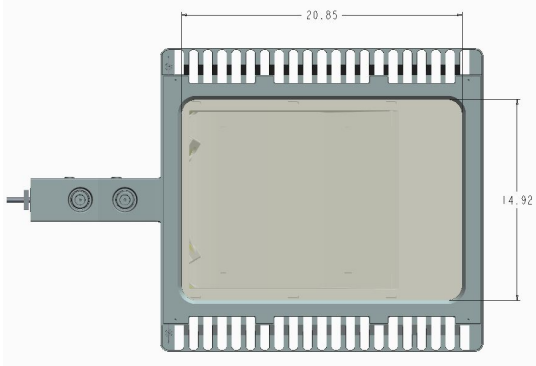


## ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 35 foot mounting height.



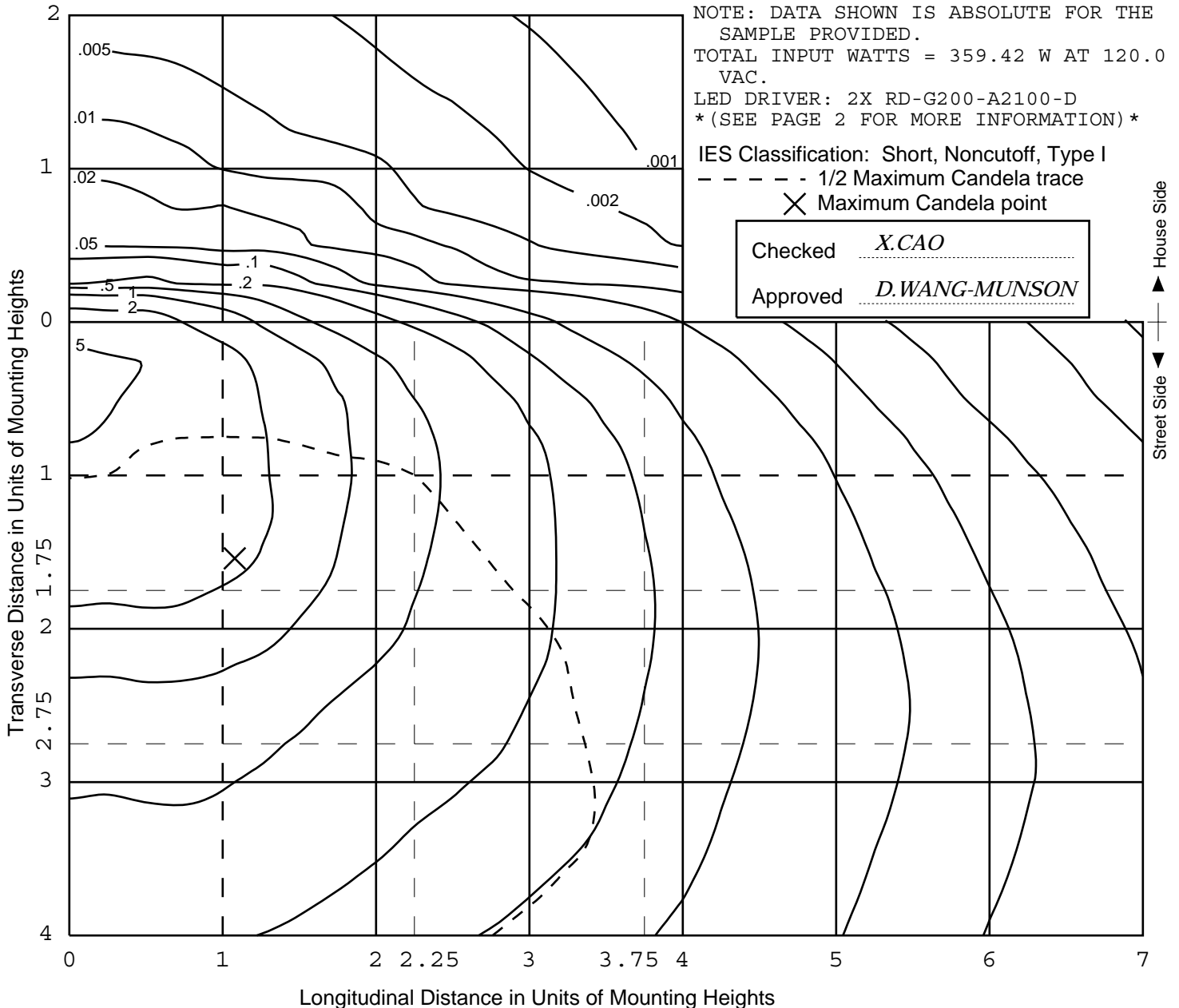
REPORT NUMBER: RAB01822  
 ISSUE DATE: 04/05/16 PAGE: 1 OF 9  
 DATE SAMPLE TESTED: 04/05/16  
 PREPARED FOR: RAB LIGHTING INC.  
 CATALOG NUMBER: ALED4T360/D10 -  
 ALED4T360SF/D10 - WPLED4T360/D10 -  
 WPLED4T360FX/D10 (TYPE IV)  
 LUMINAIRE: CAST FINNED METAL HOUSING, 4  
 CIRCUIT BOARDS EACH WITH 1 LED,  
 MOLDED 2-PIECE PLASTIC REFLECTOR WITH  
 SPECULAR FINISH AND 1 APERTURE PER  
 LED, CLEAR FLAT GLASS LENS IN CAST  
 BRONZE PAINTED METAL LENS FRAME.  
 LAMPS: FOUR WHITE LIGHT EMITTING DIODES  
 (LEDs)

NOTE: DATA SHOWN IS ABSOLUTE FOR THE  
 SAMPLE PROVIDED.  
 TOTAL INPUT WATTS = 359.42 W AT 120.0  
 VAC.

LED DRIVER: 2X RD-G200-A2100-D  
 \*(SEE PAGE 2 FOR MORE INFORMATION)\*

IES Classification: Short, Noncutoff, Type I

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



REPORT NUMBER: RAB01822  
ISSUE DATE: 04/05/16  
PREPARED FOR: RAB LIGHTING INC.

PAGE: 2 OF 9  
DATE SAMPLE TESTED: 04/05/16

ADDITIONAL INFORMATION

TEST PROCEDURE: IESNA LM-79-08

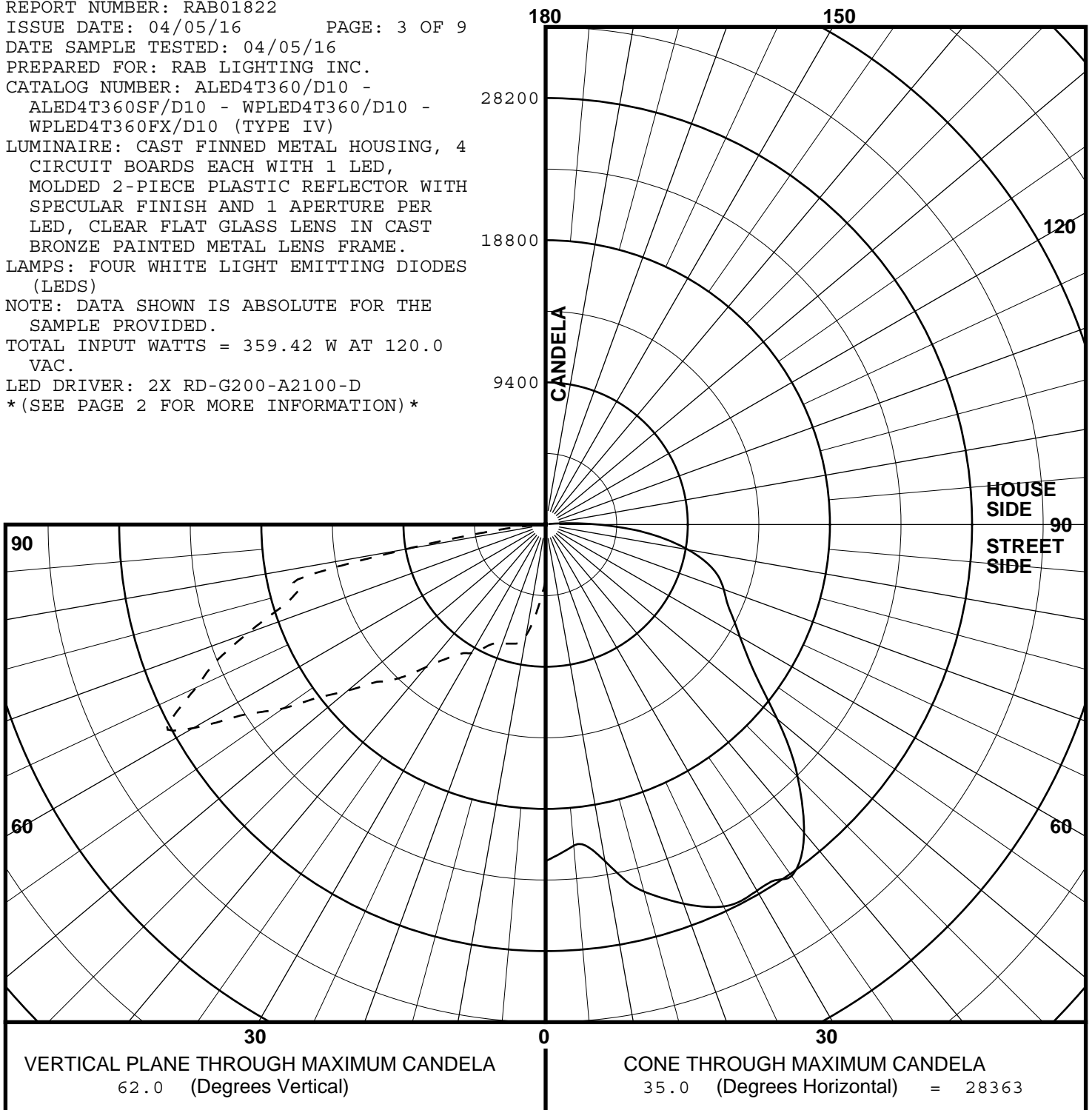
TEST DISTANCE : 28.25 FEET

ACCREDITED LABORATORY CODE 201058-0

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

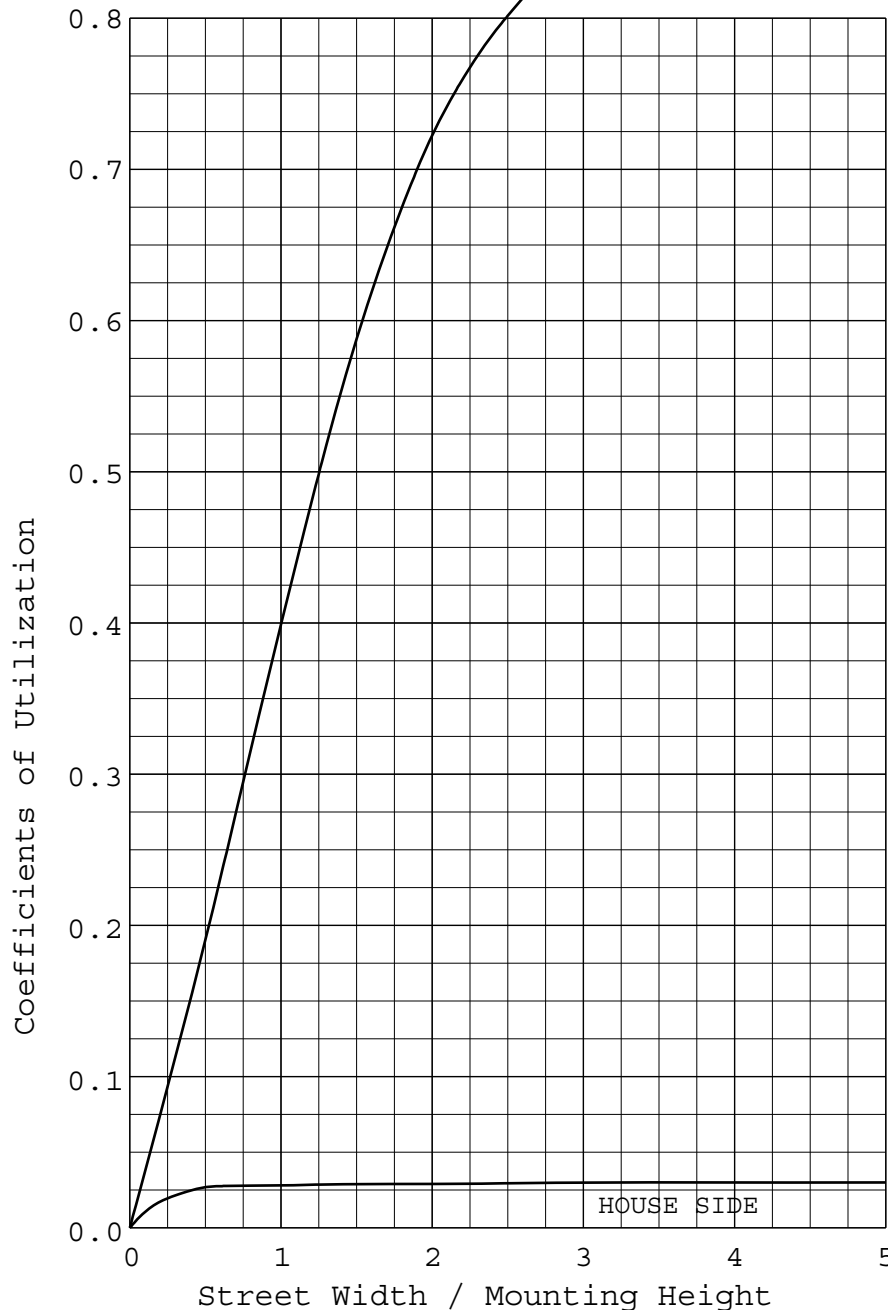
REPORT NUMBER: RAB01822  
 ISSUE DATE: 04/05/16 PAGE: 3 OF 9  
 DATE SAMPLE TESTED: 04/05/16  
 PREPARED FOR: RAB LIGHTING INC.  
 CATALOG NUMBER: ALED4T360/D10 -  
 ALED4T360SF/D10 - WPLED4T360/D10 -  
 WPLED4T360FX/D10 (TYPE IV)  
 LUMINAIRE: CAST FINNED METAL HOUSING, 4  
 CIRCUIT BOARDS EACH WITH 1 LED,  
 MOLDED 2-PIECE PLASTIC REFLECTOR WITH  
 SPECULAR FINISH AND 1 APERTURE PER  
 LED, CLEAR FLAT GLASS LENS IN CAST  
 BRONZE PAINTED METAL LENS FRAME.  
 LAMPS: FOUR WHITE LIGHT EMITTING DIODES  
 (LEDS)  
 NOTE: DATA SHOWN IS ABSOLUTE FOR THE  
 SAMPLE PROVIDED.  
 TOTAL INPUT WATTS = 359.42 W AT 120.0  
 VAC.  
 LED DRIVER: 2X RD-G200-A2100-D  
 \*(SEE PAGE 2 FOR MORE INFORMATION)\*



REPORT NUMBER: RAB01822  
ISSUE DATE: 04/05/16  
PREPARED FOR: RAB LIGHTING INC.

PAGE: 4 OF 9  
DATE SAMPLE TESTED: 04/05/16

## COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	36208.	96.9
DOWNWARD HOUSE SIDE	1157.	3.1
DOWNWARD TOTAL	37366.	100.0
UPWARD STREET SIDE	0.	0.0
UPWARD HOUSE SIDE	0.	0.0
UPWARD TOTAL	0.	0.0
TOTAL FLUX	37366.	100.0
TOTAL INPUT WATTS = 359.4		
EFFICACY = 104.0 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: RAB01822  
 ISSUE DATE: 04/05/16  
 PREPARED FOR: RAB LIGHTING INC.

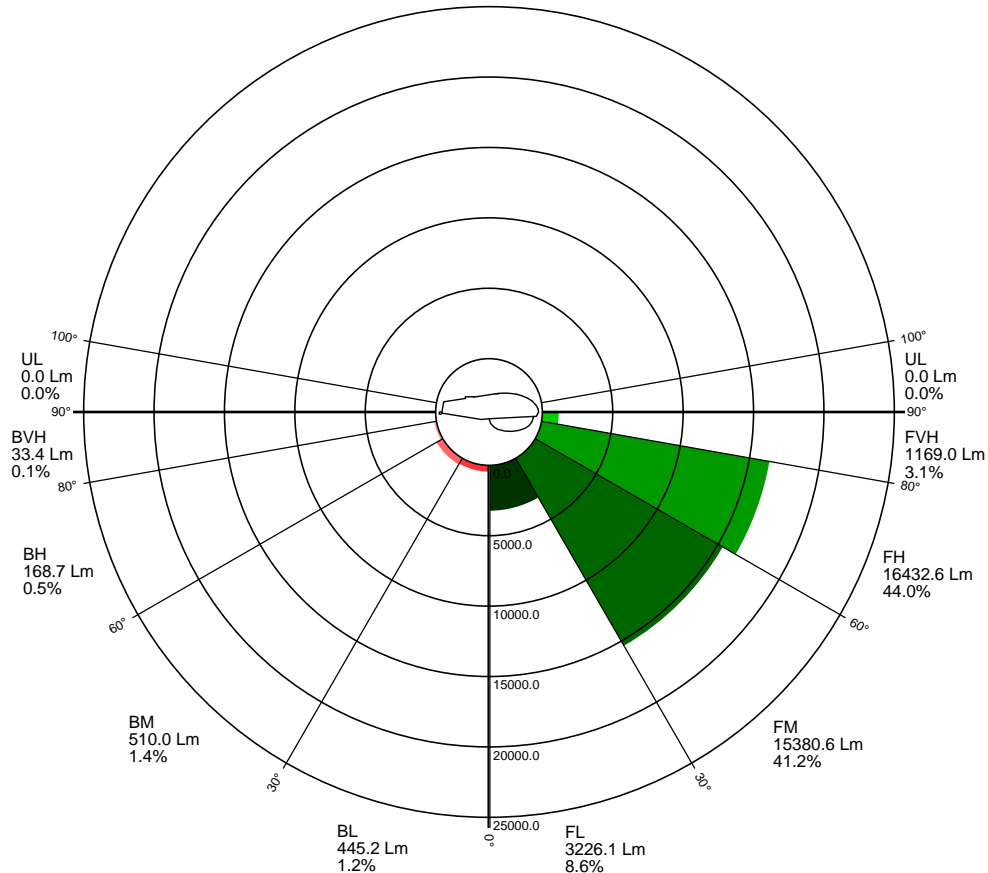
PAGE: 5 OF 9  
 DATE SAMPLE TESTED: 04/05/16

BUG Rating:				B1 U0 G5		
Zonal Summary		Lumens	% of Fixture	Zone Ratings		
				B	U	G
Forward		36208	96.9			
FL	(0° - 30°)	3226.1	8.6			
FM	(30° - 60°)	15380.6	41.2			
FH	(60° - 80°)	16432.6	44.0			G5
FVH	(80° - 90°)	1169.0	3.1			G5
Backward		1157	3.1			
BL	(0° - 30°)	445.2	1.2	B1		
BM	(30° - 60°)	510.0	1.4	B1		
BH	(60° - 80°)	168.7	0.5	B1		G1
BVH	(80° - 90°)	33.4	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		37366	100.0			

### Zonal Lumen Summary

(Linear scale)

UH  
0.0 Lm  
0.0%



REPORT NUMBER: RAB01822

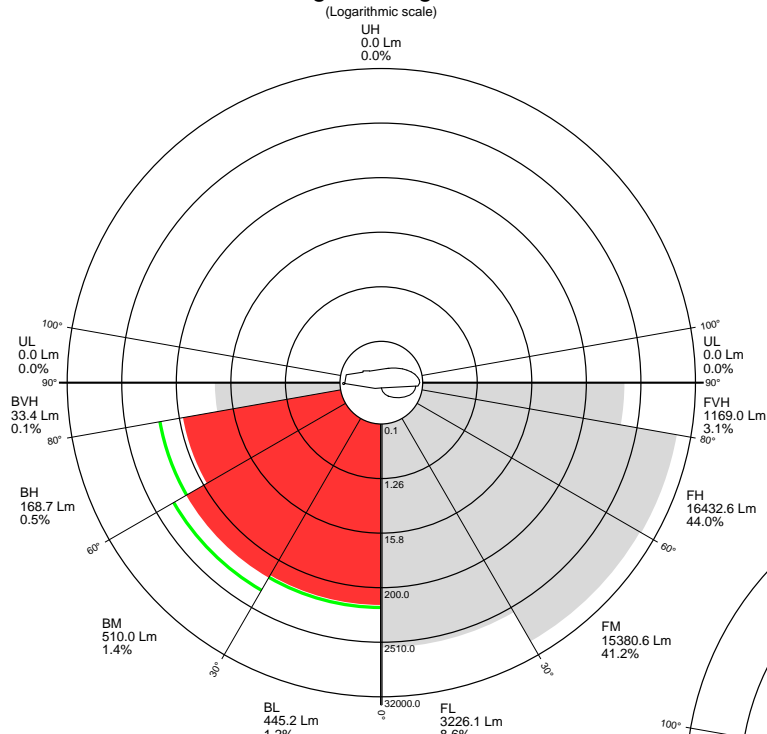
ISSUE DATE: 04/05/16

PREPARED FOR: RAB LIGHTING INC.

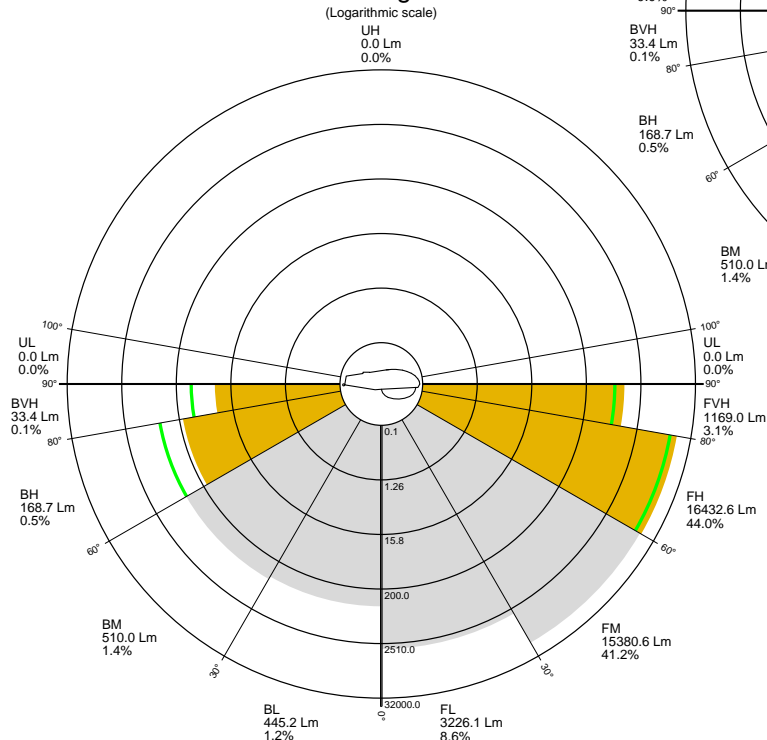
PAGE: 6 OF 9

DATE SAMPLE TESTED: 04/05/16

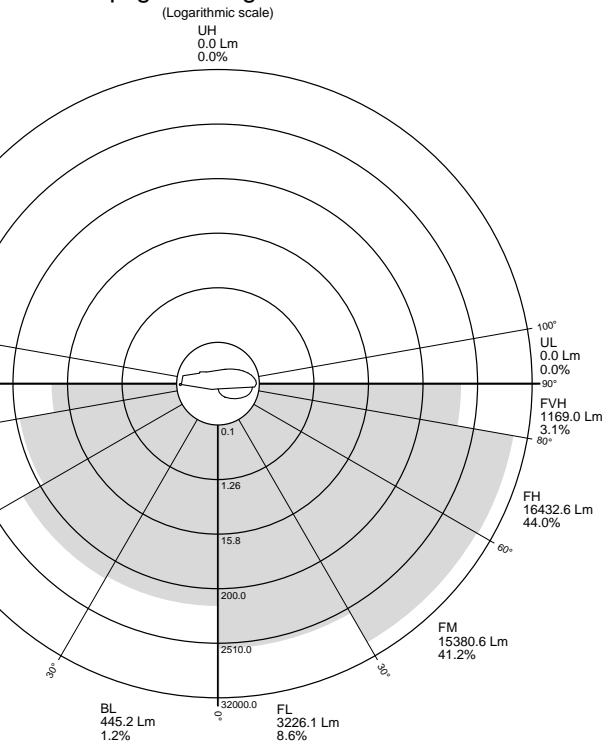
### Backlight Rating Details



### Glare Rating Details



### Uplight Rating Details



REPORT NUMBER: RAB01822  
 ISSUE DATE: 04/05/16  
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 7 OF 9  
 DATE SAMPLE TESTED: 04/05/16

### CANDELA TABULATION

	STREET SIDE	LATERAL ANGLE									
		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	85.	98.	79.	120.	206.	265.	266.	196.	117.	107.
	85.0	1283.	1435.	1263.	1700.	1827.	1785.	1394.	1127.	688.	188.
	82.5	4875.	5159.	4630.	4242.	4339.	4935.	4052.	3452.	1805.	455.
V	80.0	7247.	7898.	8779.	7757.	9406.	10429.	8068.	6384.	3412.	1412.
E	77.5	15689.	16400.	17255.	16318.	16793.	15770.	12199.	9227.	5370.	2423.
R	75.0	22447.	24519.	24218.	20674.	16927.	17463.	15250.	11140.	7478.	3563.
T	72.5	21747.	21259.	24065.	21595.	18430.	18545.	15681.	12760.	9343.	3929.
I	70.0	18959.	19065.	22473.	21745.	20945.	20163.	16525.	13787.	10739.	5053.
C	67.5	18646.	18670.	21658.	24142.	23556.	20550.	17050.	14769.	10688.	5927.
A	65.0	20667.	20145.	23376.	25862.	25520.	22566.	16942.	14403.	11282.	6321.
L	62.5	22164.	21384.	24732.	27616.	27941.	23696.	16821.	13559.	11530.	6796.
	62.0<	22254.	21310.	25131.	27859.	28363.	23568.	16760.	13456.	11492.	6885.
A	60.0	23191.	21872.	25568.	28208.	26918.	22193.	16577.	13253.	10939.	7145.
N	57.5	24988.	23946.	26343.	26433.	23275.	19842.	15840.	13022.	10722.	7307.
G	55.0	23222.	23161.	24104.	22535.	21184.	18006.	15037.	12401.	10506.	7396.
L	52.5	20024.	19301.	20802.	19517.	18710.	16419.	14058.	11772.	9795.	7389.
E	50.0	16983.	16608.	17308.	17708.	17081.	15240.	13538.	11328.	9479.	7368.
	47.5	14500.	14514.	14938.	16631.	15493.	14459.	12702.	10835.	9253.	7376.
	45.0	13827.	13474.	13931.	14857.	14609.	13396.	11971.	10405.	9160.	7369.
	42.5	13375.	12783.	12875.	13582.	13515.	12078.	11140.	9932.	8985.	7127.
	40.0	12761.	12375.	12386.	12851.	12307.	11448.	10417.	9550.	8638.	6743.
	37.5	12518.	12264.	12076.	11923.	11339.	10794.	10008.	9284.	8460.	6705.
	35.0	11828.	11623.	11446.	11065.	10618.	10292.	9907.	9075.	8164.	6333.
	30.0	10197.	10177.	10157.	9649.	9805.	9687.	9480.	9022.	8030.	6067.
	25.0	9434.	9364.	9346.	9043.	8788.	8933.	8708.	8557.	7591.	5838.
	20.0	8915.	8888.	8908.	8692.	8388.	7942.	7829.	7462.	6215.	4776.
	15.0	8330.	8369.	8406.	8353.	8153.	7799.	7205.	6422.	5398.	4240.
	10.0	7733.	7698.	7711.	7613.	7440.	6915.	6333.	5623.	4822.	4091.
	5.0	5816.	5727.	5722.	5576.	5443.	5191.	4921.	4626.	4358.	4020.
	0.0	3682.	3682.	3682.	3682.	3682.	3682.	3682.	3682.	3682.	3682.
						PLANE OF MAXIMUM CANDELA					
						CONE OF MAXIMUM CANDELA					

REPORT NUMBER: RAB01822  
 ISSUE DATE: 04/05/16  
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 8 OF 9  
 DATE SAMPLE TESTED: 04/05/16

### 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	92.	62.	64.	66.	67.	67.	67.	67.	66.	65.	65.
85.0	125.	70.	66.	66.	65.	65.	63.	64.	63.	62.	61.
82.5	228.	83.	69.	66.	64.	63.	61.	60.	59.	58.	58.
V 80.0	842.	106.	73.	66.	62.	60.	58.	57.	56.	54.	54.
E 77.5	1388.	157.	76.	66.	60.	58.	56.	55.	53.	51.	51.
R 75.0	1886.	217.	81.	68.	59.	56.	54.	53.	52.	50.	50.
T 72.5	2206.	278.	94.	75.	59.	55.	53.	52.	51.	49.	48.
I 70.0	2700.	384.	107.	80.	60.	56.	53.	53.	51.	49.	48.
C 67.5	3054.	496.	119.	91.	61.	56.	54.	53.	51.	49.	49.
A 65.0	3192.	616.	132.	122.	63.	57.	54.	53.	52.	50.	49.
L 62.5	3460.	804.	150.	143.	66.	58.	55.	54.	53.	51.	50.
62.0<<	3514.	852.	154.	183.	66.	58.	55.	54.	53.	51.	50.
A 60.0	3689.	1067.	174.	162.	70.	59.	56.	55.	54.	52.	51.
N 57.5	3976.	1341.	203.	151.	73.	61.	57.	57.	55.	53.	53.
G 55.0	4219.	1581.	238.	160.	80.	62.	58.	58.	56.	54.	53.
L 52.5	4477.	1858.	285.	123.	133.	64.	60.	59.	58.	55.	55.
E 50.0	4716.	2112.	331.	131.	88.	67.	61.	60.	59.	57.	56.
47.5	4836.	2279.	397.	134.	88.	69.	63.	61.	60.	58.	58.
45.0	4958.	2467.	425.	156.	102.	72.	64.	62.	61.	60.	59.
42.5	4858.	2654.	517.	163.	113.	76.	67.	64.	63.	62.	61.
40.0	4695.	2809.	612.	184.	125.	79.	71.	67.	66.	64.	64.
37.5	4705.	3082.	669.	204.	130.	86.	74.	70.	68.	66.	66.
35.0	4562.	3372.	734.	272.	125.	97.	77.	73.	71.	69.	68.
30.0	4810.	4153.	1127.	454.	164.	121.	89.	81.	78.	75.	74.
25.0	4644.	4101.	1500.	572.	305.	145.	115.	97.	90.	85.	83.
20.0	3984.	3377.	1979.	1046.	432.	288.	199.	125.	106.	93.	92.
15.0	3741.	3220.	2352.	1434.	882.	530.	396.	320.	267.	207.	211.
10.0	3753.	3428.	2826.	2275.	1634.	1193.	921.	731.	623.	563.	584.
5.0	3849.	3679.	3315.	3019.	2773.	2546.	2348.	2098.	2011.	1930.	1977.
0.0	3682.	3682.	3682.	3682.	3682.	3682.	3682.	3682.	3682.	3682.	3682.

CONE OF MAXIMUM CANDELA



REPORT NUMBER: RAB01822  
 ISSUE DATE: 04/05/16  
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 9 OF 9  
 DATE SAMPLE TESTED: 04/05/16

### 5-DEGREE ZONAL LUMEN SUMMARY

0- 5	90
5- 10	282
10- 15	483
15- 20	689
20- 25	926
25- 30	1201
30- 35	1483
35- 40	1802
40- 45	2191
45- 50	2697
50- 55	3424
55- 60	4293
60- 65	4685
65- 70	4473
70- 75	4252
75- 80	3192
80- 85	1080
85- 90	123
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	372
0- 20	1544
0- 30	3671
0- 40	6956
0- 50	11845
0- 60	19562
0- 70	28720
0- 80	36163
0- 90	37366
0-100	37366
0-110	37366
0-120	37366
0-130	37366
0-140	37366
0-150	37366
0-160	37366
0-170	37366
0-180	37366

REPORT NUMBER: RAB01823  
DATE: 4/4/2016  
PREPARED FOR: RAB LIGHTING INC.  
CATALOG NUMBER: ALED4T360/D10 - ALED4T360SF/D10 - WPLED4T360/D10 - WPLED4T360FX/D10 (TYPE IV)

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: CAST FINNED METAL HOUSING, 4 CIRCUIT BOARDS EACH WITH 1 LED, MOLDED 2-PIECE PLASTIC REFLECTOR WITH SPECULAR FINISH AND 1 APERTURE PER LED, CLEAR FLAT GLASS LENS IN CAST BRONZE PAINTED METAL LENS FRAME.

LAMP: FOUR WHITE LIGHT EMITTING DIODES (LEDs)

DRIVER: 2X RD-G200-A2100-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 X.CAO

Approved D.WANG-MUNSON  
Lighting Engineer

REPORT NUMBER: RAB01823  
 DATE: 4/4/2016  
 PREPARED FOR: RAB LIGHTING INC.  
 CATALOG NUMBER: ALED4T360/D10 - ALED4T360SF/D10 - WPLED4T360/D10 - WPLED4T360FX/D10 (TYPE IV)

Page 2 of 4

### RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	37366 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3407
Chromaticity Ordinate y	0.3592
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2056
Chromaticity Ordinate v'	0.4877
Correlated Color Temp CCT (K)	5186
ANSI C78.377-2008 Duv	0.006
Total Radiant Flux (milliWatts)	110349 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	3.00
Input Power (Watts)	359.4
Input Power Factor (%)	99.8
Input Current THD (%)	5.9
Input Voltage THD (%)	0.5
EFFICACY (Lumens/Watt)	
	104.0
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	1.32
Input Power (Watts)	350.2
Input Power Factor (%)	96.0
Input Current THD (%)	8.8
Input Voltage THD (%)	0.2
Off-State Power (Watts)	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	71
R1 Light greyish red	68
R2 Dark greyish yellow	75
R3 Strong yellowish green	81
R4 Moderate yellowish green	72
R5 Light bluish green	69
R6 Light blue	67
R7 Light violet	80
R8 Light reddish purple	55
R9 Strong red	-38
R10 Strong yellow	41
R11 Strong green	69
R12 Strong blue	44
R13 Light yellowish pink (skin)	68
R14 Moderate olive green (leaf)	89

### \*NOTE:

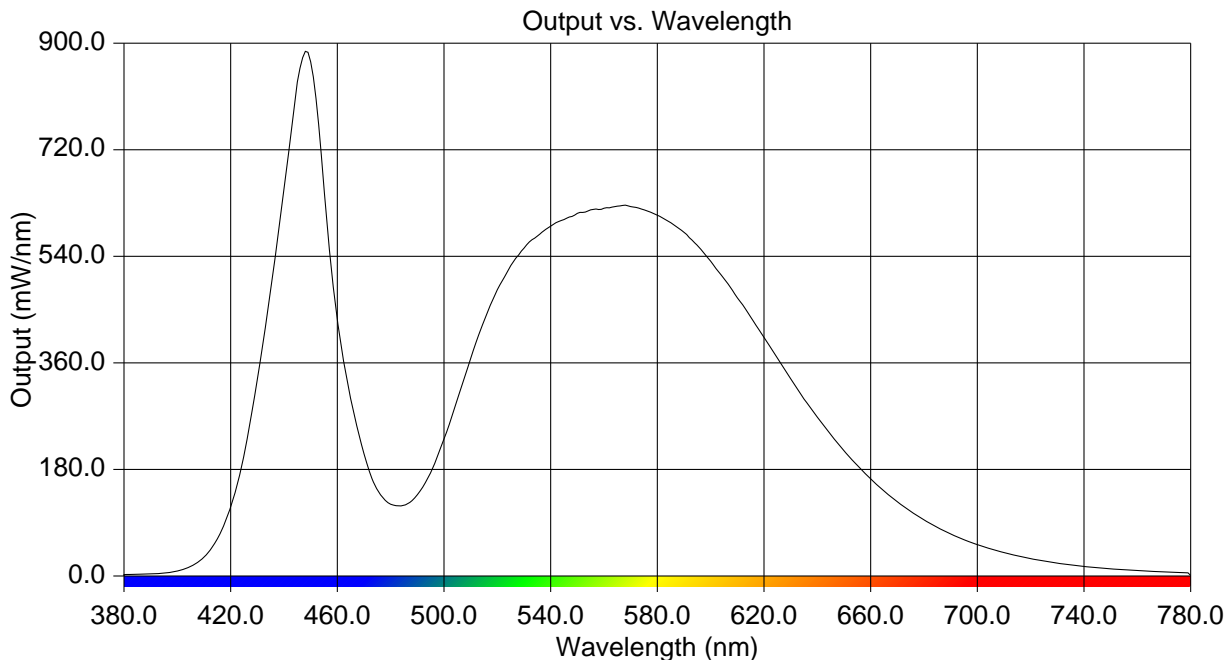
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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: RAB01823  
 DATE: 4/4/2016  
 PREPARED FOR: RAB LIGHTING INC.  
 CATALOG NUMBER: ALED4T360/D10 - ALED4T360SF/D10 - WPLED4T360/D10 - WPLED4T360FX/D10  
 (TYPE IV)

Page 3 of 4

### RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	2.268	515	430.131	650	211.344
385	2.668	520	483.136	655	186.739
390	3.409	525	522.984	660	163.699
395	5.029	530	553.194	665	143.389
400	8.331	535	573.586	670	125.290
405	16.030	540	590.028	675	109.024
410	32.124	545	601.468	680	94.776
415	62.576	550	611.975	685	81.871
420	115.540	555	617.910	690	70.831
425	205.025	560	620.612	695	61.214
430	331.852	565	624.101	700	52.904
435	483.317	570	623.354	705	45.756
440	653.073	575	617.562	710	39.449
445	833.641	580	609.143	715	33.948
450	867.743	585	596.550	720	29.331
455	657.130	590	580.250	725	25.209
460	430.856	595	557.829	730	21.752
465	300.333	600	531.232	735	18.740
470	206.214	605	501.662	740	16.179
475	145.536	610	469.471	745	13.965
480	121.077	615	437.051	750	12.157
485	119.328	620	402.422	755	10.449
490	137.094	625	368.568	760	9.105
495	174.416	630	332.805	765	7.838
500	231.366	635	298.596	770	6.858
505	297.531	640	268.104	775	5.995
510	367.038	645	238.955	780	0.898



REPORT NUMBER: RAB01823  
DATE: 4/4/2016  
PREPARED FOR: RAB LIGHTING INC.  
CATALOG NUMBER: ALED4T360/D10 - ALED4T360SF/D10 - WPLED4T360/D10 - WPLED4T360FX/D10 (TYPE IV)

Page 4 of 4

## CIE Chromaticity Diagram

