

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 15 foot mounting height.



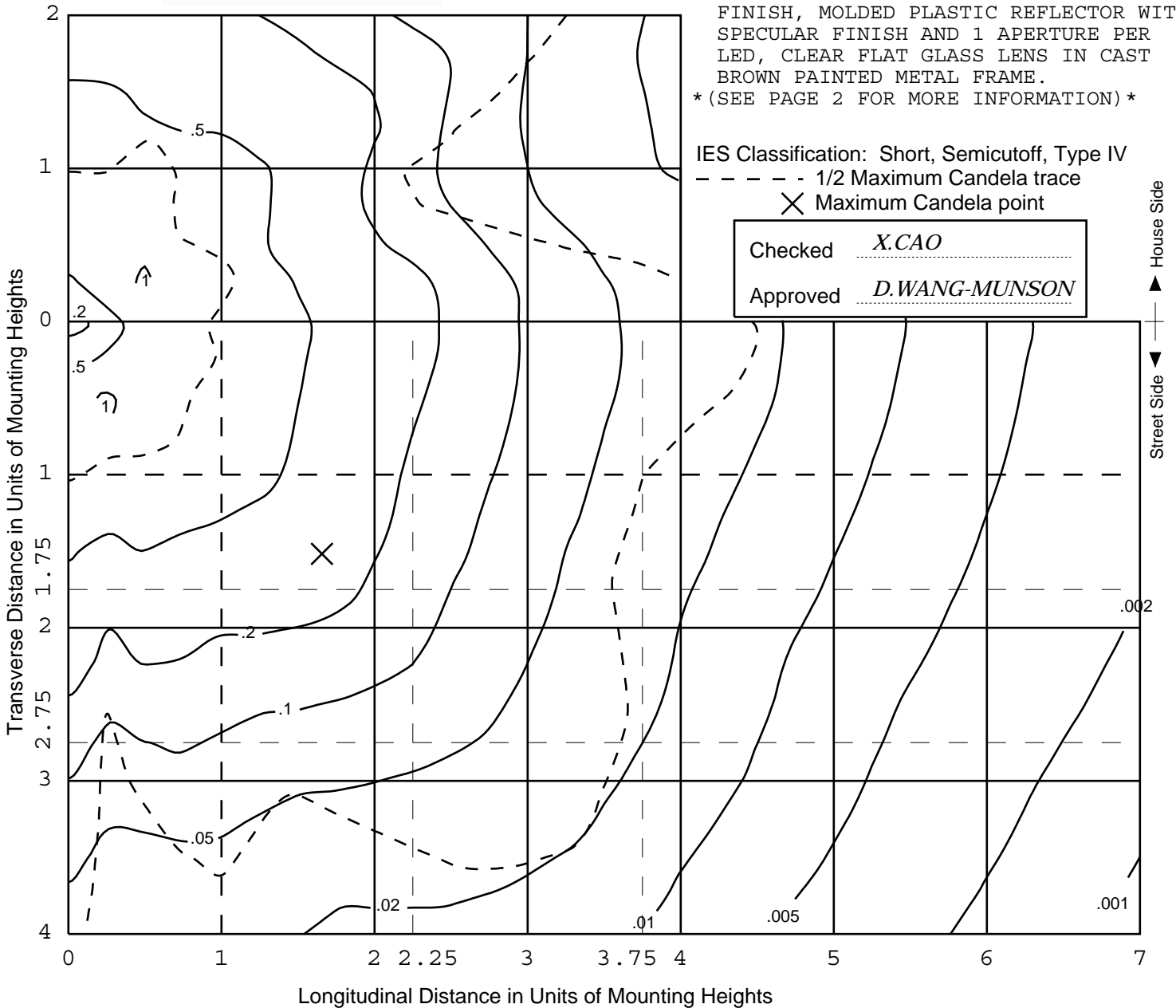
REPORT NUMBER: RAB01048
 ISSUE DATE: 08/03/15 PAGE: 1 OF 9
 DATE SAMPLE TESTED: 08/03/15
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: ALED5T26 (TYPE V - Short - Semicutoff)
 LUMINAIRE: CAST BROWN PAINTED METAL POSTTOP FITTER WITH 3 FABRICATED BROWN PAINTED METAL VERTICAL POSTS, CAST 2-PIECE BROWN PAINTED FINNED METAL HOUSING, 4 CAST METAL HEAT SINKS/CIRCUIT BOARD MOUNTING BRACKETS, 4 CIRCUIT BOARDS EACH WITH 1 LED AND MOLDED PLASTIC CIRCUIT BOARD PERIMETER OVERLAY WITH SPECULAR FINISH, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH AND 1 APERTURE PER LED, CLEAR FLAT GLASS LENS IN CAST BROWN PAINTED METAL FRAME.
 (SEE PAGE 2 FOR MORE INFORMATION)

IES Classification: Short, Semicutoff, Type IV

--- 1/2 Maximum Candela trace

X Maximum Candela point

Checked X.CAO
 Approved D.WANG-MUNSON



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ADDITIONAL INFORMATION

LAMPS: FOUR WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDs), AIMED AT THE HORIZON.

TOTAL INPUT WATTS = 29.526 AT 277.0 VOLTS

LED DRIVERS: RDD-U26-A0720

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE TO THE LED DRIVERS.

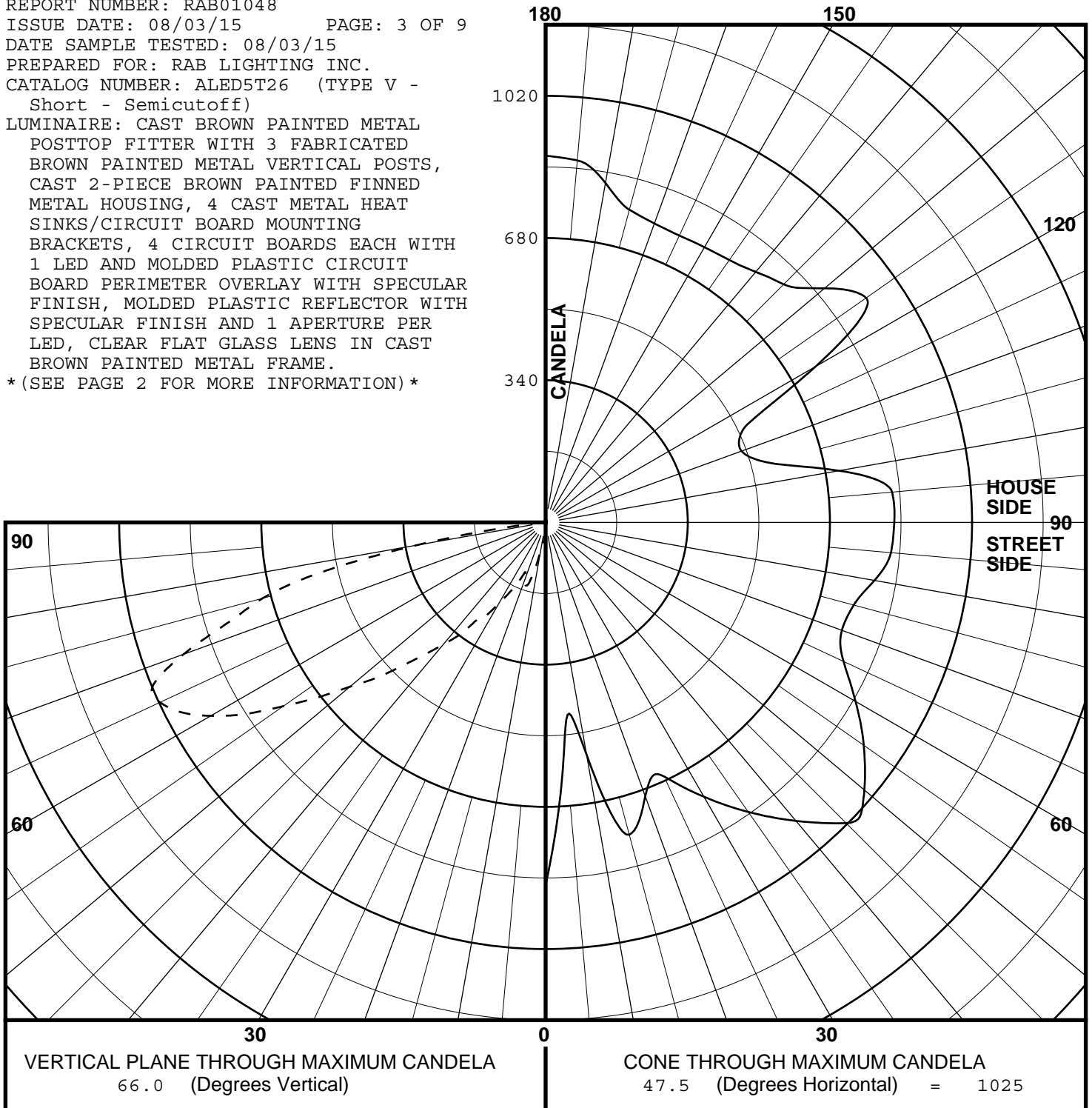
TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 28.25 FEET

ACCREDITED LABORATORY CODE 201058-0

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

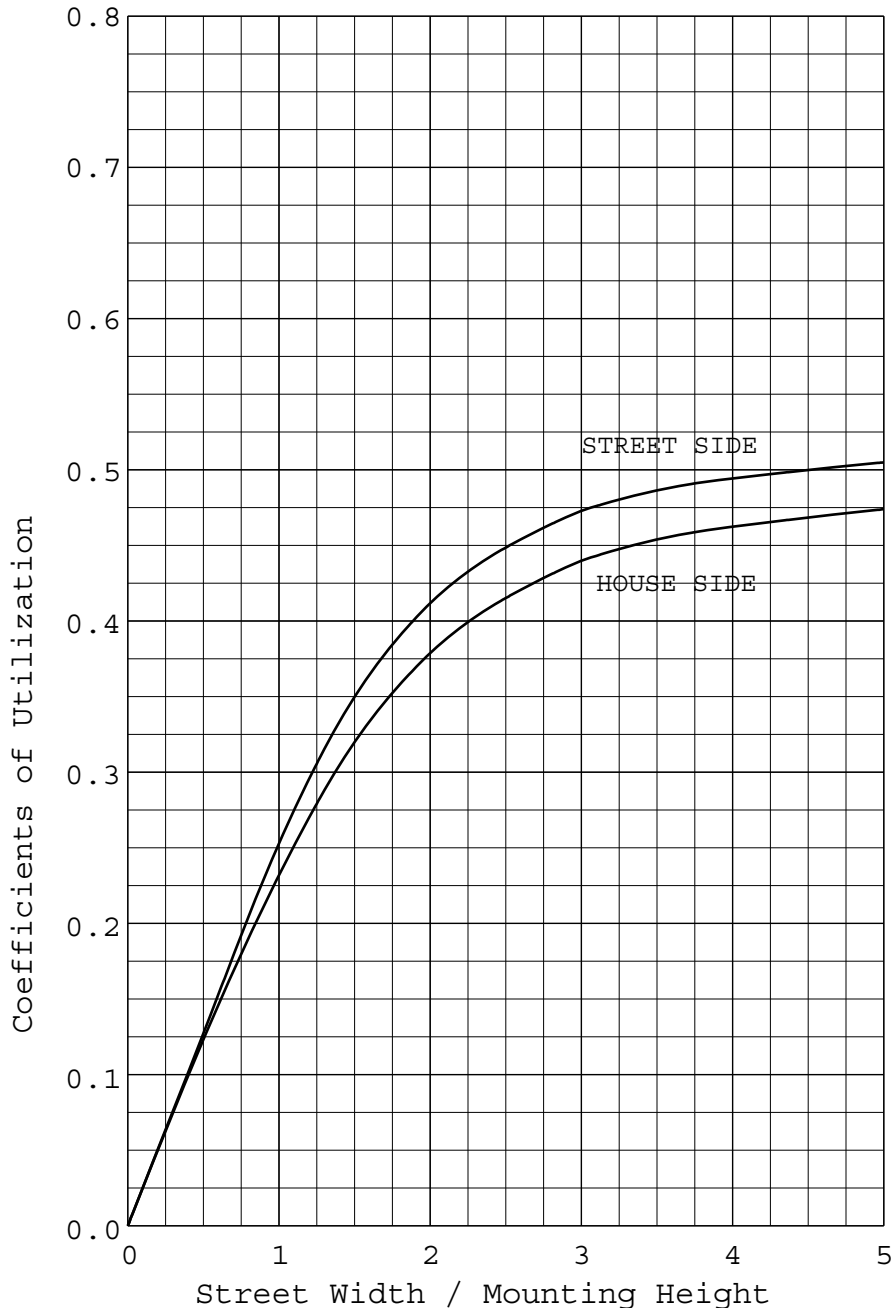
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 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: ALED5T26 (TYPE V -
 Short - Semicutoff)
 LUMINAIRE: CAST BROWN PAINTED METAL
 POSTTOP FITTER WITH 3 FABRICATED
 BROWN PAINTED METAL VERTICAL POSTS,
 CAST 2-PIECE BROWN PAINTED FINNED
 METAL HOUSING, 4 CAST METAL HEAT
 SINKS/CIRCUIT BOARD MOUNTING
 BRACKETS, 4 CIRCUIT BOARDS EACH WITH
 1 LED AND MOLDED PLASTIC CIRCUIT
 BOARD PERIMETER OVERLAY WITH SPECULAR
 FINISH, MOLDED PLASTIC REFLECTOR WITH
 SPECULAR FINISH AND 1 APERTURE PER
 LED, CLEAR FLAT GLASS LENS IN CAST
 BROWN PAINTED METAL FRAME.
 *(SEE PAGE 2 FOR MORE INFORMATION) *



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COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	1412.	51.4
DOWNWARD HOUSE SIDE	1328.	48.3
DOWNWARD TOTAL	2740.	99.7
UPWARD STREET SIDE	4.	0.1
UPWARD HOUSE SIDE	5.	0.2
UPWARD TOTAL	9.	0.3
TOTAL FLUX	2748.	100.0
TOTAL INPUT WATTS = 29.5		
EFFICACY = 93.2 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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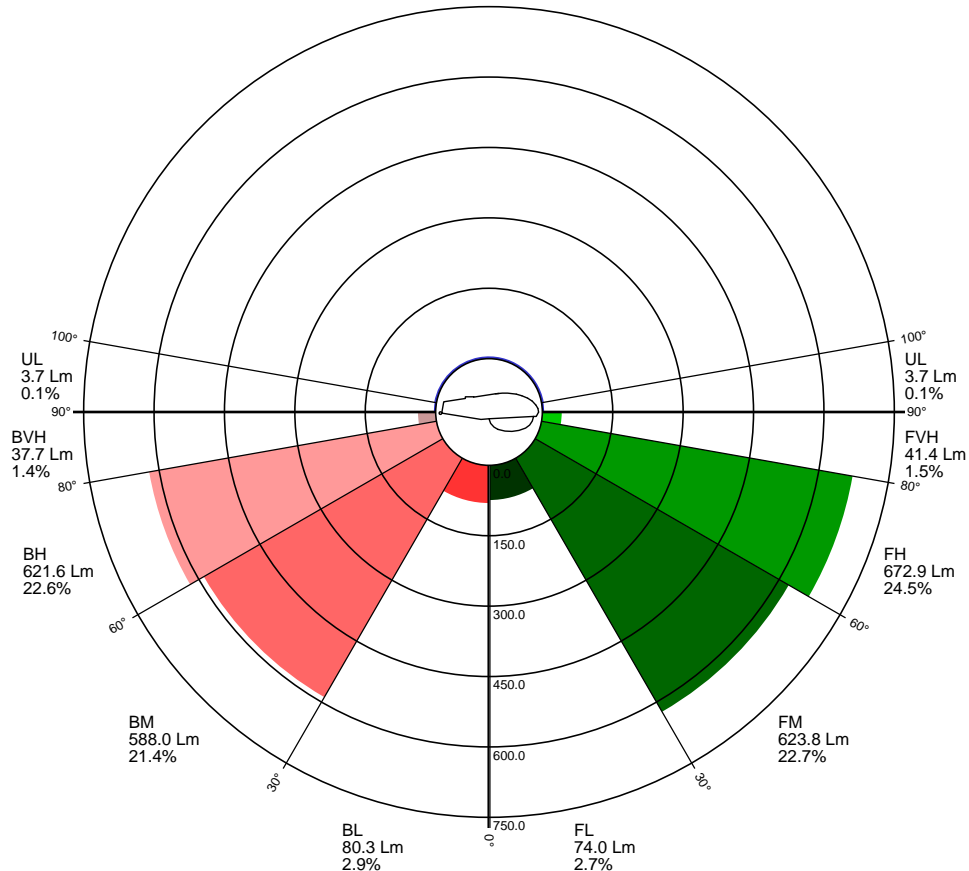
PAGE: 5 OF 9
DATE SAMPLE TESTED: 08/03/15

BUG Rating:				B2 U1 G1		
Zonal Summary		Lumens	% of Fixture	Zone Ratings		
				B	U	G
Forward		1412	51.4			
FL	(0° - 30°)	74.0	2.7			
FM	(30° - 60°)	623.8	22.7			
FH	(60° - 80°)	672.9	24.5			G1
FVH	(80° - 90°)	41.4	1.5			G1
Backward		1328	48.3			
BL	(0° - 30°)	80.3	2.9	B0		
BM	(30° - 60°)	588.0	21.4	B1		
BH	(60° - 80°)	621.6	22.6	B2		G0
BVH	(80° - 90°)	37.7	1.4			G1
Upward		9	0.3			
UL	(90° - 100°)	3.7	0.1		U1	
UH	(100° - 180°)	4.9	0.2		U1	
Trapped Light		0	0.0			
Total Flux		2748	100.0			

Zonal Lumen Summary

(Linear scale)

UH
4.9 Lm
0.2%

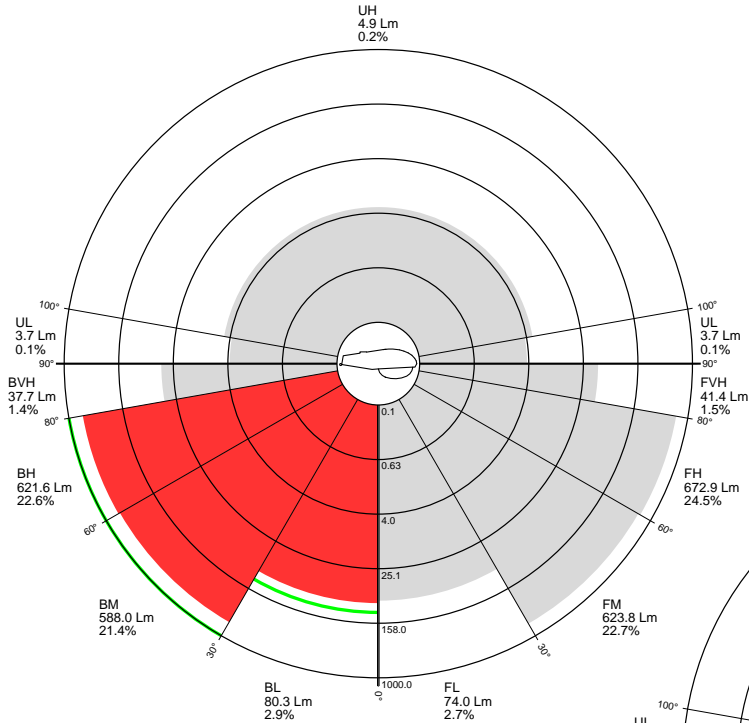


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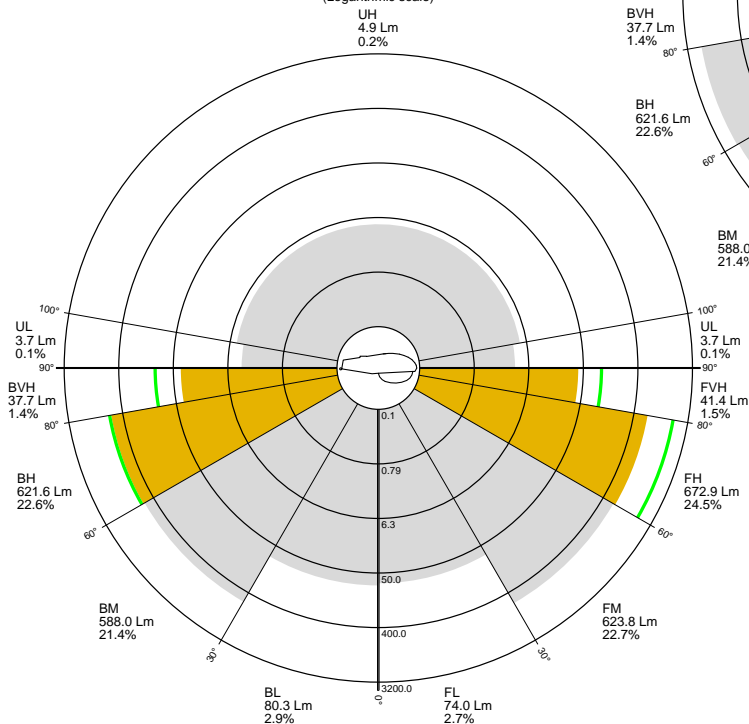
Backlight Rating Details

(Logarithmic scale)



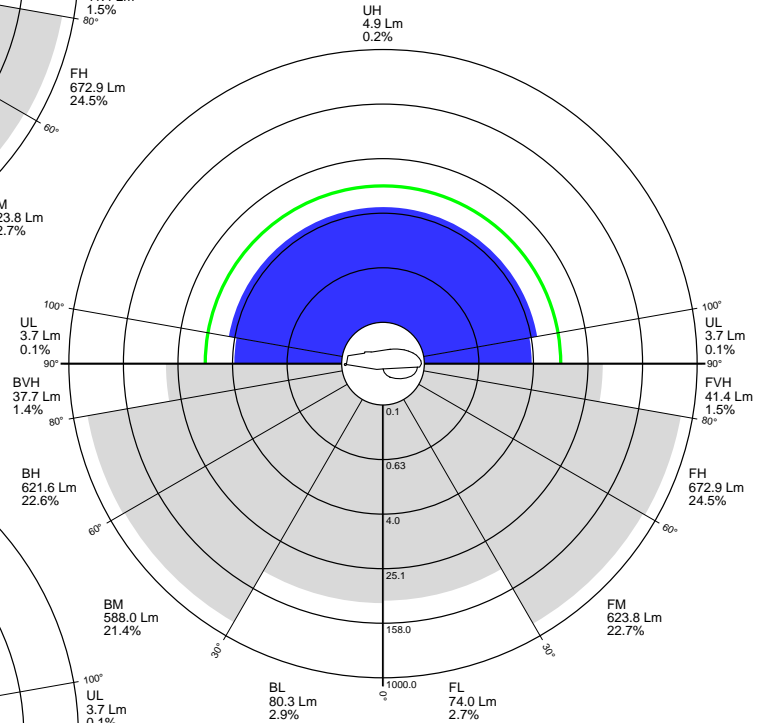
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)



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CANDELA TABULATION

	STREET SIDE	LATERAL ANGLE										
		0.0	5.0	15.0	25.0	35.0	45.0	47.5	55.0	65.0	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.	1.	0.	0.	0.	0.	0.	0.	1.	1.	0.
	115.0	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
	105.0	3.	4.	4.	3.	3.	2.	2.	2.	2.	3.	3.
	95.0	3.	4.	4.	3.	3.	4.	3.	3.	3.	3.	3.
	90.0	3.	3.	3.	3.	3.	4.	4.	5.	5.	4.	3.
	87.5	9.	6.	6.	5.	6.	8.	8.	8.	8.	7.	8.
	85.0	24.	18.	18.	16.	20.	29.	28.	25.	23.	25.	30.
	82.5	150.	101.	121.	106.	110.	122.	112.	112.	120.	147.	173.
V	80.0	357.	253.	271.	229.	316.	347.	315.	309.	279.	307.	341.
E	77.5	504.	378.	403.	318.	492.	582.	550.	507.	404.	426.	508.
R	75.0	602.	412.	522.	449.	596.	720.	701.	641.	548.	538.	585.
T	72.5	677.	455.	609.	548.	688.	829.	796.	714.	655.	633.	637.
I	70.0	729.	482.	685.	611.	809.	951.	922.	822.	715.	717.	721.
C	67.5	832.	517.	748.	654.	855.	1020.	1016.	910.	772.	748.	805.
A	66.0<<	867.	522.	773.	670.	845.	1017.	1025.	929.	786.	763.	829.
L	65.0	843.	485.	763.	682.	838.	1007.	1018.	939.	788.	751.	801.
	62.5	777.	435.	758.	695.	853.	937.	983.	910.	793.	748.	762.
A	60.0	750.	431.	757.	716.	814.	853.	925.	879.	793.	744.	744.
N	57.5	719.	428.	739.	717.	759.	796.	853.	841.	772.	728.	726.
G	55.0	684.	416.	716.	702.	703.	716.	766.	793.	736.	708.	698.
L	52.5	665.	408.	696.	684.	632.	652.	687.	746.	689.	671.	681.
E	50.0	613.	392.	659.	648.	584.	593.	611.	689.	645.	618.	645.
	47.5	556.	361.	613.	599.	519.	546.	551.	628.	587.	565.	589.
	45.0	489.	330.	561.	557.	468.	486.	485.	565.	539.	513.	533.
	42.5	426.	301.	517.	513.	429.	433.	428.	506.	496.	475.	483.
	40.0	380.	281.	483.	471.	382.	363.	381.	408.	439.	449.	458.
	37.5	370.	278.	442.	422.	361.	312.	339.	323.	371.	409.	447.
	35.0	342.	270.	405.	396.	366.	304.	281.	277.	320.	371.	410.
	30.0	292.	275.	384.	379.	354.	246.	224.	215.	245.	319.	381.
	25.0	227.	231.	327.	310.	281.	186.	162.	107.	167.	247.	271.
	20.0	151.	176.	226.	206.	176.	149.	151.	136.	134.	137.	144.
	15.0	100.	102.	114.	117.	131.	136.	145.	137.	123.	104.	83.
	10.0	44.	45.	50.	58.	66.	65.	68.	67.	61.	52.	44.
	5.0	29.	29.	30.	33.	39.	46.	45.	42.	34.	31.	30.
	0.0	23.	23.	23.	23.	23.	23.	23.	23.	23.	23.	23.
								PLANE OF MAXIMUM CANDELA				
								CONE OF MAXIMUM CANDELA				

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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.	1.	1.
135.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.0	0.	0.	1.	1.	1.	0.	0.	0.	0.	1.	1.
115.0	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
105.0	2.	3.	4.	4.	4.	4.	3.	3.	2.	2.	2.
95.0	3.	3.	4.	4.	4.	4.	3.	3.	4.	3.	3.
90.0	3.	3.	3.	3.	3.	3.	3.	3.	4.	5.	5.
87.5	8.	7.	5.	5.	6.	7.	5.	5.	8.	11.	14.
85.0	28.	25.	17.	15.	20.	23.	22.	21.	24.	29.	33.
82.5	174.	165.	83.	72.	107.	88.	92.	113.	137.	157.	176.
V 80.0	367.	306.	180.	188.	304.	264.	249.	254.	299.	351.	366.
E 77.5	509.	448.	269.	292.	489.	439.	403.	375.	429.	541.	560.
R 75.0	579.	540.	325.	379.	603.	523.	517.	524.	560.	635.	672.
T 72.5	603.	596.	394.	441.	689.	563.	576.	629.	642.	678.	698.
I 70.0	728.	705.	474.	472.	809.	689.	680.	700.	721.	749.	766.
C 67.5	802.	795.	523.	501.	920.	788.	755.	740.	774.	855.	880.
A 66.0<<	834.	832.	552.	519.	936.	805.	766.	757.	774.	869.	877.
L 65.0	822.	806.	549.	523.	926.	798.	767.	747.	754.	837.	843.
62.5	779.	768.	561.	545.	880.	779.	762.	723.	750.	792.	794.
A 60.0	755.	746.	586.	562.	849.	773.	743.	681.	736.	761.	758.
N 57.5	728.	715.	599.	561.	814.	762.	709.	619.	715.	736.	723.
G 55.0	704.	673.	598.	552.	772.	736.	641.	543.	686.	705.	695.
L 52.5	693.	642.	595.	545.	724.	692.	553.	484.	655.	680.	672.
E 50.0	654.	581.	565.	535.	670.	638.	485.	431.	608.	639.	637.
47.5	604.	502.	514.	514.	624.	593.	419.	394.	560.	585.	581.
45.0	544.	424.	448.	488.	567.	530.	367.	356.	509.	525.	524.
42.5	489.	355.	393.	465.	519.	476.	330.	336.	470.	474.	473.
40.0	458.	315.	350.	434.	463.	429.	303.	318.	437.	440.	432.
37.5	446.	303.	311.	403.	433.	405.	291.	293.	380.	403.	397.
35.0	403.	280.	278.	375.	401.	384.	281.	284.	331.	352.	366.
30.0	330.	277.	270.	366.	369.	360.	305.	273.	265.	333.	327.
25.0	233.	229.	243.	297.	307.	306.	280.	209.	218.	283.	282.
20.0	123.	126.	172.	225.	231.	231.	212.	159.	147.	183.	213.
15.0	78.	78.	96.	136.	147.	151.	146.	123.	106.	100.	101.
10.0	43.	45.	52.	58.	63.	57.	55.	49.	49.	49.	48.
5.0	30.	30.	30.	33.	35.	37.	37.	34.	33.	32.	32.
0.0	23.	23.	23.	23.	23.	23.	23.	23.	23.	23.	23.

CONE OF MAXIMUM CANDELA

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5-DEGREE ZONAL LUMEN SUMMARY

0- 5	1
5- 10	3
10- 15	11
15- 20	24
20- 25	45
25- 30	71
30- 35	97
35- 40	124
40- 45	166
45- 50	220
50- 55	277
55- 60	328
60- 65	367
65- 70	381
70- 75	322
75- 80	225
80- 85	74
85- 90	5
90- 95	2
95-100	2
100-105	2
105-110	1
110-115	1
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	4
0- 20	39
0- 30	154
0- 40	375
0- 50	760
0- 60	1366
0- 70	2114
0- 80	2661
0- 90	2740
0-100	2743
0-110	2747
0-120	2748
0-130	2748
0-140	2748
0-150	2748
0-160	2748
0-170	2748
0-180	2748

REPORT NUMBER: RAB01049
 DATE: 7/31/2015
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: ALED5T26 (TYPE V - Short - Semicutoff)

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: CAST BROWN PAINTED METAL POSTTOP FITTER WITH 3 FABRICATED BROWN PAINTED METAL VERTICAL POSTS, CAST 2-PIECE BROWN PAINTED FINNED METAL HOUSING, 4 CAST METAL HEAT SINKS/CIRCUIT BOARD MOUNTING BRACKETS, 4 CIRCUIT BOARDS EACH WITH 1 LED AND MOLDED PLASTIC CIRCUIT BOARD PERIMETER OVERLAY WITH SPECULAR FINISH, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH AND 1 APERTURE PER LED, CLEAR FLAT GLASS LENS IN CAST BROWN PAINTED METAL FRAME.

LAMP: FOUR WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDs), AIMED AT THE HORIZON.

DRIVER: RDD-U26-A0720

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:	CHROMA PROGRAMMABLE AC POWER SOURCE MODEL 61602	Calibration Due: N/A
	CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202	3/9/16
	OCEAN OPTICS QE65PRO Spectroradiometer	7/24/16
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	7/24/16

OBJECT OF TEST: Measure the Absolute Flux in lumens*, Total Radiant Flux*, Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Indices (CRI_a,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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RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	2748 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3491
Chromaticity Ordinate y	0.3832
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2024
Chromaticity Ordinate v'	0.4998
Correlated Color Temp CCT (K)	4962
ANSI C78.377-2008 Duv	0.014
Total Radiant Flux (milliWatts)	7726 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.243
Input Power (Watts)	28.9
Input Power Factor (%)	99.1
Input Current THD (%)	8.8
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	95.1
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.119
Input Power (Watts)	29.5
Input Power Factor (%)	89.5
Input Current THD (%)	20.1
Input Voltage THD (%)	0.2
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	68
R1 Light greyish red	62
R2 Dark greyish yellow	73
R3 Strong yellowish green	81
R4 Moderate yellowish green	65
R5 Light bluish green	62
R6 Light blue	62
R7 Light violet	84
R8 Light reddish purple	52
R9 Strong red	-48
R10 Strong yellow	36
R11 Strong green	58
R12 Strong blue	24
R13 Light yellowish pink (skin)	64
R14 Moderate olive green (leaf)	89

*NOTE:

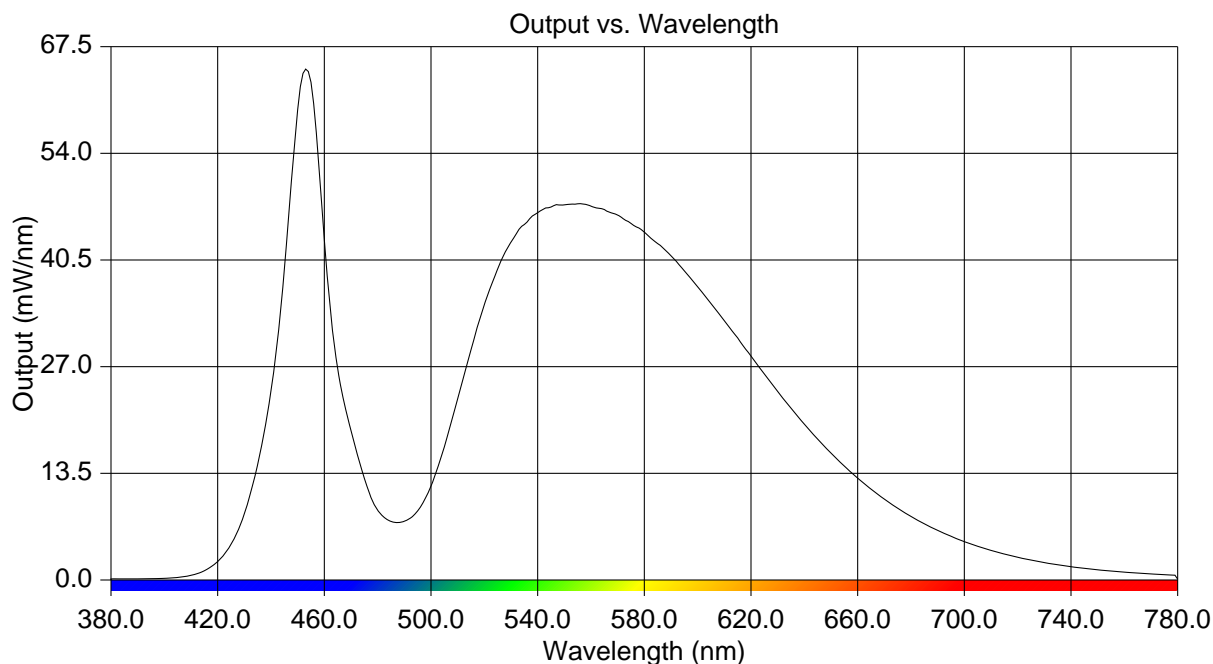
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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.

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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.135	515	29.131	650	16.051
385	0.143	520	34.844	655	14.422
390	0.145	525	39.348	660	12.909
395	0.159	530	42.756	665	11.497
400	0.205	535	44.991	670	10.233
405	0.321	540	46.489	675	9.069
410	0.581	545	47.203	680	8.046
415	1.168	550	47.477	685	7.104
420	2.332	555	47.614	690	6.267
425	4.499	560	47.317	695	5.541
430	8.353	565	46.887	700	4.858
435	14.588	570	46.167	705	4.275
440	23.831	575	45.129	710	3.741
445	39.346	580	44.057	715	3.283
450	59.514	585	42.575	720	2.873
455	62.996	590	41.027	725	2.510
460	43.057	595	39.127	730	2.201
465	26.672	600	37.114	735	1.924
470	18.918	605	34.978	740	1.679
475	12.872	610	32.819	745	1.475
480	8.836	615	30.644	750	1.292
485	7.433	620	28.370	755	1.130
490	7.424	625	26.083	760	0.992
495	8.745	630	23.799	765	0.867
500	11.875	635	21.779	770	0.760
505	16.841	640	19.739	775	0.672
510	22.960	645	17.819	780	0.103



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CIE Chromaticity Diagram

