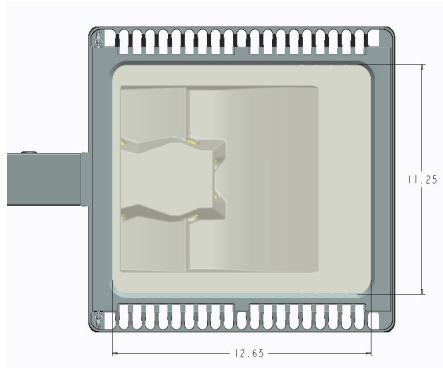


ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 25 foot mounting height.



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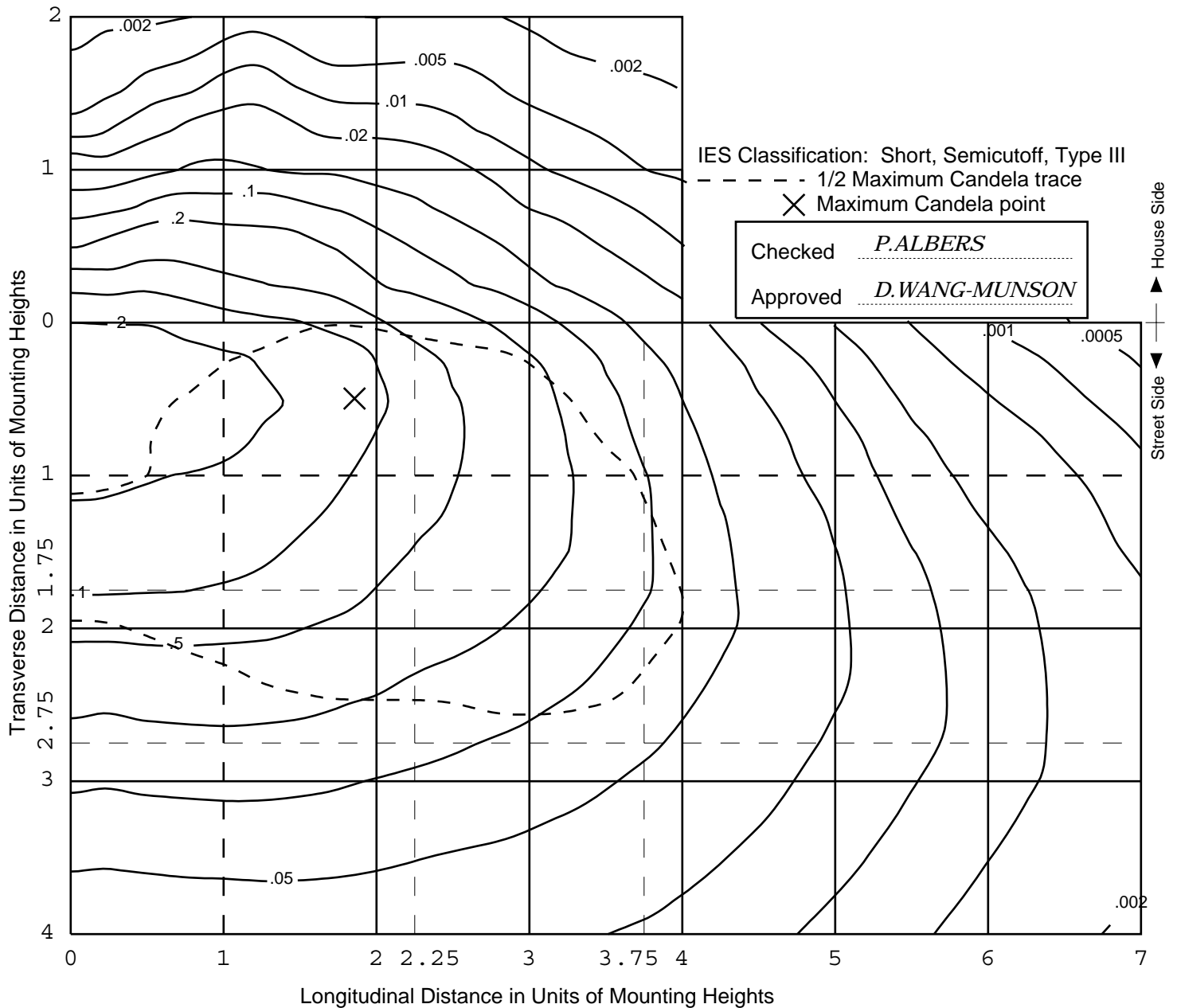
PAGE: 1 OF 9

DATE SAMPLE TESTED: 05/09/18

CATALOG NUMBER: ALED3T105Y/480 -
RWLED3T105Y/480 - RWLED3T105SFY/480 -
WPLED3T105Y/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) *



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DATE SAMPLE TESTED: 05/09/18

CATALOG NUMBER: ALED3T105Y/480 - RWLED3T105Y/480 - RWLED3T105SFY/480 - WPLED3

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 = 109.09 W AT 480.0 VAC.

LED DRIVER: 2 x RD-H065-A1810-480

TEST PROCEDURE: IESNA LM-79-08

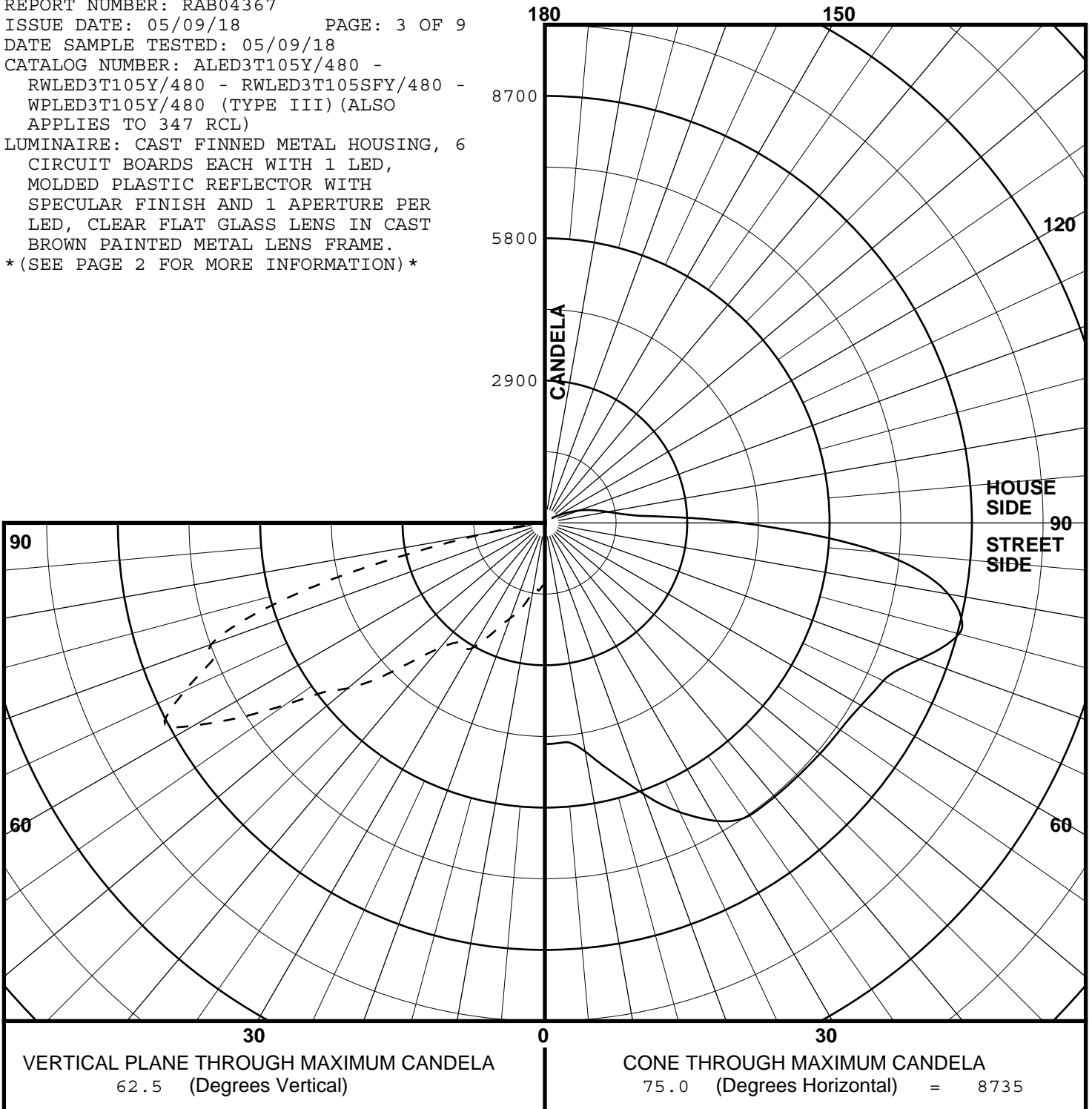
LM-80 DATA AVAILABLE FROM MANUFACTURER FOR SOLID STATE SOURCE

AMBIENT: 24.9

ACCREDITED LABORATORY CODE 201058-0

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

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 ISSUE DATE: 05/09/18 PAGE: 3 OF 9
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 CATALOG NUMBER: ALED3T105Y/480 -
 RWLED3T105Y/480 - RWLED3T105SFY/480 -
 WPLED3T105Y/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: RAB04367

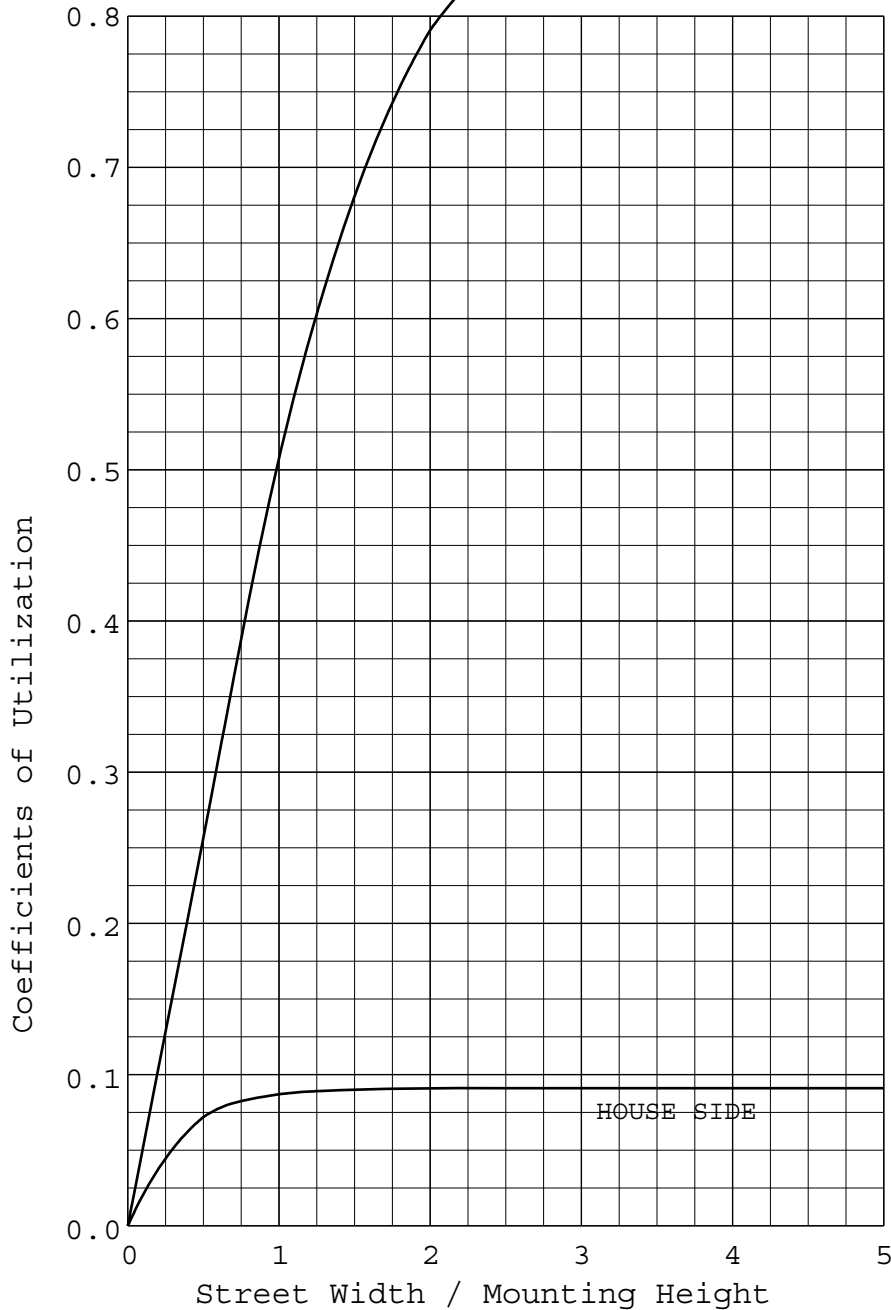
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ISSUE DATE: 05/09/18

DATE SAMPLE TESTED: 05/09/18

CATALOG NUMBER: ALED3T105Y/480 - STREET SIDE - RWLED3T105Y/480 - UPWARD SIDE - WPLED3T105Y/480 - HOUSE SIDE

COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	11639.	90.8
DOWNWARD HOUSE SIDE	1177.	9.2
DOWNWARD TOTAL	12815.	100.0
UPWARD STREET SIDE	0.	0.0
UPWARD HOUSE SIDE	0.	0.0
UPWARD TOTAL	0.	0.0
TOTAL FLUX	12815.	100.0
TOTAL INPUT WATTS = 109.1		
EFFICACY = 117.5 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.

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DATE SAMPLE TESTED: 05/09/18

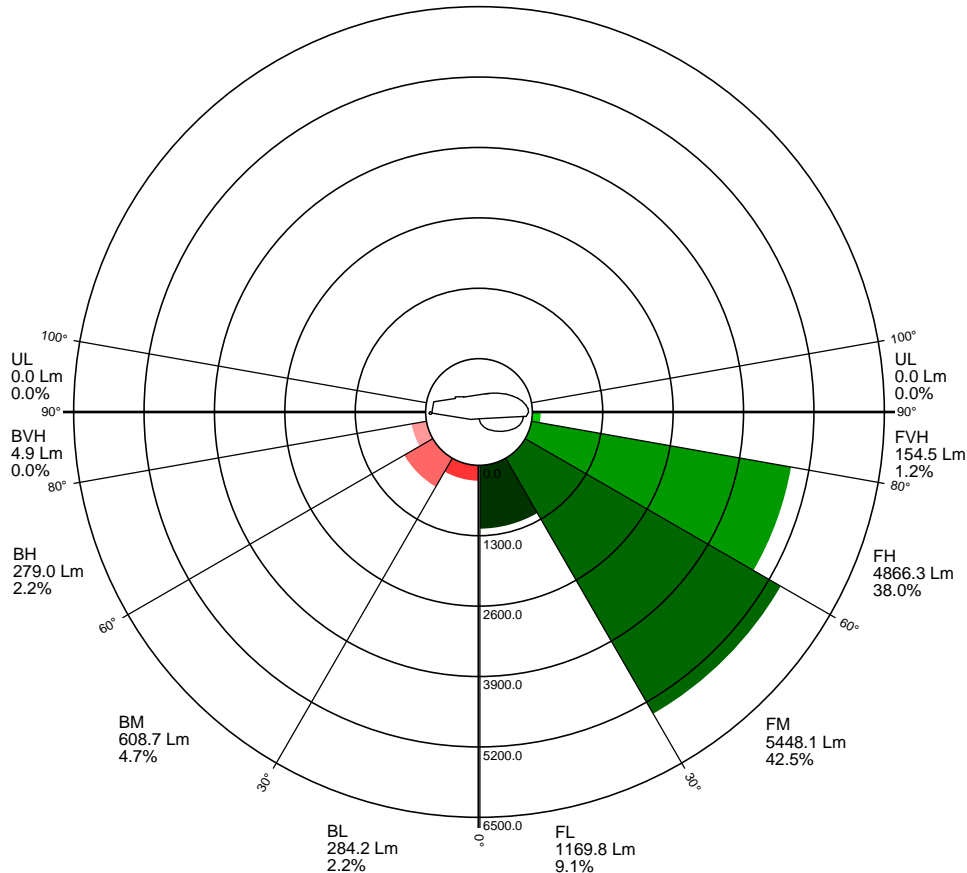
CATALOG NUMBER: ALED3T105Y/480 - RWLED3T105Y/480 - RWLED3T105SFY/480 -
WPLLED3T105Y/480 (TYPE III) (ALSO APPLIES TO CL)

Zonal Summary		Lumens	% of Fixture	Zone Ratings		
				B	U	G
Forward		11639	90.8			
FL	(0° - 30°)	1169.8	9.1			
FM	(30° - 60°)	5448.1	42.5			
FH	(60° - 80°)	4866.3	38.0			G2
FVH	(80° - 90°)	154.5	1.2			G2
Backward		1177	9.2			
BL	(0° - 30°)	284.2	2.2	B1		
BM	(30° - 60°)	608.7	4.7	B1		
BH	(60° - 80°)	279.0	2.2	B1		G1
BVH	(80° - 90°)	4.9	0.0			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		12816	100.0			

Zonal Lumen Summary

(Linear scale)

UH
0.0 Lm
0.0%



REPORT NUMBER: RAB04367

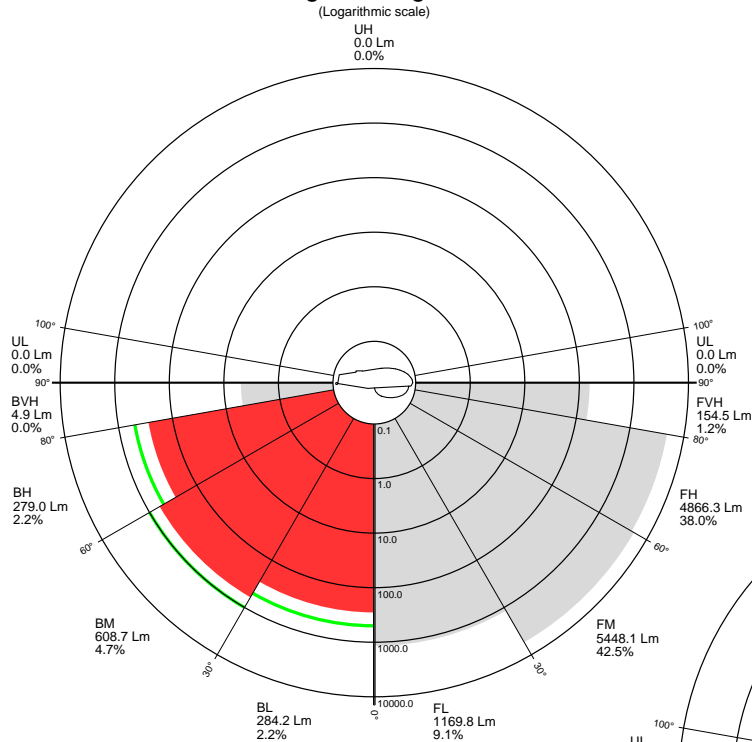
ISSUE DATE: 05/09/18

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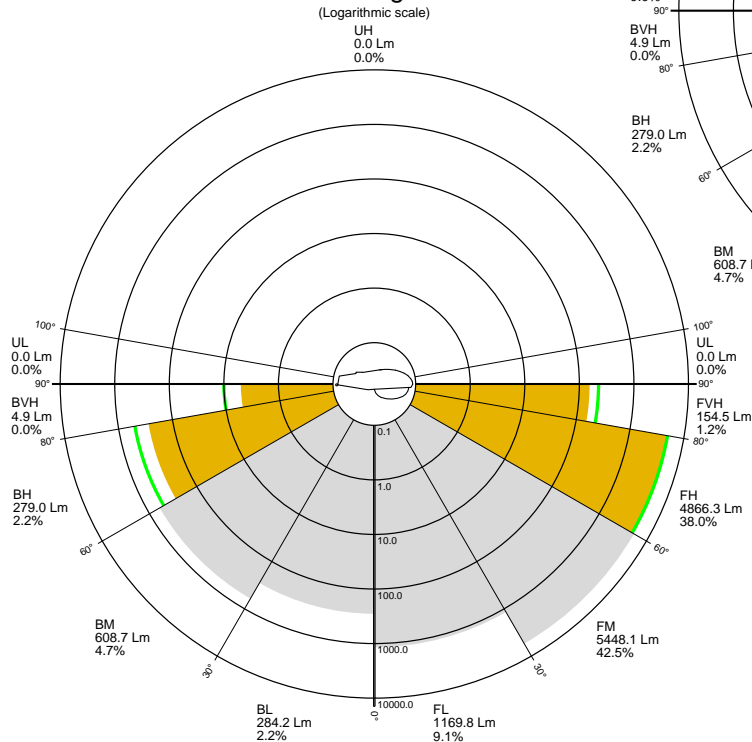
DATE SAMPLE TESTED: 05/09/18

CATALOG NUMBER: ALED3T105Y/480 - RWLED3T105Y/480 - RWLED3T105SFY/480 -
WPLED3T105Y/480 (TYPE III) (ALSO APPLIES TO 347 RCL)

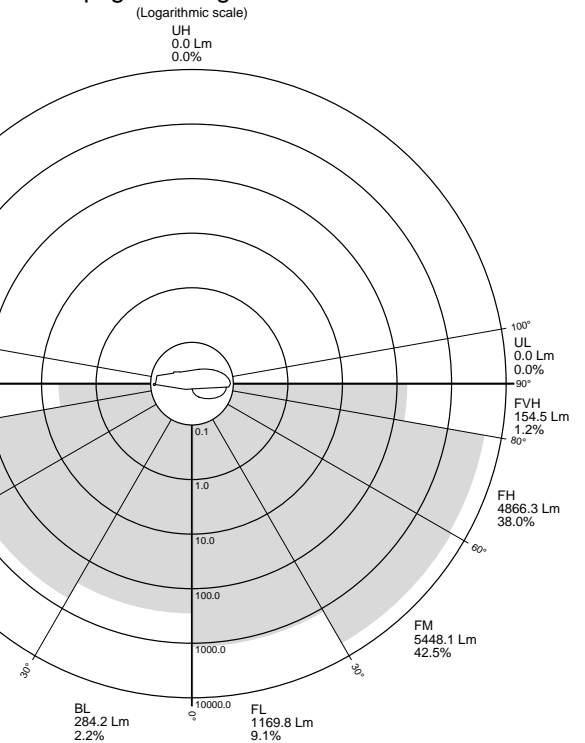
Backlight Rating Details



Glare Rating Details



Uplight Rating Details



CATALOG NUMBER: ALED3T105Y/480 - RWLED3T105Y/480 - RWLED3T105SFY/480 - WPLED3

[illegible]

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB04367

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DATE SAMPLE TESTED: 05/09/18

CATALOG NUMBER: ALED3T105Y/480 - RWLED3T105Y/480 - RWLED3T105SFY/480 - WPLED3

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	10.	10.	9.	9.	9.	8.	7.	5.	4.	4.
	85.0	13.	11.	11.	9.	8.	7.	6.	4.	4.	4.
V	82.5	31.	20.	15.	11.	8.	7.	6.	4.	4.	4.
E	80.0	154.	94.	49.	35.	9.	6.	5.	4.	4.	4.
R	77.5	610.	384.	126.	68.	11.	6.	5.	4.	4.	5.
T	75.0	1498.	636.	222.	85.	35.	9.	6.	5.	5.	6.
I	72.5	2348.	988.	313.	138.	89.	28.	7.	5.	7.	7.
C	70.0	3017.	1391.	549.	230.	96.	34.	16.	5.	7.	7.
A	67.5	3146.	1482.	756.	323.	105.	46.	33.	8.	8.	8.
L	65.0	3469.	1451.	820.	382.	130.	81.	66.	20.	10.	10.
	62.5<<	4013.	1792.	1014.	488.	169.	130.	78.	29.	15.	10.
A	60.0	4181.	1970.	1155.	537.	210.	165.	83.	36.	21.	14.
N	57.5	3982.	2016.	1179.	684.	244.	177.	91.	41.	22.	12.
G	55.0	3453.	1927.	1113.	727.	279.	185.	105.	50.	25.	11.
L	52.5	2973.	1899.	1064.	658.	322.	203.	114.	56.	31.	13.
E	50.0	2681.	1939.	999.	659.	376.	228.	122.	60.	35.	39.
	47.5	2418.	1847.	1007.	678.	452.	241.	140.	66.	40.	63.
	45.0	2175.	1725.	1021.	683.	465.	272.	166.	73.	51.	45.
	42.5	1994.	1601.	1020.	672.	501.	297.	181.	96.	57.	40.
	40.0	1862.	1531.	1015.	656.	546.	326.	194.	117.	81.	70.
	37.5	1802.	1523.	1047.	650.	549.	346.	219.	126.	95.	83.
	35.0	1813.	1570.	1112.	694.	541.	368.	255.	151.	104.	85.
	30.0	1749.	1543.	1169.	781.	532.	443.	303.	207.	154.	129.
	25.0	1578.	1416.	1133.	885.	565.	407.	308.	227.	180.	178.
	20.0	1406.	1276.	1027.	866.	671.	478.	351.	274.	238.	228.
	15.0	1323.	1248.	1067.	919.	780.	643.	537.	489.	461.	468.
	10.0	1208.	1153.	1044.	929.	856.	813.	780.	731.	676.	638.
	5.0	1257.	1224.	1159.	1098.	1035.	984.	944.	901.	872.	851.
	0.0	1240.	1240.	1240.	1240.	1240.	1240.	1240.	1240.	1240.	1240.

CONE OF MAXIMUM CANDELA

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PREPARED FOR: RAB LIGHTING INC. RC LIGHTING

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DATE SAMPLE TESTED: 05/09/18

5-DEGREE ZONAL LUMEN SUMMARY

0- 5	31
5- 10	99
10- 15	183
15- 20	276
20- 25	375
25- 30	490
30- 35	610
35- 40	712
40- 45	841
45- 50	1029
50- 55	1274
55- 60	1590
60- 65	1733
65- 70	1555
70- 75	1211
75- 80	647
80- 85	150
85- 90	10
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	130
0- 20	589
0- 30	1454
0- 40	2776
0- 50	4646
0- 60	7511
0- 70	10799
0- 80	12656
0- 90	12815
0-100	12815
0-110	12815
0-120	12815
0-130	12815
0-140	12815
0-150	12815
0-160	12815
0-170	12815
0-180	12815

REPORT NUMBER: RAB04368
DATE: 5/9/2018
PREPARED FOR: RAB LIGHTING INC. RC LIGHTING
CATALOG NUMBER: ALED3T105Y/480 - RWLED3T105Y/480 - RWLED3T105SFY/480 -
WPLED3T105Y/480 (TYPE III) (ALSO APPLIES TO 347 RCL)

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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: 2 x 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: RAB04368
 DATE: 5/9/2018
 PREPARED FOR: RAB LIGHTING INC. RC LIGHTING
 CATALOG NUMBER: ALED3T105Y/480 - RWLED3T105Y/480 - RWLED3T105SFY/480 -
 WPLED3T105Y/480 (TYPE III) (ALSO APPLIES TO 347 RCL)

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RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	12815 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4363
Chromaticity Ordinate y	0.4067
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2490
Chromaticity Ordinate v'	0.5223
Correlated Color Temp CCT (K)	3032
ANSI C78.377-2008 Duv	0.001
Total Radiant Flux (milliWatts)	35702 *
ELECTRICAL	
Input Voltage (Volts AC)	480.0
Input Current (Amps AC)	0.250
Input Power (Watts)	109.1
Input Power Factor (%)	90.8
Input Current THD (%)	14.5
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	117.5
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	347.0
Input Current (Amps AC)	0.313
Input Power (Watts)	106.4
Input Power Factor (%)	97.8
Input Current THD (%)	6.0
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	81
R3 Strong yellowish green	95
R4 Moderate yellowish green	68
R5 Light bluish green	67
R6 Light blue	77
R7 Light violet	75
R8 Light reddish purple	38
R9 Strong red	-46
R10 Strong yellow	60
R11 Strong green	65
R12 Strong blue	59
R13 Light yellowish pink (skin)	69
R14 Moderate olive green (leaf)	97

*NOTE:

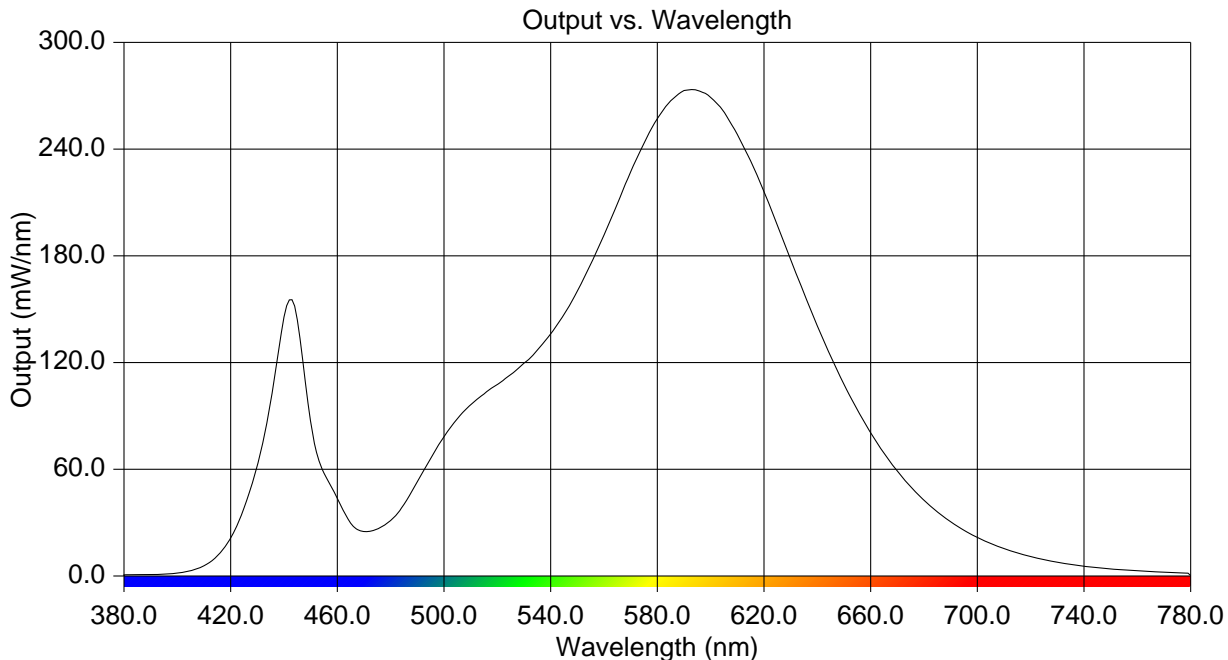
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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: RAB04368
 DATE: 5/9/2018
 PREPARED FOR: RAB LIGHTING INC. RC LIGHTING
 CATALOG NUMBER: ALED3T105Y/480 - RWLED3T105Y/480 - RWLED3T105SFY/480 -
 WPLED3T105Y/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	0.629	515	102.373	650	107.765
385	0.689	520	107.653	655	93.565
390	0.782	525	113.282	660	80.553
395	1.072	530	119.734	665	69.100
400	1.602	535	127.101	670	58.955
405	2.923	540	136.199	675	50.143
410	5.760	545	147.121	680	42.615
415	11.281	550	160.254	685	36.099
420	21.359	555	175.232	690	30.461
425	38.244	560	191.820	695	25.713
430	62.305	565	209.332	700	21.707
435	98.033	570	227.350	705	18.286
440	145.702	575	243.295	710	15.432
445	144.056	580	257.343	715	12.935
450	86.730	585	267.209	720	10.920
455	57.844	590	273.077	725	9.205
460	43.652	595	273.204	730	7.733
465	29.691	600	269.160	735	6.556
470	24.899	605	260.942	740	5.553
475	26.494	610	248.379	745	4.667
480	31.184	615	233.449	750	3.992
485	40.278	620	216.393	755	3.375
490	52.996	625	197.693	760	2.899
495	66.255	630	177.739	765	2.466
500	78.491	635	159.095	770	2.105
505	88.437	640	140.526	775	1.801
510	96.310	645	123.673	780	0.269



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CIE Chromaticity Diagram

