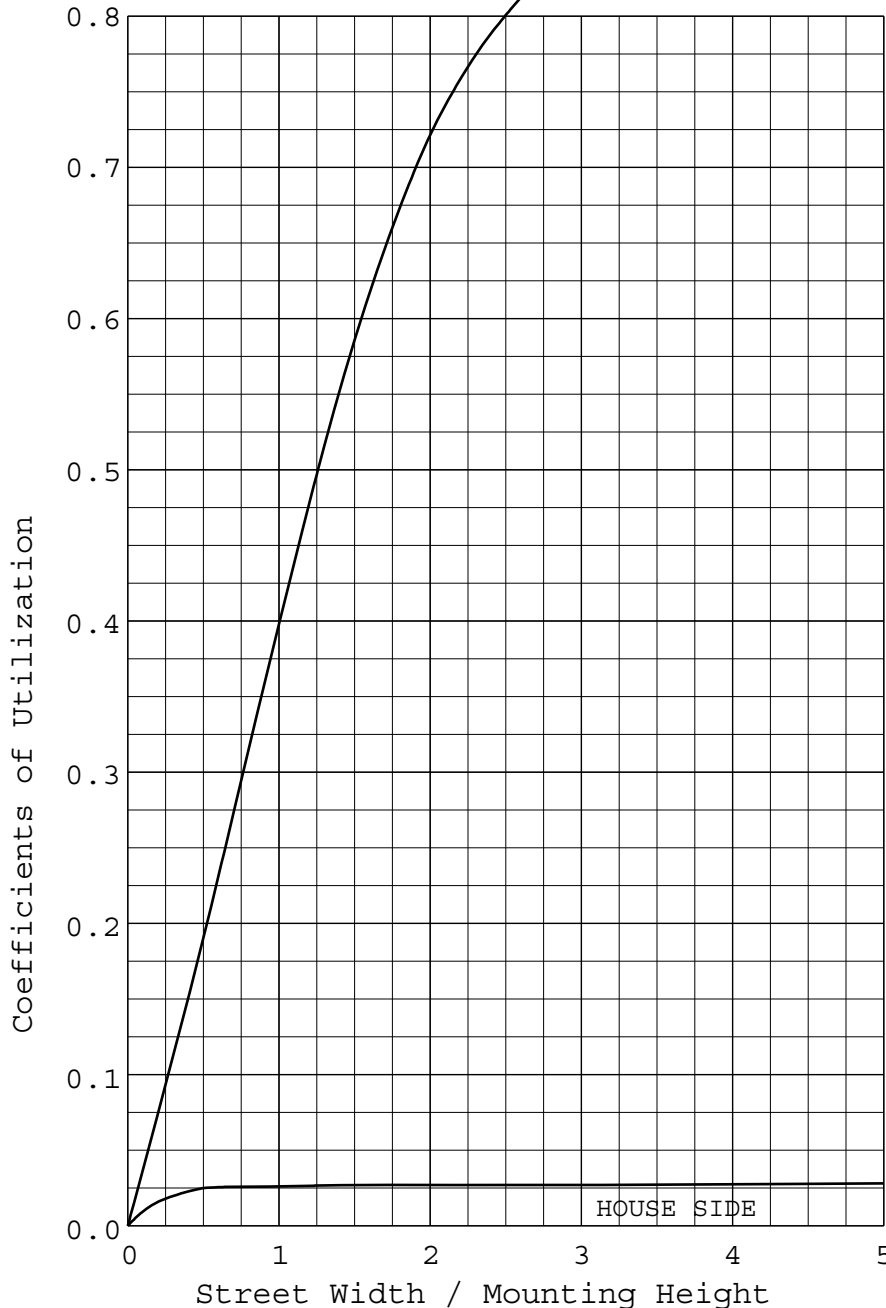
REPORT NUMBER: RAB01809
 ISSUE DATE: 03/29/16 PAGE: 3 OF 9
 DATE SAMPLE TESTED: 03/29/16
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: ALED4T260/D10 -
 ALED4T260SF/D10 - WPLED4T260/D10 -
 WPLED4T260FX/D10 (TYPE IV)
 LUMINAIRE: CAST FINNED METAL HOUSING, 4
 CHIP ON BOARD LIGHT EMITTING DIODES,
 MOLDED 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 = 262.46 W AT 120.0
 VAC.
 LED DRIVER: RD-240-S2200-D
 TEST PROCEDURE: IESNA LM-79-08
 (SEE PAGE 2 FOR MORE INFORMATION)



REPORT NUMBER: RAB01809
ISSUE DATE: 03/29/16
PREPARED FOR: RAB LIGHTING INC.

PAGE: 4 OF 9
DATE SAMPLE TESTED: 03/29/16

COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	26646.	97.1
DOWNWARD HOUSE SIDE	782.	2.9
DOWNWARD TOTAL	27428.	100.0
UPWARD STREET SIDE	0.	0.0
UPWARD HOUSE SIDE	0.	0.0
UPWARD TOTAL	0.	0.0
TOTAL FLUX	27428.	100.0
TOTAL INPUT WATTS = 262.5		
EFFICACY = 104.5 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: RAB01809
 ISSUE DATE: 03/29/16
 PREPARED FOR: RAB LIGHTING INC.

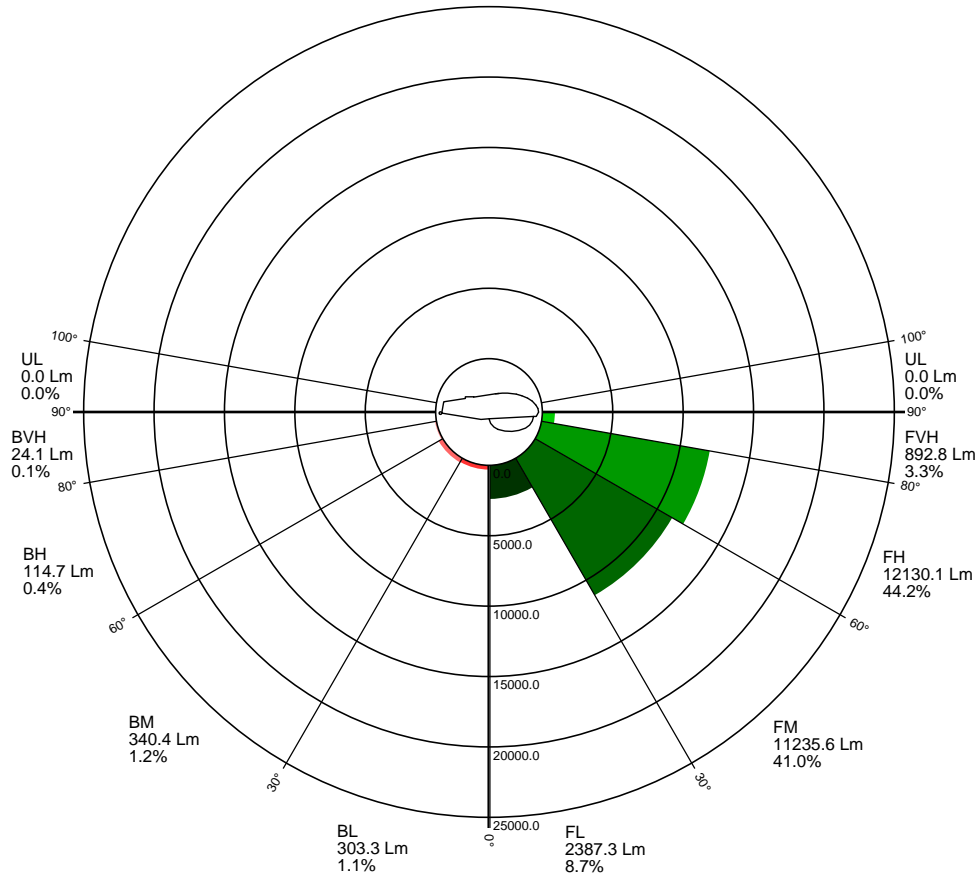
PAGE: 5 OF 9
 DATE SAMPLE TESTED: 03/29/16

BUG Rating:				B1 U0 G5		
Zonal Summary		Lumens	% of Fixture	Zone Ratings		
				B	U	G
Forward		26646	97.1			
FL	(0° - 30°)	2387.3	8.7			
FM	(30° - 60°)	11235.6	41.0			
FH	(60° - 80°)	12130.1	44.2			G5
FVH	(80° - 90°)	892.8	3.3			G5
Backward		782	2.9			
BL	(0° - 30°)	303.3	1.1	B1		
BM	(30° - 60°)	340.4	1.2	B1		
BH	(60° - 80°)	114.7	0.4	B1		G1
BVH	(80° - 90°)	24.1	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		27428	100.0			

Zonal Lumen Summary

(Linear scale)

UH
0.0 Lm
0.0%



REPORT NUMBER: RAB01809

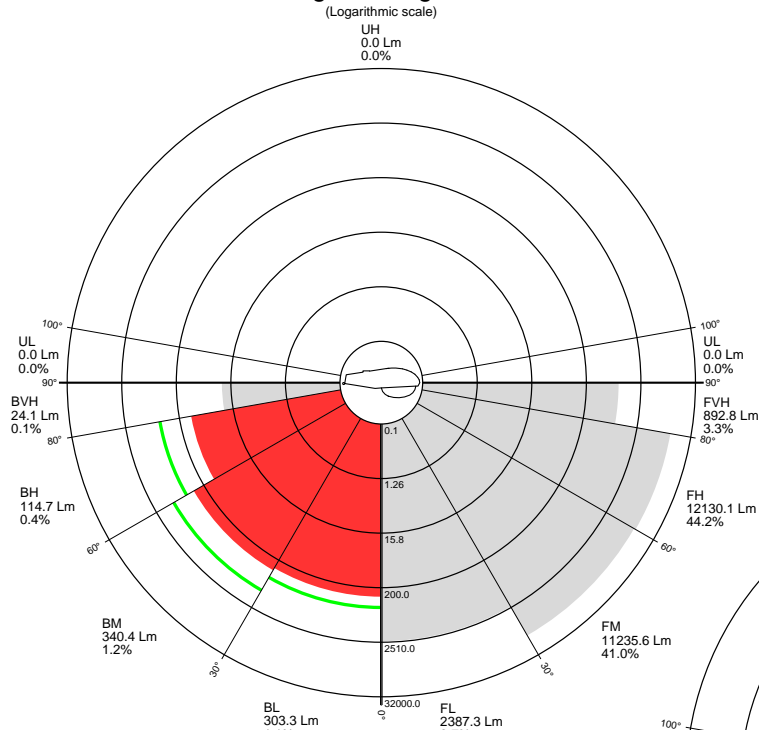
ISSUE DATE: 03/29/16

PREPARED FOR: RAB LIGHTING INC.

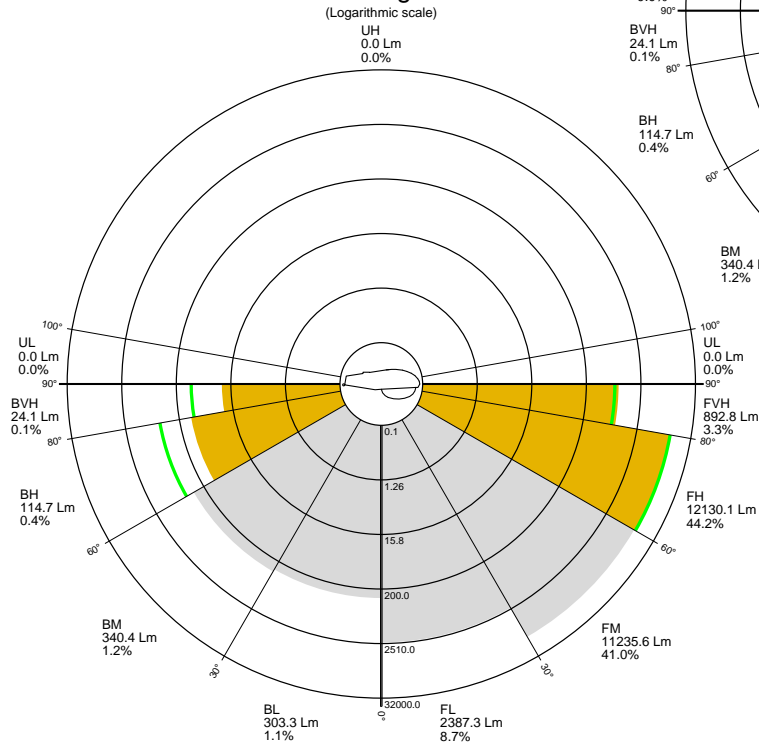
PAGE: 6 OF 9

DATE SAMPLE TESTED: 03/29/16

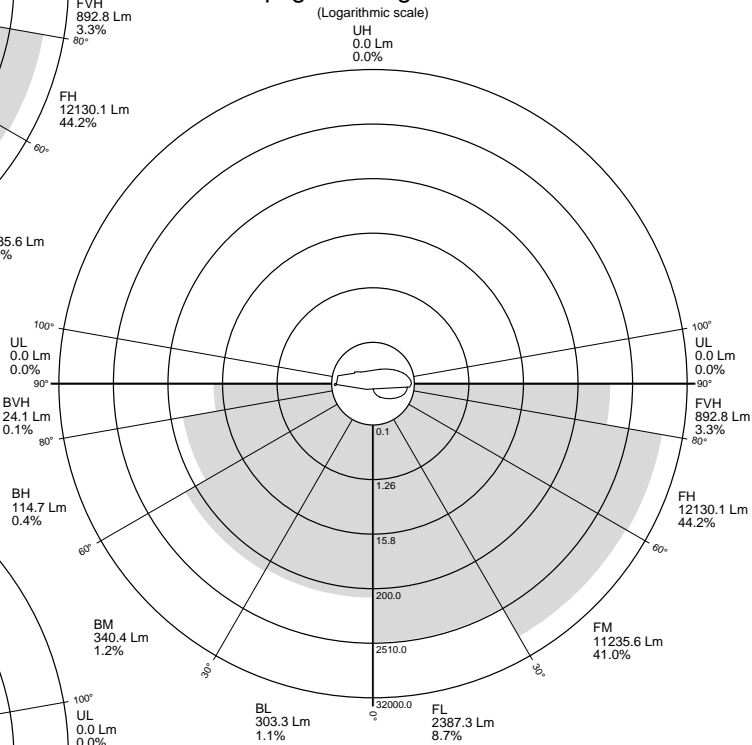
Backlight Rating Details



Glare Rating Details



Uplight Rating Details



PAGE: 7 OF 9
DATE SAMPLE TESTED: 03/29/16

CANDLER REGULATION		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.	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	73.	84.	61.	103.	164.	202.	195.	135.	86.	79.
	85.0	1090.	1237.	1048.	1313.	1354.	1314.	993.	863.	553.	139.
	82.5	3651.	3878.	3497.	3201.	3279.	3673.	3021.	2612.	1361.	346.
V	80.0	5713.	6295.	7069.	6115.	7176.	7886.	6234.	4778.	2571.	1050.
E	77.5	12214.	12691.	13057.	12219.	12783.	11803.	9239.	6787.	3960.	1789.
R	75.0	16818.	18307.	18445.	15377.	12593.	12827.	11173.	8220.	5539.	2565.
T	72.5	16004.	15478.	17579.	15653.	13437.	13595.	11469.	9252.	6930.	2866.
I	70.0	13920.	13921.	16391.	15784.	15204.	14649.	12048.	10061.	7843.	3672.
C	67.5	13775.	13756.	15900.	17697.	17249.	14994.	12487.	10741.	7770.	4256.
A	65.0	15262.	14943.	17297.	19152.	18929.	16762.	12371.	10415.	8266.	4589.
L	62.5	16456.	15904.	18525.	20456.	20619.	17526.	12300.	9899.	8391.	4913.
	61.0	<16746.	16152.	18916.	20638.	20976.	16829.	12179.	9765.	8151.	5071.
A	60.0	17218.	16520.	18841.	20741.	20104.	16150.	12163.	9671.	7897.	5150.
N	57.5	18303.	17939.	19394.	19552.	17282.	14372.	11436.	9452.	7884.	5299.
G	55.0	17280.	16920.	17703.	16456.	15356.	13052.	10775.	8957.	7677.	5342.
L	52.5	14653.	14142.	15044.	14235.	13497.	11864.	10209.	8535.	7170.	5294.
E	50.0	12252.	12036.	12483.	12768.	12342.	11018.	9802.	8259.	6883.	5272.
	47.5	10620.	10553.	10868.	11988.	11275.	10572.	9254.	7874.	6717.	5277.
	45.0	10199.	9945.	10169.	10771.	10564.	9830.	8745.	7566.	6665.	5283.
	42.5	9838.	9479.	9510.	9894.	9846.	8926.	8102.	7268.	6534.	5072.
	40.0	9446.	9239.	9125.	9424.	9010.	8402.	7607.	6992.	6320.	4748.
	37.5	9236.	9122.	8884.	8823.	8345.	7929.	7318.	6798.	6211.	4753.
	35.0	8751.	8607.	8434.	8199.	7799.	7559.	7272.	6669.	5980.	4479.
	30.0	7570.	7554.	7505.	7124.	7198.	7161.	7010.	6649.	5821.	4306.
	25.0	7067.	7040.	6978.	6710.	6511.	6579.	6469.	6318.	5478.	4128.
	20.0	6690.	6714.	6700.	6525.	6252.	5931.	5805.	5473.	4508.	3442.
	15.0	6266.	6314.	6307.	6301.	6150.	5849.	5338.	4708.	3883.	3041.
	10.0	5757.	5795.	5732.	5698.	5533.	5109.	4664.	4102.	3472.	2927.
	5.0	4271.	4223.	4184.	4107.	3973.	3780.	3590.	3381.	3150.	2882.
	0.0	2626.	2626.	2626.	2626.	2626.	2626.	2626.	2626.	2626.	2626.

PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB01809
 ISSUE DATE: 03/29/16
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 8 OF 9
 DATE SAMPLE TESTED: 03/29/16

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	67.	45.	47.	48.	49.	49.	49.	49.	49.	48.	48.
85.0	93.	49.	47.	48.	48.	47.	46.	47.	46.	46.	45.
82.5	150.	58.	48.	47.	46.	45.	44.	44.	43.	43.	43.
V 80.0	612.	74.	50.	46.	44.	43.	42.	41.	40.	39.	39.
E 77.5	1029.	108.	52.	46.	42.	41.	39.	39.	38.	37.	37.
R 75.0	1361.	148.	55.	47.	41.	39.	38.	37.	36.	35.	35.
T 72.5	1552.	190.	63.	51.	40.	38.	37.	36.	35.	34.	33.
I 70.0	1845.	256.	72.	56.	40.	37.	36.	36.	35.	33.	33.
C 67.5	2091.	321.	79.	60.	40.	37.	36.	35.	35.	33.	33.
A 65.0	2176.	400.	85.	84.	41.	37.	36.	35.	35.	33.	33.
L 62.5	2357.	512.	96.	92.	43.	38.	36.	36.	35.	33.	33.
61.0<<	2448.	616.	106.	139.	44.	38.	36.	36.	35.	34.	33.
A 60.0	2541.	690.	112.	117.	45.	38.	36.	36.	35.	34.	34.
N 57.5	2745.	890.	135.	104.	46.	39.	37.	37.	36.	34.	34.
G 55.0	2920.	1060.	155.	112.	52.	40.	37.	37.	36.	35.	34.
L 52.5	3106.	1219.	188.	79.	85.	40.	37.	37.	37.	35.	35.
E 50.0	3305.	1381.	226.	83.	54.	41.	38.	38.	37.	36.	35.
47.5	3398.	1497.	268.	85.	55.	42.	38.	38.	38.	36.	36.
45.0	3489.	1606.	283.	99.	66.	44.	39.	39.	38.	38.	37.
42.5	3434.	1746.	331.	107.	74.	47.	41.	40.	40.	39.	38.
40.0	3353.	1862.	396.	114.	79.	48.	43.	41.	41.	40.	40.
37.5	3380.	2020.	443.	130.	85.	52.	45.	42.	42.	41.	40.
35.0	3294.	2220.	483.	177.	81.	58.	46.	44.	43.	42.	42.
30.0	3439.	2840.	714.	286.	100.	71.	53.	49.	47.	45.	44.
25.0	3313.	2911.	974.	373.	198.	89.	73.	58.	54.	50.	49.
20.0	2808.	2373.	1292.	679.	265.	190.	119.	74.	61.	54.	53.
15.0	2673.	2275.	1593.	956.	566.	343.	257.	205.	170.	132.	120.
10.0	2684.	2435.	2004.	1553.	1077.	798.	616.	486.	410.	380.	374.
5.0	2758.	2621.	2365.	2148.	1986.	1787.	1606.	1431.	1335.	1262.	1290.
0.0	2626.	2626.	2626.	2626.	2626.	2626.	2626.	2626.	2626.	2626.	2626.

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB01809
ISSUE DATE: 03/29/16
PREPARED FOR: RAB LIGHTING INC.

PAGE: 9 OF 9
DATE SAMPLE TESTED: 03/29/16

5-DEGREE ZONAL LUMEN SUMMARY

0- 5	65
5- 10	204
10- 15	354
15- 20	506
20- 25	681
25- 30	881
30- 35	1084
35- 40	1317
40- 45	1596
45- 50	1953
50- 55	2480
55- 60	3146
60- 65	3453
65- 70	3271
70- 75	3114
75- 80	2406
80- 85	823
85- 90	94
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	269
0- 20	1129
0- 30	2691
0- 40	5091
0- 50	8641
0- 60	14266
0- 70	20991
0- 80	26511
0- 90	27428
0-100	27428
0-110	27428
0-120	27428
0-130	27428
0-140	27428
0-150	27428
0-160	27428
0-170	27428
0-180	27428

REPORT NUMBER: RAB01813
DATE: 3/29/2016
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: ALED4T260/D10 - ALED4T260SF/D10 - WPLED4T260/D10 - WPLED4T260FX/D10 (TYPE IV)
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: RD-240-S2200-D

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: N/A
	CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202	2/26/17
	OCEAN OPTICS QE65PRO Spectroradiometer	3/21/17
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	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 (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: RAB01813
 DATE: 3/29/2016
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: ALED4T260/D10 - ALED4T260SF/D10 - WPLED4T260/D10 - WPLED4T260FX/D10 (TYPE IV)

Page 2 of 4

RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	27428 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3412
Chromaticity Ordinate y	0.3589
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2060
Chromaticity Ordinate v'	0.4876
Correlated Color Temp CCT (K)	5169
ANSI C78.377-2008 Duv	0.005
Total Radiant Flux (milliWatts)	80879 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	2.19
Input Power (Watts)	262.5
Input Power Factor (%)	99.8
Input Current THD (%)	4.0
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	104.5
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.958
Input Power (Watts)	256.6
Input Power Factor (%)	96.6
Input Current THD (%)	6.2
Input Voltage THD (%)	0.2
Off-State Power (Watts)	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	70
R1 Light greyish red	67
R2 Dark greyish yellow	74
R3 Strong yellowish green	80
R4 Moderate yellowish green	72
R5 Light bluish green	69
R6 Light blue	66
R7 Light violet	79
R8 Light reddish purple	55
R9 Strong red	-38
R10 Strong yellow	39
R11 Strong green	69
R12 Strong blue	43
R13 Light yellowish pink (skin)	68
R14 Moderate olive green (leaf)	89

*NOTE:

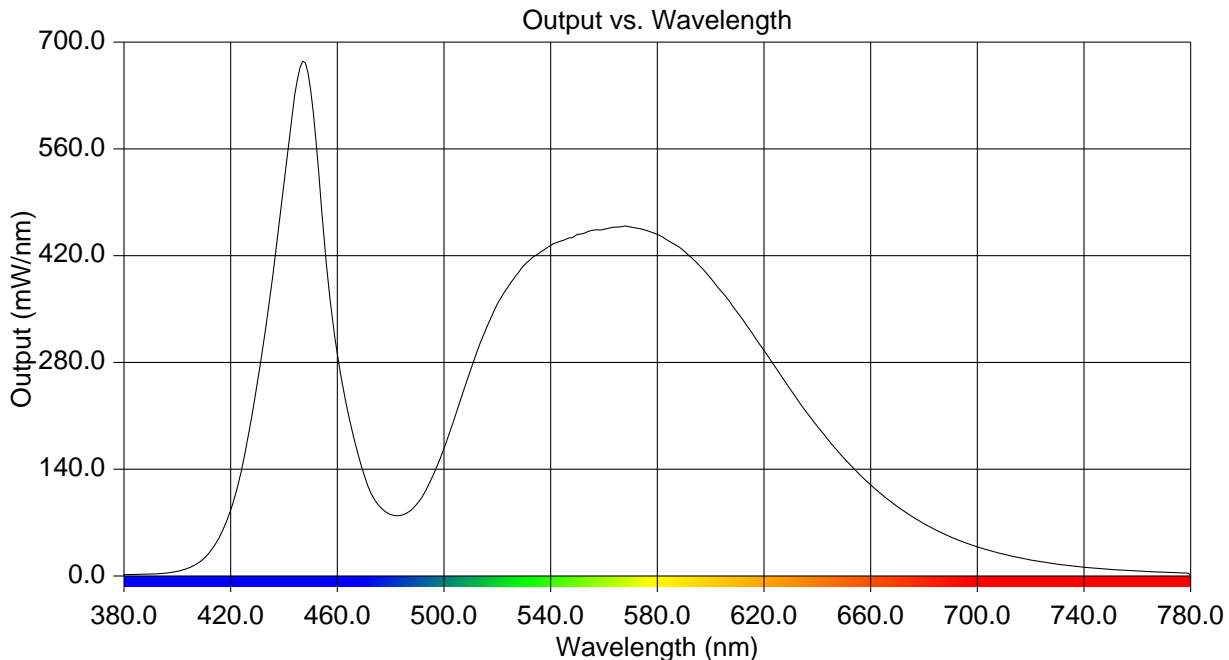
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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: RAB01813
 DATE: 3/29/2016
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: ALED4T260/D10 - ALED4T260SF/D10 - WPLED4T260/D10 - WPLED4T260FX/D10
 (TYPE IV)

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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	1.719	515	318.048	650	154.544
385	2.028	520	357.022	655	136.270
390	2.504	525	384.268	660	119.386
395	3.588	530	407.773	665	104.373
400	6.074	535	422.116	670	91.242
405	11.568	540	433.801	675	79.164
410	23.094	545	440.900	680	68.828
415	46.058	550	448.369	685	59.317
420	85.964	555	453.273	690	51.357
425	154.837	560	455.198	695	44.289
430	253.833	565	457.809	700	38.204
435	373.196	570	458.037	705	33.044
440	515.718	575	454.553	710	28.415
445	651.143	580	448.440	715	24.508
450	637.745	585	438.391	720	21.040
455	445.958	590	426.712	725	18.095
460	289.309	595	410.131	730	15.613
465	199.857	600	390.913	735	13.456
470	133.279	605	369.585	740	11.585
475	94.893	610	346.004	745	10.020
480	80.661	615	321.733	750	8.678
485	80.945	620	295.947	755	7.517
490	95.107	625	270.543	760	6.461
495	124.570	630	244.261	765	5.638
500	167.973	635	219.154	770	4.916
505	218.252	640	196.691	775	4.269
510	270.681	645	174.834	780	0.649



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CIE Chromaticity Diagram

