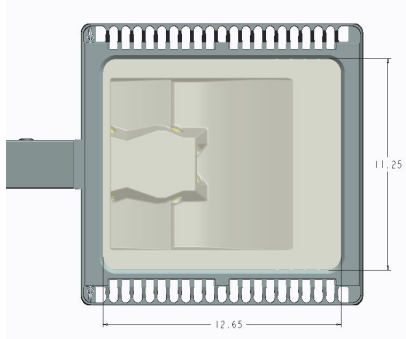


## ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 25 foot mounting height.



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PREPARED FOR: RAB LIGHTING INC. RC LIGHTING

CATALOG NUMBER: ALED3T105Y -

RWLED3T105Y - RWLED3T105SFY -

WPLED3T105Y (TYPE III) (ALSO APPLIES TO RCL)

LUMINAIRE: CAST FINNED METAL HOUSING, 6

CIRCUIT BOARDS EACH WITH 1 LED,

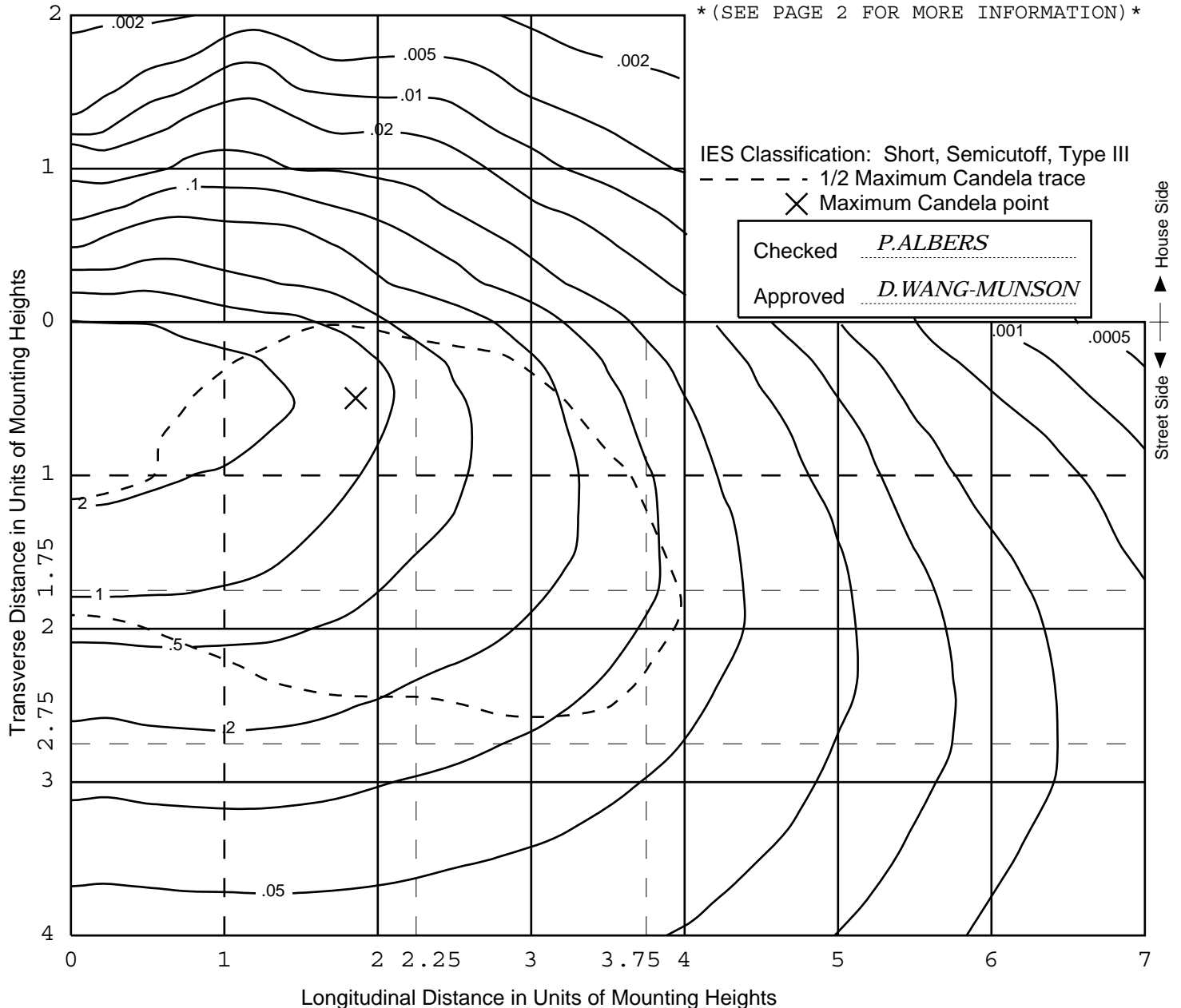
MOLDED PLASTIC REFLECTOR WITH

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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PREPARED FOR: RAB LIGHTING INC. RC LIGHTING

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 = 110.06 W AT 120.0 VAC.

LED DRIVER: 2 x RD-060-A1400

TEST PROCEDURE: IESNA LM-79-08

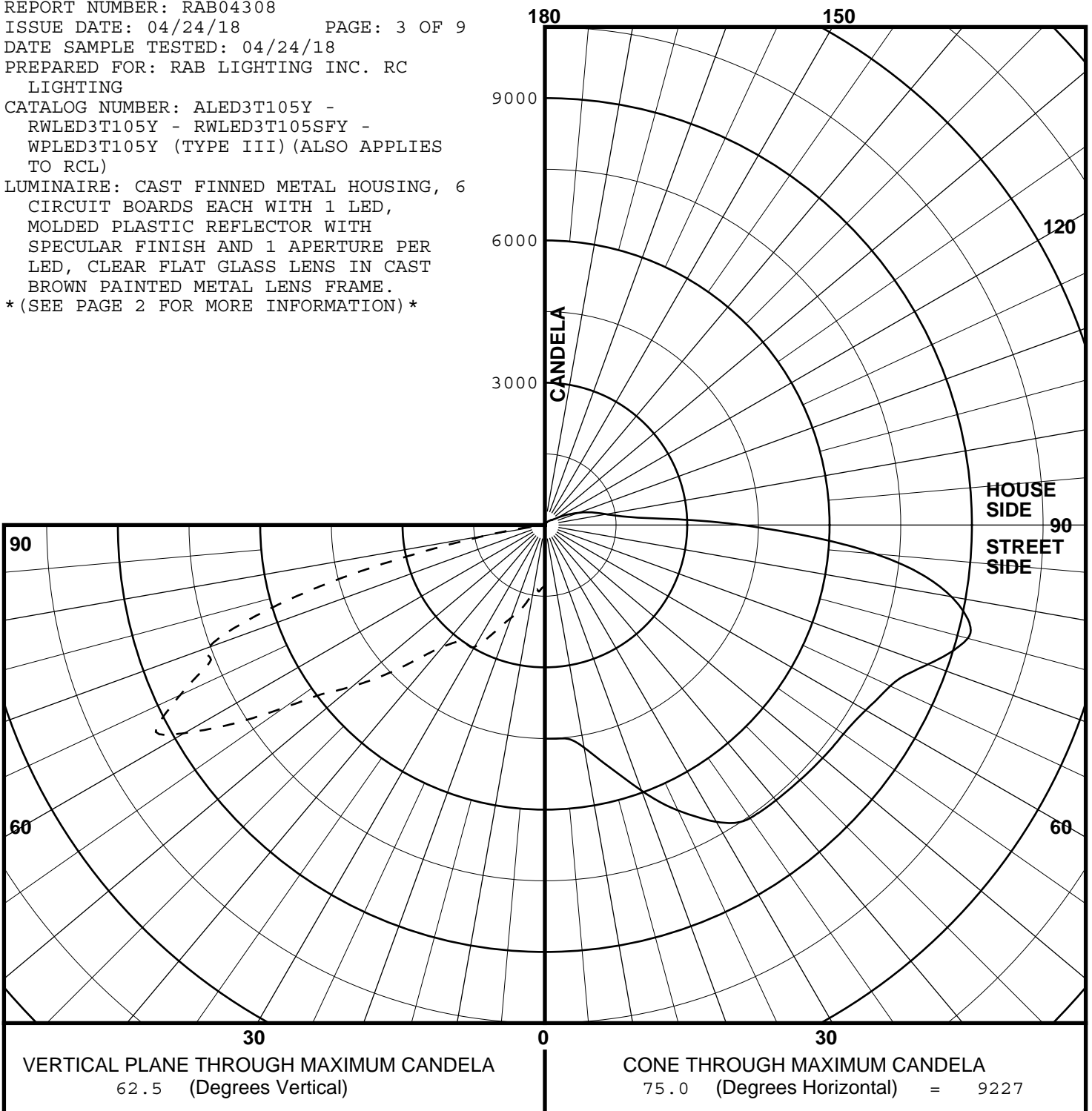
LM-80 DATA AVAILABLE FROM MANUFACTURER FOR SOLID STATE SOURCE

AMBIENT: 25.1

ACCREDITED LABORATORY CODE 201058-0

## MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

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 LIGHTING  
 CATALOG NUMBER: ALED3T105Y -  
 RWLED3T105Y - RWLED3T105SFY -  
 WPLED3T105Y (TYPE III) (ALSO APPLIES  
 TO 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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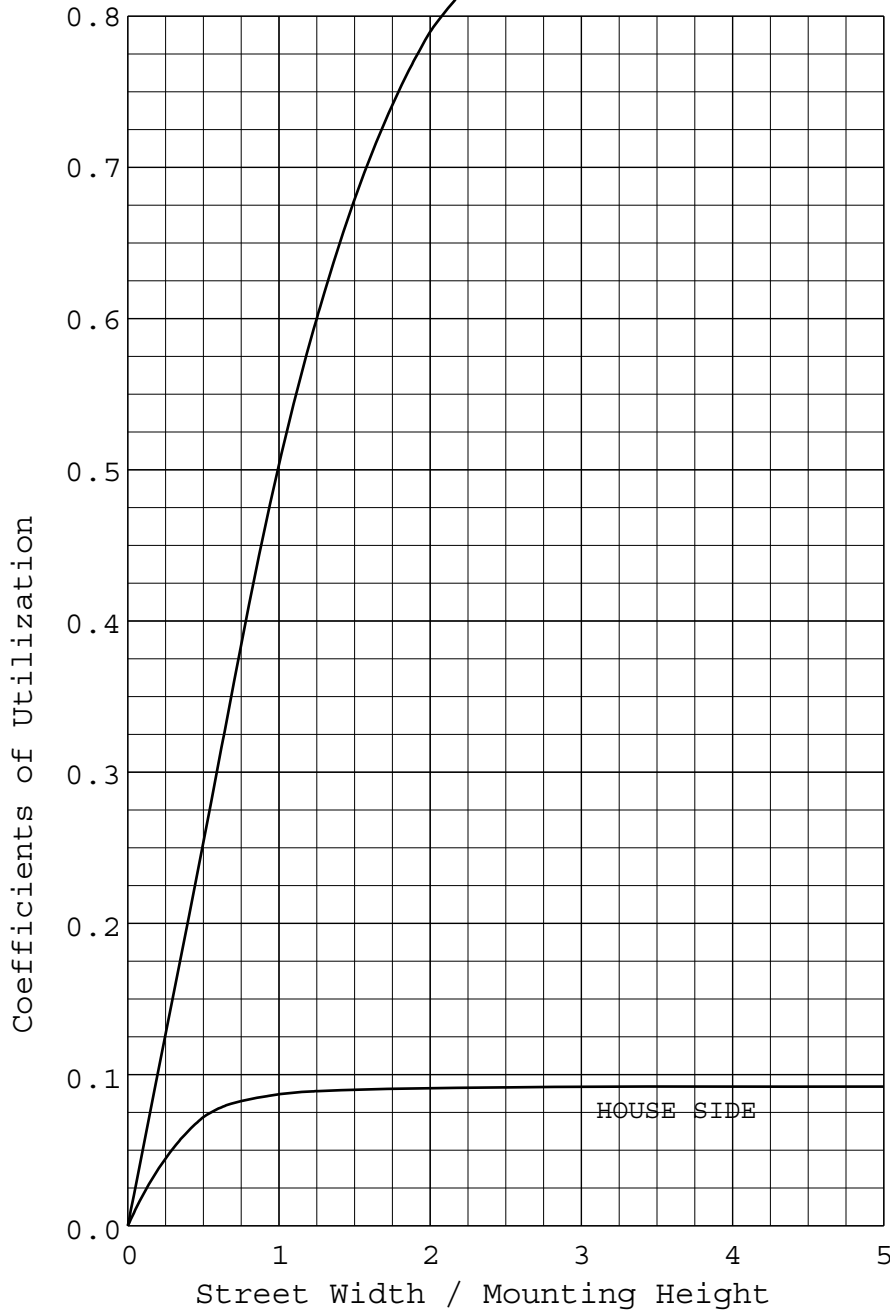
ISSUE DATE: 04/24/18

STREET SIDE

DATE SAMPLE TESTED: 04/24/18

PREPARED FOR: RAB LIGHTING INC. RC LIGHTING

# COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	12022.	90.8
DOWNWARD HOUSE SIDE	1223.	9.2
DOWNWARD TOTAL	13245.	100.0
UPWARD STREET SIDE	0.	0.0
UPWARD HOUSE SIDE	0.	0.0
UPWARD TOTAL	0.	0.0
TOTAL FLUX	13245.	100.0
TOTAL INPUT WATTS = 110.1		
EFFICACY = 120.3 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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BUG Rating:

Zonal Summary

Lumens

% of Fixture

B1 U0 G3

Zone Ratings

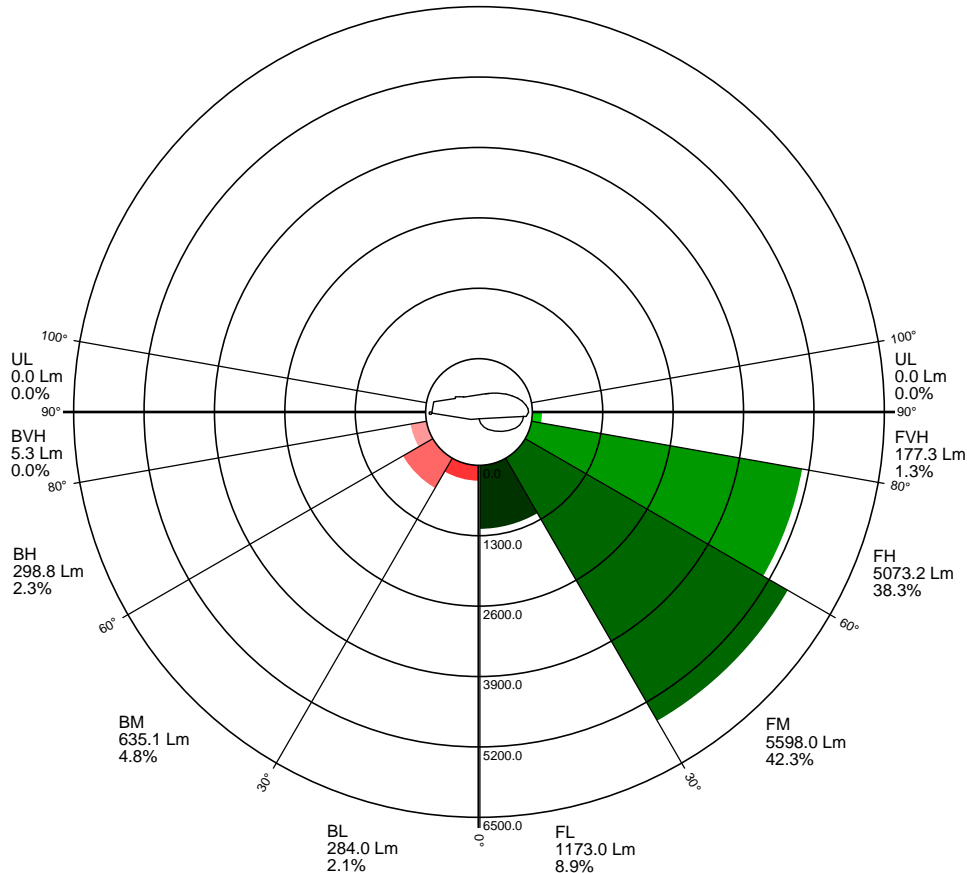
B U G

Forward		12022	90.8			
FL	(0° - 30°)	1173.0	8.9			
FM	(30° - 60°)	5598.0	42.3			
FH	(60° - 80°)	5073.2	38.3			G3
FVH	(80° - 90°)	177.3	1.3			G2
Backward		1223	9.2			
BL	(0° - 30°)	284.0	2.1	B1		
BM	(30° - 60°)	635.1	4.8	B1		
BH	(60° - 80°)	298.8	2.3	B1		G1
BVH	(80° - 90°)	5.3	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		13245	100.0			

### Zonal Lumen Summary

(Linear scale)

UH  
0.0 Lm  
0.0%



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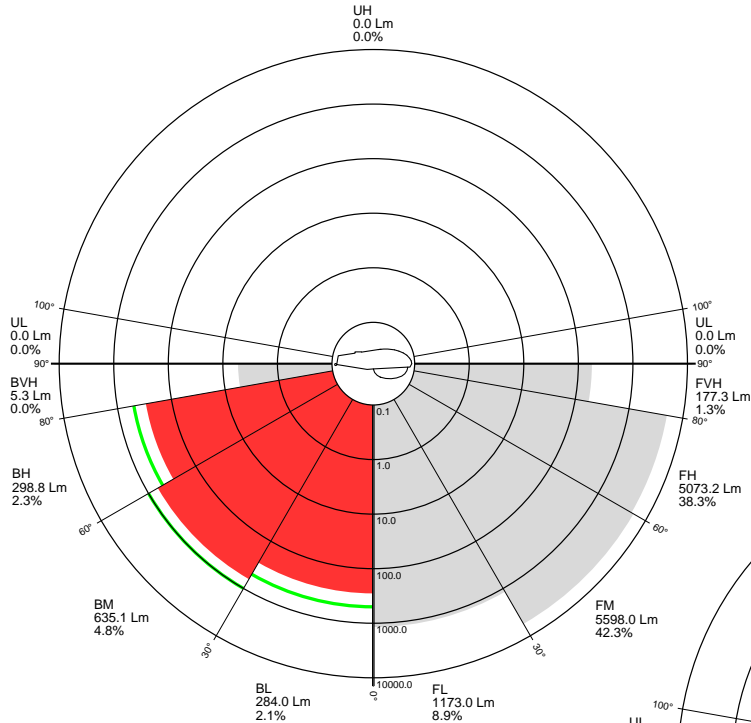
PREPARED FOR: RAB LIGHTING INC. RC LIGHTING

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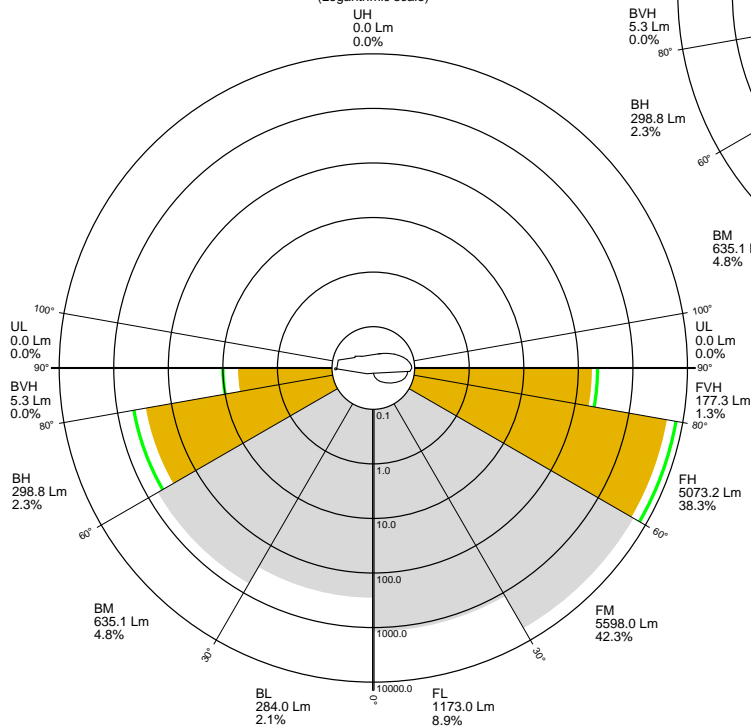
## Backlight Rating Details

(Logarithmic scale)



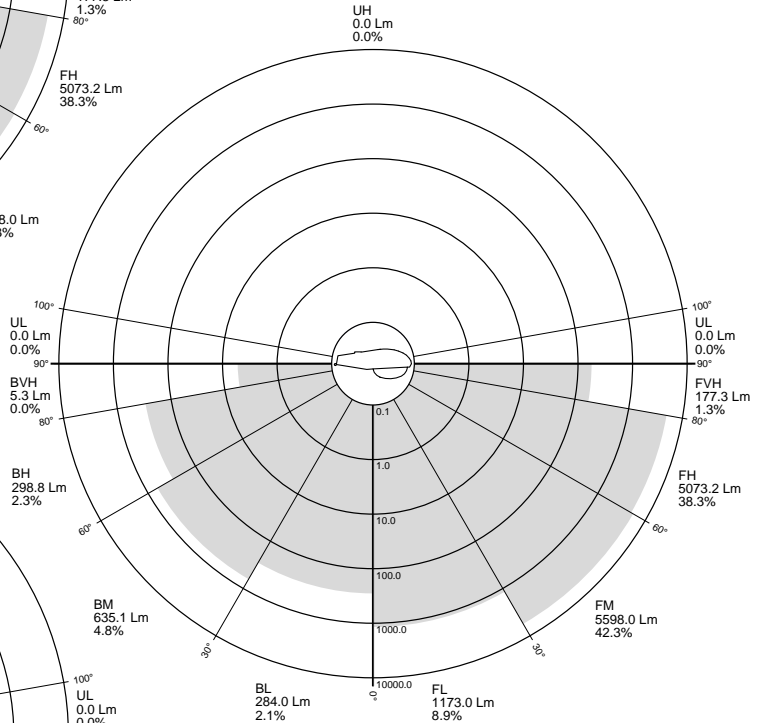
## Glare Rating Details

(Logarithmic scale)



## Uplight Rating Details

(Logarithmic scale)





CONE OF MAXIMUM CANDELA

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DATE SAMPLE TESTED: 04/24/18

PREPARED FOR: RAB LIGHTING INC. RC LIGHTING

### 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	10.	10.	10.	10.	10.	9.	7.	5.	5.	5.	5.
	85.0	14.	12.	11.	10.	9.	8.	7.	5.	5.	5.	5.
V	82.5	28.	21.	13.	11.	9.	8.	7.	5.	5.	5.	5.
E	80.0	162.	108.	48.	32.	10.	7.	6.	5.	5.	5.	5.
R	77.5	656.	405.	140.	68.	12.	7.	6.	5.	5.	6.	6.
T	75.0	1535.	704.	251.	92.	30.	11.	6.	5.	7.	7.	7.
I	72.5	2424.	1125.	353.	155.	90.	30.	8.	6.	8.	9.	9.
C	70.0	3173.	1490.	582.	269.	106.	36.	18.	6.	8.	9.	8.
A	67.5	3228.	1658.	843.	375.	121.	51.	36.	9.	9.	10.	9.
L	65.0	3456.	1527.	945.	429.	152.	78.	65.	19.	11.	12.	11.
	62.5<<	4152.	1854.	1033.	511.	191.	133.	88.	28.	14.	11.	11.
A	60.0	4378.	2107.	1225.	558.	232.	186.	93.	38.	21.	15.	13.
N	57.5	4205.	2188.	1246.	710.	278.	208.	101.	43.	23.	14.	12.
G	55.0	3735.	2099.	1161.	743.	310.	214.	113.	52.	25.	12.	11.
L	52.5	3148.	1984.	1093.	682.	348.	230.	127.	61.	31.	13.	11.
E	50.0	2801.	2006.	1024.	675.	398.	253.	139.	65.	39.	33.	22.
	47.5	2527.	1929.	1018.	702.	464.	274.	154.	73.	44.	67.	82.
	45.0	2273.	1793.	1043.	701.	485.	295.	180.	82.	60.	57.	78.
	42.5	2075.	1671.	1037.	685.	517.	319.	201.	103.	60.	43.	39.
	40.0	1929.	1583.	1037.	669.	546.	344.	211.	137.	87.	68.	44.
	37.5	1864.	1571.	1068.	666.	566.	362.	232.	136.	105.	86.	75.
	35.0	1865.	1611.	1122.	687.	550.	374.	266.	167.	111.	90.	81.
	30.0	1782.	1568.	1162.	769.	538.	450.	309.	211.	153.	130.	113.
	25.0	1608.	1425.	1133.	870.	556.	414.	314.	230.	177.	169.	170.
	20.0	1428.	1288.	1033.	861.	666.	468.	345.	277.	229.	219.	211.
	15.0	1364.	1286.	1056.	917.	758.	639.	530.	476.	451.	458.	445.
	10.0	1240.	1181.	1062.	926.	860.	799.	761.	711.	657.	614.	603.
	5.0	1286.	1260.	1185.	1122.	1061.	1007.	947.	904.	862.	854.	841.
	0.0	1274.	1274.	1274.	1274.	1274.	1274.	1274.	1274.	1274.	1274.	1274.

CONE OF MAXIMUM CANDELA

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### 5-DEGREE ZONAL LUMEN SUMMARY

0- 5	31
5- 10	101
10- 15	184
15- 20	277
20- 25	374
25- 30	489
30- 35	610
35- 40	720
40- 45	860
45- 50	1056
50- 55	1322
55- 60	1665
60- 65	1799
65- 70	1611
70- 75	1263
75- 80	699
80- 85	171
85- 90	12
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	133
0- 20	594
0- 30	1457
0- 40	2787
0- 50	4702
0- 60	7690
0- 70	11101
0- 80	13062
0- 90	13245
0-100	13245
0-110	13245
0-120	13245
0-130	13245
0-140	13245
0-150	13245
0-160	13245
0-170	13245
0-180	13245

REPORT NUMBER: RAB04309  
DATE: 4/24/2018  
PREPARED FOR: RAB LIGHTING INC. RC LIGHTING  
CATALOG NUMBER: ALED3T105Y - RWLED3T105Y - RWLED3T105SFY - WPLED3T105Y (TYPE III) (ALSO APPLIES TO 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 RD-060-A1400

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

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

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 DATE: 4/24/2018  
 PREPARED FOR: RAB LIGHTING INC. RC LIGHTING  
 CATALOG NUMBER: ALED3T105Y - RWLED3T105Y - RWLED3T105SFY - WPLED3T105Y (TYPE III) (ALSO APPLIES TO RCL)

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### RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	13245 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4362
Chromaticity Ordinate y	0.4067
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2489
Chromaticity Ordinate v'	0.5223
Correlated Color Temp CCT (K)	3034
ANSI C78.377-2008 Duv	0.001
Total Radiant Flux (milliWatts)	36902 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.921
Input Power (Watts)	110.1
Input Power Factor (%)	99.5
Input Current THD (%)	6.3
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	120.3
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.424
Input Power (Watts)	108.6
Input Power Factor (%)	92.4
Input Current THD (%)	10.0
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	64
R12 Strong blue	59
R13 Light yellowish pink (skin)	68
R14 Moderate olive green (leaf)	97

### \*NOTE:

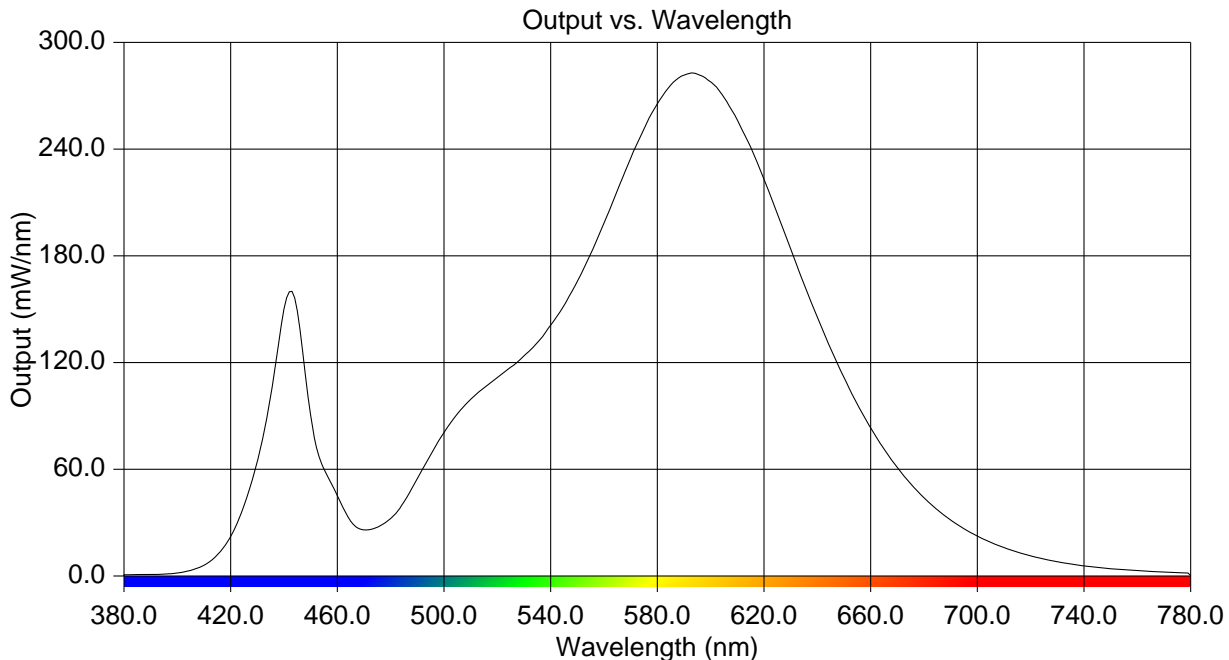
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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: RAB04309  
 DATE: 4/24/2018  
 PREPARED FOR: RAB LIGHTING INC. RC LIGHTING  
 CATALOG NUMBER: ALED3T105Y - RWLED3T105Y - RWLED3T105SFY - WPLED3T105Y (TYPE III) (ALSO APPLIES TO RCL)

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### RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.644	515	106.040	650	111.511
385	0.727	520	111.559	655	96.588
390	0.825	525	117.453	660	83.230
395	1.071	530	123.841	665	71.380
400	1.673	535	131.329	670	60.985
405	3.084	540	141.192	675	51.845
410	6.029	545	152.059	680	43.933
415	11.854	550	165.657	685	37.193
420	22.212	555	181.309	690	31.492
425	39.586	560	198.426	695	26.574
430	64.348	565	216.888	700	22.500
435	100.943	570	234.967	705	18.902
440	150.299	575	251.515	710	15.944
445	149.100	580	265.605	715	13.393
450	90.244	585	275.987	720	11.284
455	60.117	590	281.714	725	9.543
460	45.284	595	282.350	730	8.011
465	30.828	600	277.809	735	6.738
470	25.886	605	269.263	740	5.718
475	27.429	610	256.505	745	4.829
480	32.229	615	241.256	750	4.146
485	41.703	620	223.116	755	3.498
490	54.785	625	204.168	760	2.991
495	68.448	630	183.903	765	2.528
500	80.846	635	164.305	770	2.182
505	91.170	640	145.467	775	1.878
510	99.316	645	127.974	780	0.282



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## CIE Chromaticity Diagram

