

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 15 foot mounting height.



REPORT NUMBER: RAB01052
ISSUE DATE: 08/03/15 PAGE: 1 OF 10
DATE SAMPLE TESTED: 08/03/15
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: ALED5T26N (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.

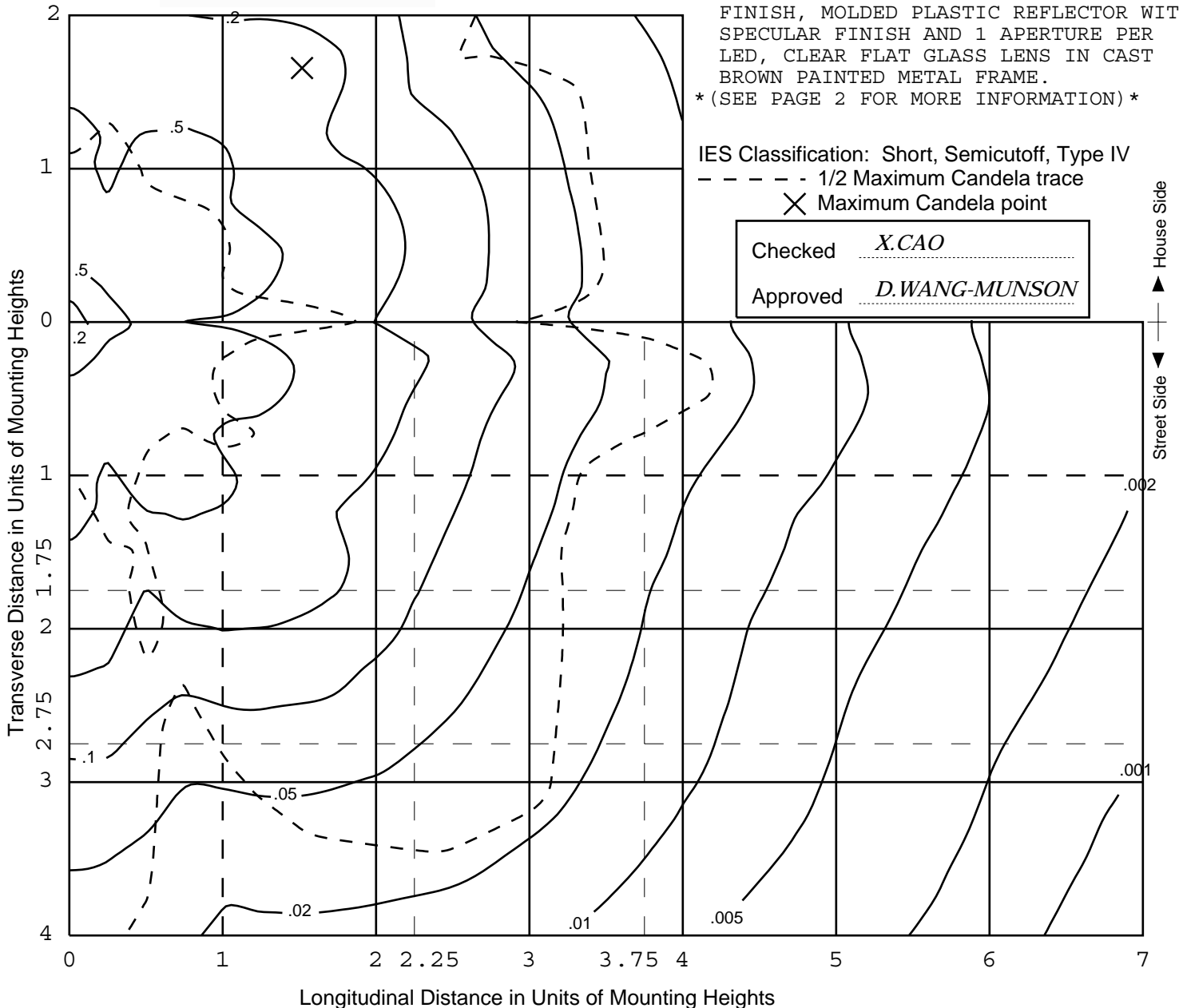
(SEE PAGE 2 FOR MORE INFORMATION)

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 = 29.145 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.

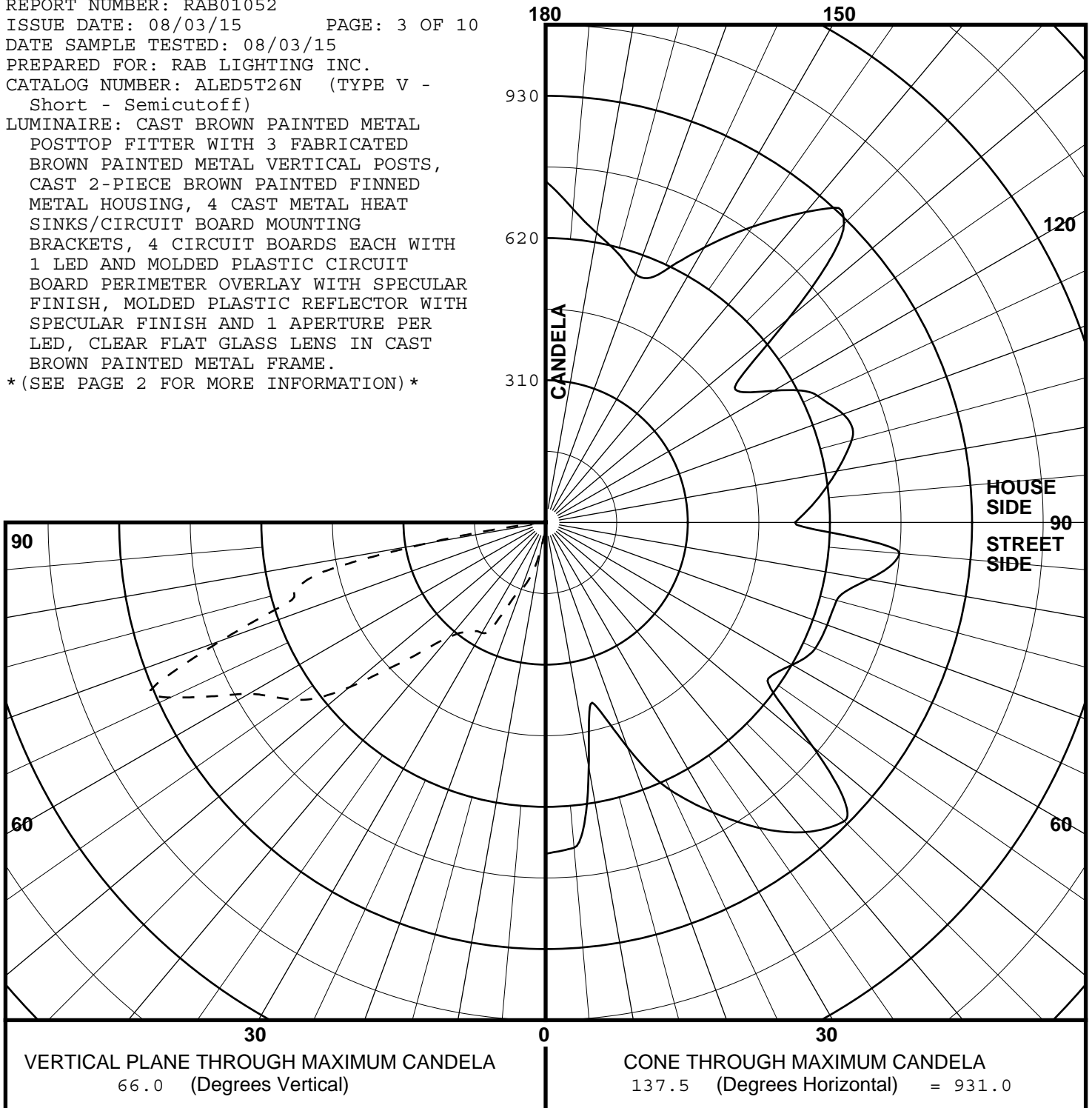
TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 28.25 FEET

ACCREDITED LABORATORY CODE 201058-0

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

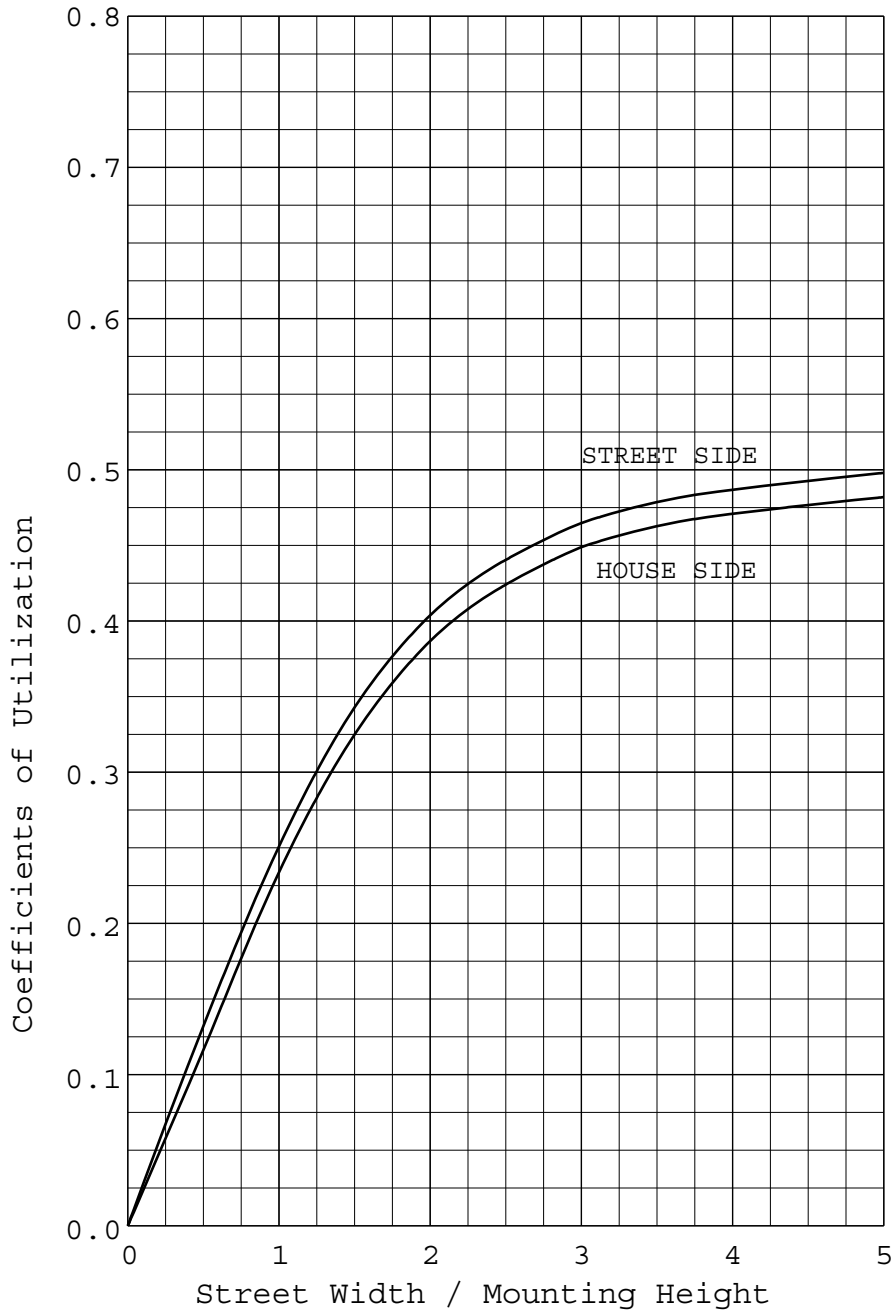
REPORT NUMBER: RAB01052
 ISSUE DATE: 08/03/15 PAGE: 3 OF 10
 DATE SAMPLE TESTED: 08/03/15
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: ALED5T26N (TYPE V -
 Short - Semicutoff)
 LUMINAIRE: CAST BROWN PAINTED METAL
 POSTTOP FITTER WITH 3 FABRICATED
 BROWN PAINTED METAL VERTICAL POSTS,
 CAST 2-PIECE 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	1185.	50.5
DOWNWARD HOUSE SIDE	1151.	49.1
DOWNWARD TOTAL	2336.	99.7
UPWARD STREET SIDE	4.	0.2
UPWARD HOUSE SIDE	4.	0.2
UPWARD TOTAL	8.	0.3
TOTAL FLUX	2344.	100.0
TOTAL INPUT WATTS = 29.1		
EFFICACY = 80.5 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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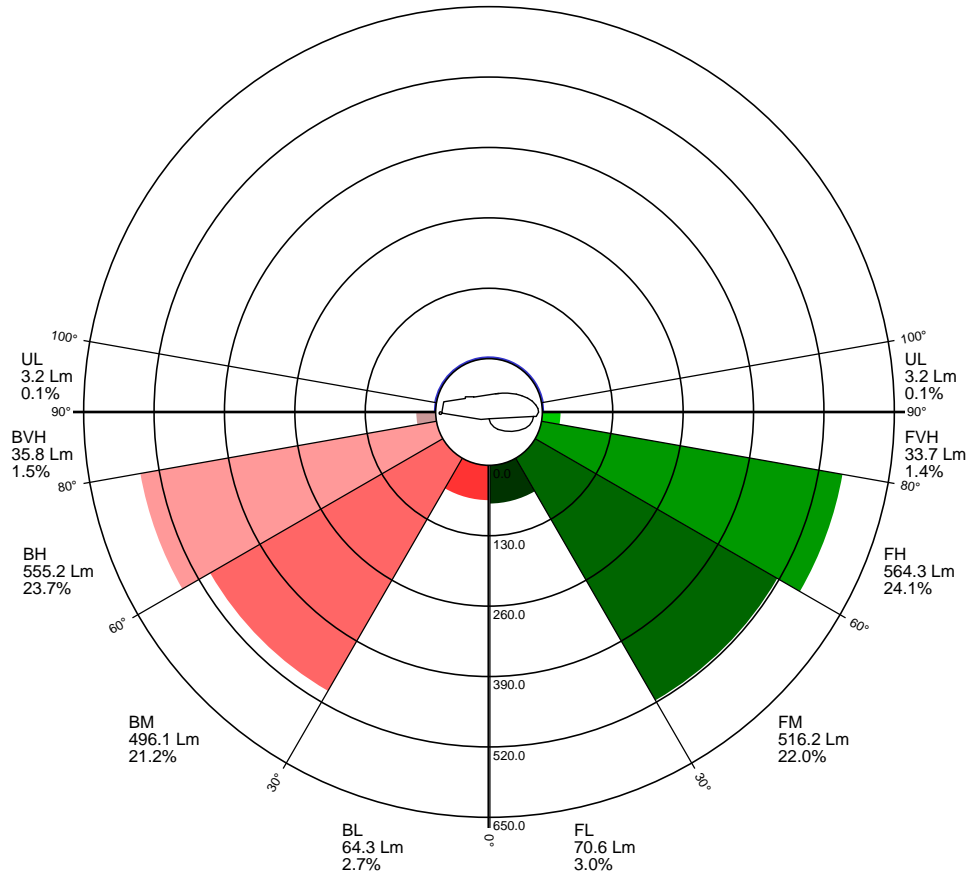
PAGE: 5 OF 10
 DATE SAMPLE TESTED: 08/03/15

BUG Rating:				B2 U1 G1		
Zonal Summary		Lumens	% of Fixture	Zone Ratings		
				B	U	G
Forward		1185	50.5			
FL	(0° - 30°)	70.6	3.0			
FM	(30° - 60°)	516.2	22.0			
FH	(60° - 80°)	564.3	24.1			G0
FVH	(80° - 90°)	33.7	1.4			G1
Backward		1151	49.1			
BL	(0° - 30°)	64.3	2.7	B0		
BM	(30° - 60°)	496.1	21.2	B1		
BH	(60° - 80°)	555.2	23.7	B2		G0
BVH	(80° - 90°)	35.8	1.5			G1
Upward		8	0.3			
UL	(90° - 100°)	3.2	0.1		U1	
UH	(100° - 180°)	4.3	0.2		U1	
Trapped Light		0	0.0			
Total Flux		2344	100.0			

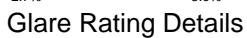
Zonal Lumen Summary

(Linear scale)

UH
4.3 Lm
0.2%



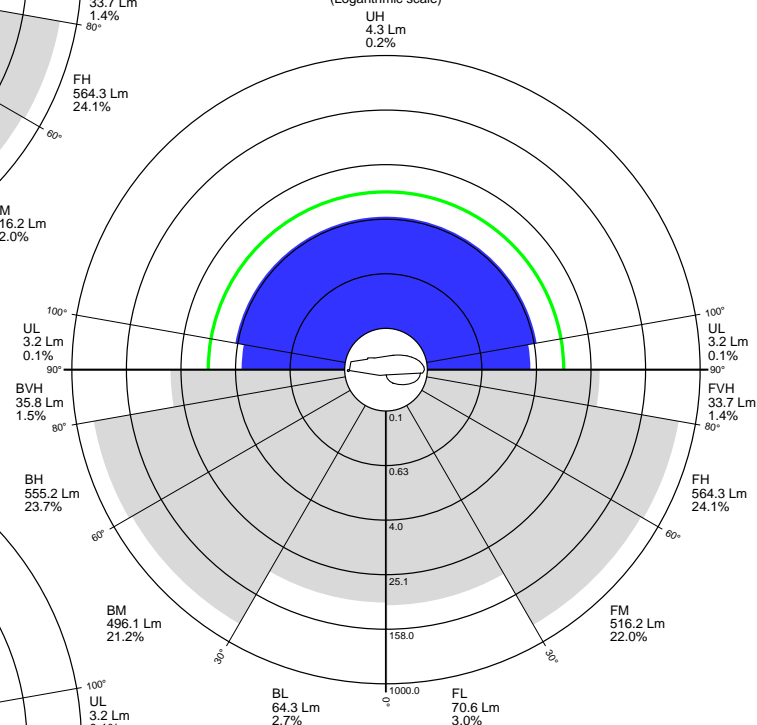
(Logarithmic scale)



(Logarithmic scale)



(Logarithmic scale)



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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.
	175.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	165.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	155.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	145.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	135.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	125.0	0.	1.	1.	1.	0.	1.	1.	0.	0. 1.
	115.0	1.	1.	1.	1.	1.	1.	1.	1.	1.
	105.0	2.	2.	3.	2.	2.	3.	2.	2.	3. 2.
	95.0	2.	3.	3.	3.	3.	3.	3.	3.	3.
	90.0	2.	3.	3.	3.	3.	3.	2.	2.	3. 3.
	87.5	7.	8.	5.	6.	6.	6.	5.	5.	7. 12.
	85.0	28.	23.	20.	22.	20.	28.	21.	20.	24. 33.
	82.5	145.	132.	73.	83.	79.	79.	93.	91.	112. 140.
V	80.0	294.	283.	172.	211.	258.	236.	243.	207.	230. 292.
E	77.5	434.	400.	247.	320.	426.	455.	381.	305.	313. 444.
R	75.0	571.	533.	322.	459.	549.	561.	497.	432.	423. 563.
T	72.5	580.	577.	371.	543.	671.	611.	577.	537.	517. 617.
I	70.0	624.	630.	406.	589.	726.	761.	621.	596.	587. 675.
C	67.5	702.	692.	415.	626.	791.	896.	624.	633.	657. 762.
A	66.0 <<	722.	712.	410.	644.	813.	921.	593.	649.	657. 775.
L	65.0	712.	704.	395.	651.	809.	904.	570.	665.	659. 767.
	62.5	669.	661.	372.	651.	785.	838.	506.	667.	658. 719.
A	60.0	634.	637.	365.	649.	748.	777.	454.	669.	643. 685.
N	57.5	607.	608.	354.	641.	704.	717.	415.	659.	627. 651.
G	55.0	585.	586.	344.	615.	649.	680.	372.	638.	615. 630.
L	52.5	569.	572.	333.	580.	602.	636.	356.	601.	593. 614.
E	50.0	539.	540.	314.	536.	565.	591.	341.	556.	555. 577.
	47.5	499.	496.	290.	491.	536.	531.	325.	508.	503. 527.
	45.0	453.	445.	269.	443.	486.	448.	312.	454.	459. 473.
	42.5	410.	402.	251.	409.	440.	378.	318.	410.	426. 426.
	40.0	377.	373.	252.	380.	406.	330.	332.	344.	406. 398.
	37.5	374.	366.	253.	342.	377.	296.	342.	286.	366. 372.
	35.0	360.	340.	241.	306.	347.	294.	340.	263.	345. 349.
	30.0	340.	290.	256.	267.	241.	263.	330.	266.	324. 309.
	25.0	256.	212.	222.	237.	174.	229.	268.	216.	237. 267.
	20.0	106.	122.	188.	155.	163.	189.	170.	183.	174. 180.
	15.0	65.	68.	83.	111.	145.	126.	121.	108.	96. 89.
	10.0	37.	39.	47.	55.	54.	61.	53.	52.	51. 44.
	5.0	25.	25.	26.	28.	30.	41.	35.	31.	29. 26.
	0.0	23.	23.	23.	23.	23.	23.	23.	23.	23. 23.

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	137.5	145.0	155.0	165.0	175.0
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	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
115.0	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
105.0	2.	2.	3.	2.	2.	3.	3.	3.	3.	3.	2.
95.0	3.	3.	4.	3.	3.	3.	3.	3.	3.	3.	3.
90.0	4.	4.	3.	2.	2.	3.	3.	3.	3.	3.	3.
87.5	13.	11.	6.	5.	6.	7.	7.	7.	6.	6.	6.
85.0	35.	36.	23.	18.	22.	23.	22.	23.	20.	21.	33.
82.5	134.	136.	103.	92.	86.	88.	89.	103.	90.	112.	148.
V 80.0	255.	301.	227.	220.	219.	263.	267.	280.	208.	226.	320.
E 77.5	378.	445.	325.	323.	315.	487.	496.	417.	300.	310.	436.
R 75.0	425.	443.	432.	456.	375.	572.	564.	534.	406.	413.	431.
T 72.5	454.	504.	528.	545.	453.	615.	598.	641.	501.	498.	493.
I 70.0	474.	547.	620.	605.	504.	784.	753.	736.	547.	579.	604.
C 67.5	540.	583.	675.	638.	514.	919.	916.	795.	584.	606.	657.
A 66.0<<	544.	596.	691.	654.	505.	920.	931.	787.	602.	608.	686.
L 65.0	535.	587.	685.	658.	489.	902.	903.	769.	602.	585.	668.
62.5	472.	513.	667.	664.	473.	826.	821.	746.	611.	562.	637.
A 60.0	439.	479.	659.	664.	475.	744.	747.	732.	613.	535.	618.
N 57.5	416.	454.	640.	649.	469.	707.	707.	697.	612.	489.	598.
G 55.0	399.	433.	618.	618.	464.	652.	673.	645.	591.	449.	570.
L 52.5	385.	412.	594.	565.	477.	583.	629.	599.	561.	402.	558.
E 50.0	362.	380.	551.	490.	475.	521.	559.	556.	518.	351.	520.
47.5	328.	337.	505.	411.	460.	457.	480.	514.	479.	296.	477.
45.0	297.	301.	461.	347.	426.	403.	418.	469.	437.	257.	426.
42.5	265.	267.	428.	307.	393.	357.	362.	421.	412.	240.	383.
40.0	244.	245.	394.	280.	365.	332.	326.	385.	357.	227.	367.
37.5	222.	229.	367.	257.	342.	307.	303.	338.	306.	211.	362.
35.0	216.	223.	348.	244.	324.	292.	291.	292.	274.	197.	346.
30.0	214.	217.	295.	256.	311.	291.	278.	227.	237.	183.	309.
25.0	194.	184.	214.	243.	252.	245.	213.	164.	166.	164.	224.
20.0	125.	125.	173.	190.	178.	156.	158.	148.	142.	105.	103.
15.0	88.	91.	92.	107.	114.	112.	117.	124.	101.	84.	74.
10.0	41.	39.	38.	42.	47.	51.	54.	57.	51.	45.	40.
5.0	25.	24.	24.	26.	27.	29.	29.	34.	33.	30.	28.
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
	180.0
	180.0 0.
	175.0 0.
	165.0 0.
	155.0 0.
	145.0 0.
	135.0 0.
	125.0 1.
	115.0 1.
	105.0 3.
	95.0 3.
	90.0 2.
	87.5 6.
	85.0 26.
	82.5 141.
V	80.0 318.
E	77.5 439.
R	75.0 443.
T	72.5 517.
I	70.0 621.
C	67.5 711.
A	66.0<< 744.
L	65.0 706.
	62.5 653.
A	60.0 631.
N	57.5 594.
G	55.0 569.
L	52.5 555.
E	50.0 521.
	47.5 470.
	45.0 416.
	42.5 374.
	40.0 363.
	37.5 363.
	35.0 348.
	30.0 309.
	25.0 241.
	20.0 102.
	15.0 77.
	10.0 39.
	5.0 29.
	0.0 23.

CONE OF MAXIMUM CANDELA

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5-DEGREE ZONAL LUMEN SUMMARY

0- 5	1
5- 10	3
10- 15	9
15- 20	21
20- 25	40
25- 30	62
30- 35	84
35- 40	106
40- 45	137
45- 50	182
50- 55	231
55- 60	273
60- 65	311
65- 70	333
70- 75	282
75- 80	193
80- 85	64
85- 90	5
90- 95	2
95-100	2
100-105	1
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	3
0- 20	34
0- 30	135
0- 40	325
0- 50	644
0- 60	1147
0- 70	1791
0- 80	2267
0- 90	2336
0-100	2339
0-110	2342
0-120	2343
0-130	2344
0-140	2344
0-150	2344
0-160	2344
0-170	2344
0-180	2344

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 CATALOG NUMBER: ALED5T26N (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 (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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RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	2344 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3838
Chromaticity Ordinate y	0.3859
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2237
Chromaticity Ordinate v'	0.5061
Correlated Color Temp CCT (K)	3977
ANSI C78.377-2008 Duv	0.003
Total Radiant Flux (milliWatts)	6955 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.239
Input Power (Watts)	28.5
Input Power Factor (%)	99.4
Input Current THD (%)	8.9
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	82.2
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.117
Input Power (Watts)	29.1
Input Power Factor (%)	89.8
Input Current THD (%)	20.4
Input Voltage THD (%)	0.2
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	82
R1 Light greyish red	80
R2 Dark greyish yellow	86
R3 Strong yellowish green	92
R4 Moderate yellowish green	82
R5 Light bluish green	80
R6 Light blue	82
R7 Light violet	87
R8 Light reddish purple	65
R9 Strong red	5
R10 Strong yellow	68
R11 Strong green	81
R12 Strong blue	55
R13 Light yellowish pink (skin)	81
R14 Moderate olive green (leaf)	95

*NOTE:

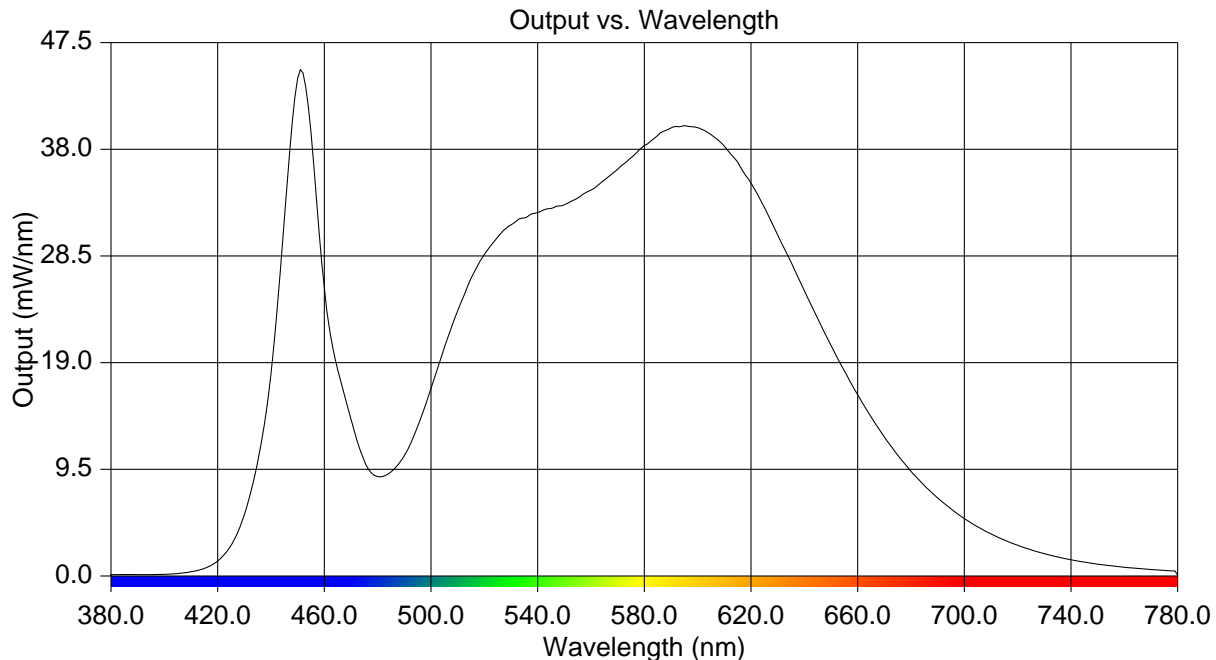
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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	0.109	515	26.501	650	20.530
385	0.114	520	28.621	655	18.277
390	0.117	525	30.181	660	16.139
395	0.128	530	31.272	665	14.151
400	0.154	535	31.886	670	12.398
405	0.212	540	32.363	675	10.750
410	0.358	545	32.730	680	9.344
415	0.673	550	33.062	685	8.057
420	1.333	555	33.657	690	6.930
425	2.711	560	34.362	695	5.978
430	5.439	565	35.302	700	5.108
435	10.152	570	36.232	705	4.386
440	18.004	575	37.247	710	3.756
445	31.721	580	38.351	715	3.203
450	44.329	585	39.229	720	2.725
455	39.511	590	39.905	725	2.325
460	25.547	595	40.115	730	1.986
465	18.369	600	39.939	735	1.691
470	13.950	605	39.305	740	1.439
475	10.254	610	38.280	745	1.239
480	8.840	615	36.870	750	1.057
485	9.287	620	34.998	755	0.907
490	10.724	625	32.835	760	0.782
495	13.317	630	30.373	765	0.666
500	16.711	635	27.965	770	0.575
505	20.301	640	25.419	775	0.495
510	23.681	645	22.921	780	0.075



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CIE Chromaticity Diagram

