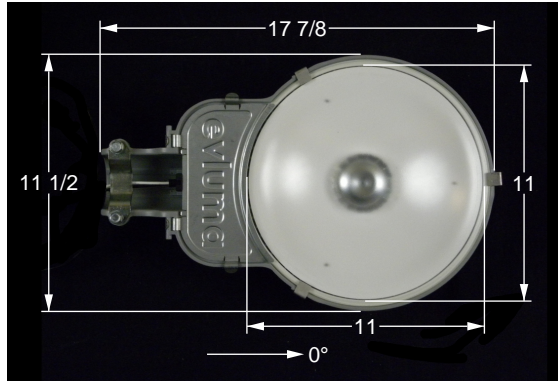


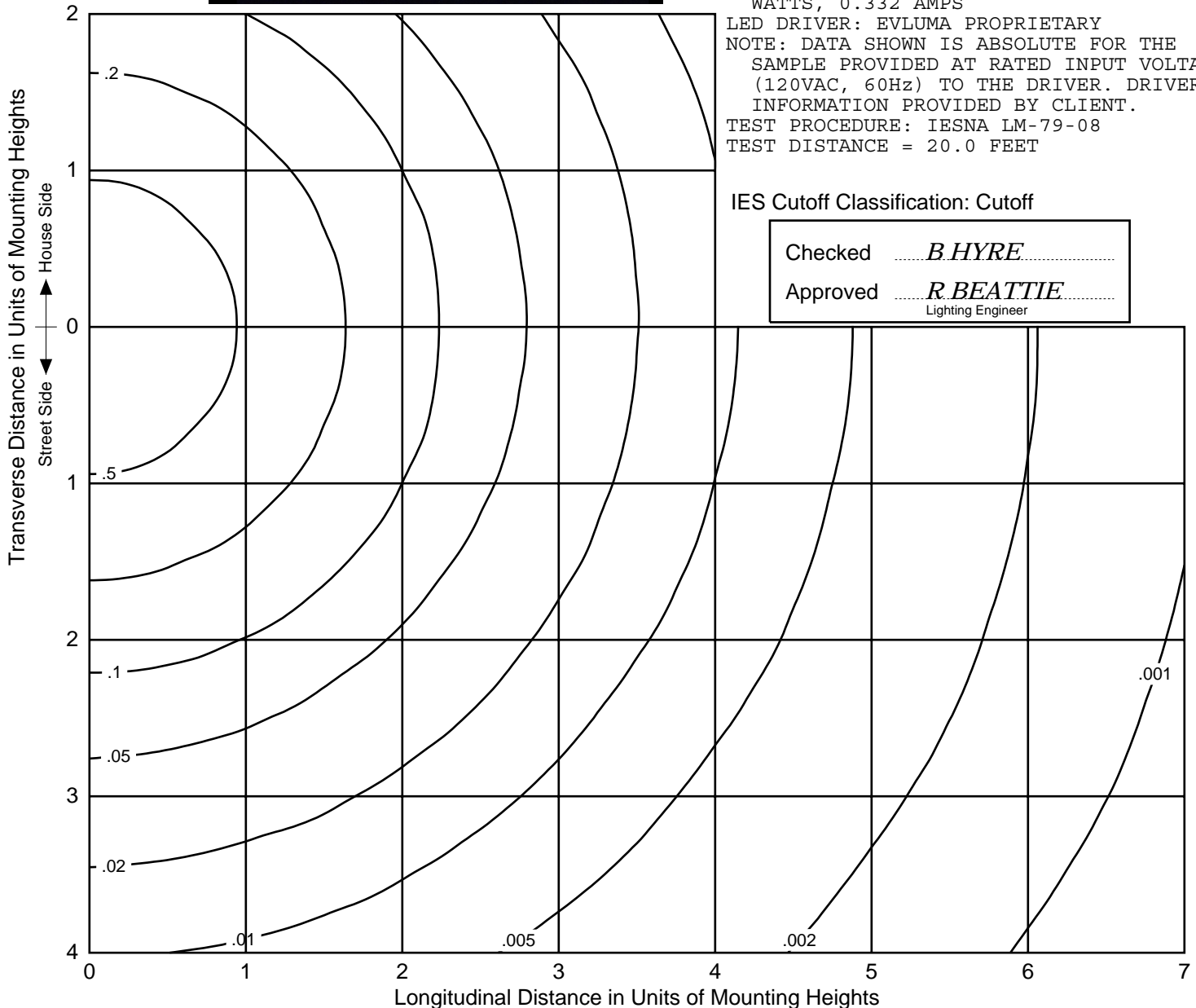
ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION
Values based on 25 foot mounting height.

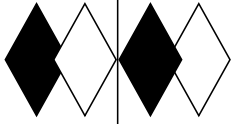


REPORT NUMBER: ITL87306-GONIOPHOTOMETRY
 ISSUE DATE: 05/20/16 PAGE: 1 OF 8
 PREPARED FOR: EVLUMA
 CATALOG NUMBER: AMAX-40-3K-6-V-D-S3-0
 LUMINAIRE: CAST FINNED METAL HOUSING WITH FORMED METAL ACCESS DOOR, 16 LEDS, WHITE FIBROUS REFLECTOR, FABRICATED MULTI-FACETED SEGMENTED METAL CENTER REFLECTOR WITH PREMIUM SPECULAR FINISH, CLEAR MICRO-PRISMATIC GLASS DROP LENS, LENS PRISMS OUT.
 LAMPS: SIXTEEN WHITE LIGHT EMITTING DIODES (LEDS) EACH WITH CLEAR HEMISPHERICAL INTEGRAL LENS, VERTICAL BASE-UP POSITION.
 INPUT ELECTRICAL: 120.0 VOLTS, 39.8 WATTS, 0.332 AMPS
 LED DRIVER: EVLUMA PROPRIETARY
 NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE DRIVER. DRIVER INFORMATION PROVIDED BY CLIENT.
 TEST PROCEDURE: IESNA LM-79-08
 TEST DISTANCE = 20.0 FEET

IES Cutoff Classification: Cutoff

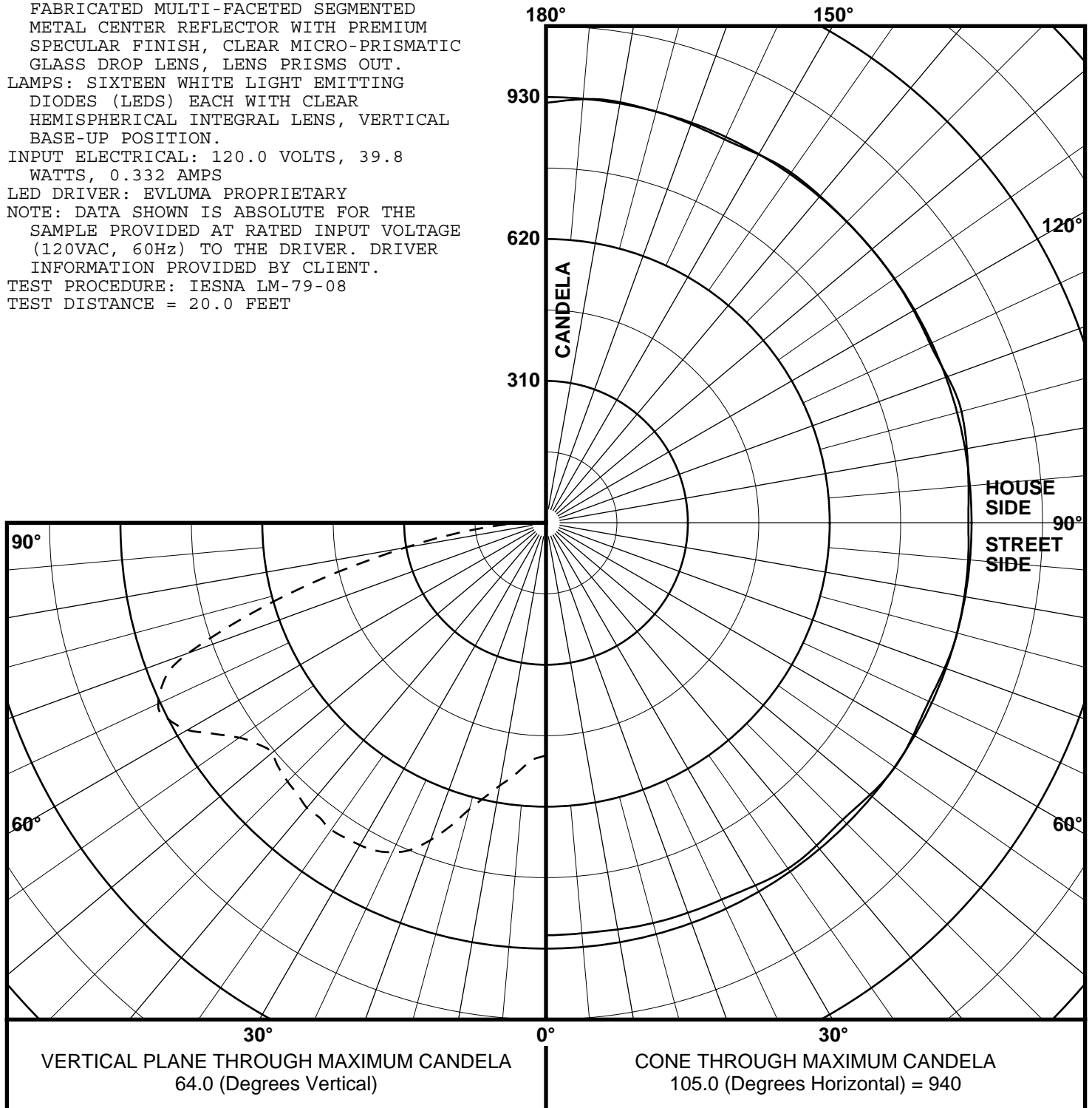
Checked *B. HYRE*
 Approved *R. BEATTIE*
 Lighting Engineer





REPORT NUMBER: ITL87306-GONIOPHOTOMETRY
 ISSUE DATE: 05/20/16 PAGE: 2 OF 8
 PREPARED FOR: EVLUMA
 CATALOG NUMBER: AMAX-40-3K-6-V-D-S3-0
 LUMINAIRE: CAST FINNED METAL HOUSING
 WITH FORMED METAL ACCESS DOOR, 16
 LEDS, WHITE FIBROUS REFLECTOR,
 FABRICATED MULTI-FACETED SEGMENTED
 METAL CENTER REFLECTOR WITH PREMIUM
 SPECULAR FINISH, CLEAR MICRO-PRISMATIC
 GLASS DROP LENS, LENS PRISMS OUT.
 LAMPS: SIXTEEN WHITE LIGHT EMITTING
 DIODES (LEDS) EACH WITH CLEAR
 HEMISPHERICAL INTEGRAL LENS, VERTICAL
 BASE-UP POSITION.
 INPUT ELECTRICAL: 120.0 VOLTS, 39.8
 WATTS, 0.332 AMPS
 LED DRIVER: EVLUMA PROPRIETARY
 NOTE: DATA SHOWN IS ABSOLUTE FOR THE
 SAMPLE PROVIDED AT RATED INPUT VOLTAGE
 (120VAC, 60Hz) TO THE DRIVER. DRIVER
 INFORMATION PROVIDED BY CLIENT.
 TEST PROCEDURE: IESNA LM-79-08
 TEST DISTANCE = 20.0 FEET

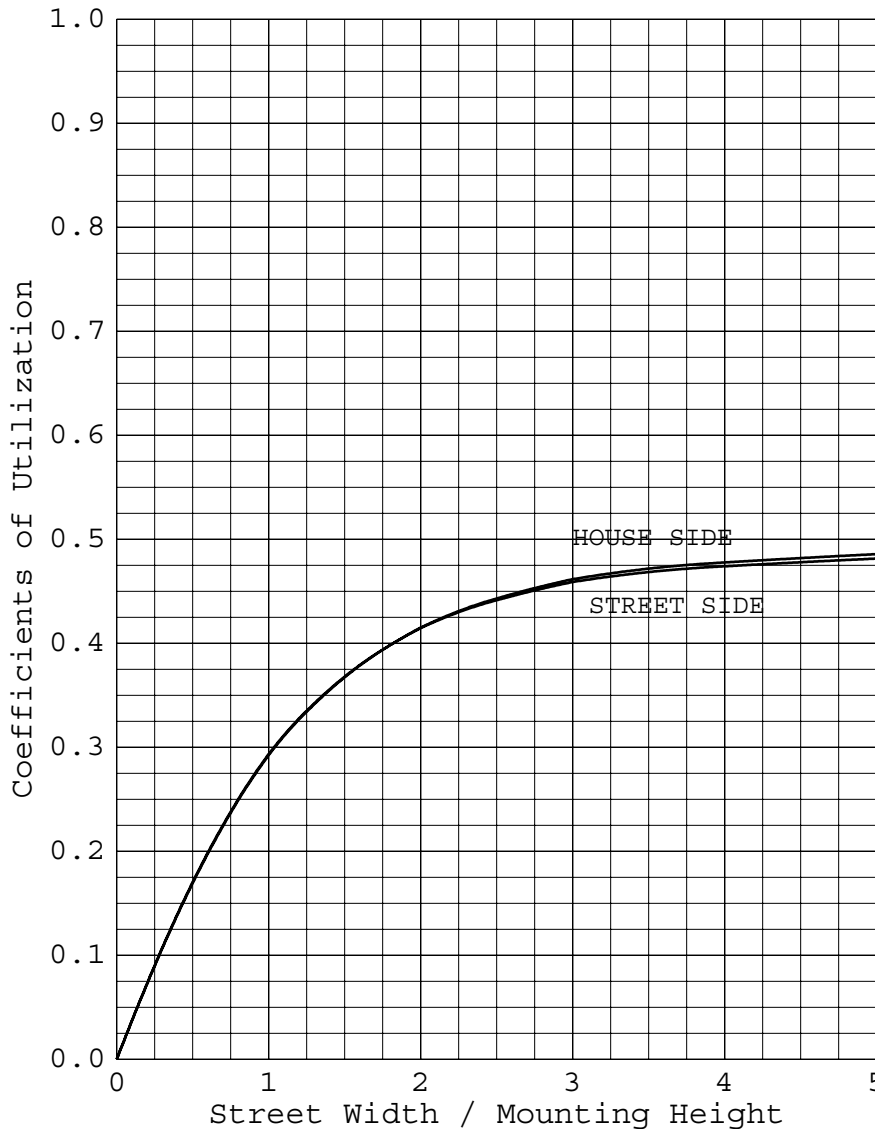
MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA



REPORT NUMBER: ITL87306-GONIOPHOTOMETRY
ISSUE DATE: 05/20/16
PREPARED FOR: EVLUMA

PAGE: 3 OF 8

COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	2046	49.5
DOWNWARD HOUSE SIDE	2065	50.0
DOWNWARD TOTAL	4112	99.5
UPWARD STREET SIDE	12	0.3
UPWARD HOUSE SIDE	10	0.2
UPWARD TOTAL	23	0.5
TOTAL FLUX	4134	100.0

EFFICACY = 103.9 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.



INDEPENDENT TESTING LABORATORIES, INC.
4066 CAMELOT CIRCLE, LONGMONT, CO 80504 USA

PHONE: (303) 442-1255 • FAX: (970) 535-3114 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL87306-GONIOPHOTOMETRY
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PAGE: 4 OF 8

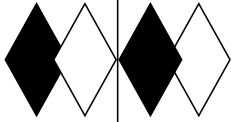
FLUX DISTRIBUTION BY SOLID ANGLE

(PER IESNA TM-15-11, LUMINAIRE CLASSIFICATION SYSTEM FOR OUTDOOR LUMINAIRES)

	LUMENS	PERCENT OF FIXTURE	BUG ZONE RATINGS
FORWARD LIGHT	2046.	49.5	
FL (0- 30)	305.4	7.4	
FM (30- 60)	935.1	22.6	
FH (60- 80)	721.4	17.5	G1
FVH(80- 90)	84.4	2.0	G1
BACK LIGHT	2065.	50.0	
BL (0- 30)	300.9	7.3	B1
BM (30- 60)	933.6	22.6	B1
BH (60- 80)	744.9	18.0	B2 G1
BVH(80- 90)	85.9	2.1	G1
UPLIGHT	23.	0.5	
UL (90-100)	21.5	0.5	U2
UH (100-180)	1.1	0.0	U1
TRAPPED LIGHT	0.	0.0	
TOTAL FLUX	4134.	100.0	

BACKLIGHT, UPLIGHT, AND GLARE (BUG) RATINGS
(PER ADDENDUM A FOR IESNA TM-15-11)

BUG RATING: B2 U2 G1



REPORT NUMBER: ITL87306-GONIOPHOTOMETRY
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 PREPARED FOR: EVLUMA

PAGE: 5 OF 8

CANDELA TABULATION

	LATERAL ANGLE										
	0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0	90.0
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	1.	0.	1.	1.	1.	1.	1.	1.	1.	1.	1.
95.0	13.	13.	15.	16.	16.	16.	16.	16.	16.	16.	16.
92.5	25.	26.	32.	33.	34.	33.	33.	33.	33.	34.	32.
90.0	47.	48.	55.	57.	58.	58.	57.	58.	59.	60.	58.
87.5	79.	80.	89.	92.	94.	92.	93.	96.	97.	97.	95.
85.0	128.	129.	135.	141.	143.	142.	145.	150.	147.	150.	147.
V 82.5	194.	192.	197.	204.	208.	210.	214.	222.	220.	222.	221.
E 80.0	280.	275.	277.	284.	290.	299.	299.	309.	309.	313.	312.
R 77.5	385.	378.	377.	385.	392.	401.	399.	413.	415.	423.	425.
T 75.0	512.	502.	500.	515.	513.	523.	521.	537.	541.	551.	556.
I 72.5	649.	645.	637.	650.	647.	660.	657.	674.	673.	688.	698.
C 70.0	792.	784.	775.	791.	777.	795.	791.	809.	811.	821.	826.
A 67.5	865.	871.	869.	883.	882.	886.	893.	902.	906.	900.	902.
L 65.0	893.	899.	900.	908.	920.	918.	928.	926.	929.	921.	922.
64.0<<	901.	900.	905.	908.	922.	917.	931.	923.	930.	926.	923.
A 62.5	897.	896.	907.	902.	914.	907.	917.	911.	922.	924.	922.
N 60.0	874.	872.	886.	875.	886.	883.	895.	892.	899.	899.	892.
G 57.5	843.	845.	844.	849.	856.	853.	858.	858.	858.	863.	864.
L 55.0	814.	813.	818.	816.	819.	821.	820.	821.	819.	829.	824.
E 52.5	791.	790.	792.	790.	791.	792.	794.	793.	793.	795.	791.
50.0	778.	779.	783.	777.	783.	775.	790.	775.	783.	783.	775.
47.5	775.	785.	785.	775.	797.	777.	790.	780.	789.	788.	777.
45.0	787.	795.	800.	785.	798.	786.	794.	787.	795.	793.	792.
42.5	800.	803.	810.	803.	811.	800.	802.	800.	809.	801.	806.
40.0	809.	813.	811.	814.	813.	817.	807.	814.	811.	815.	815.
37.5	819.	821.	821.	818.	818.	822.	815.	814.	816.	821.	816.
35.0	830.	826.	828.	827.	819.	825.	820.	820.	814.	816.	819.
30.0	826.	823.	814.	823.	813.	818.	810.	812.	814.	810.	817.
25.0	803.	807.	805.	804.	799.	798.	793.	795.	797.	796.	796.
20.0	755.	752.	756.	745.	747.	741.	738.	738.	741.	739.	741.
15.0	669.	670.	672.	667.	663.	662.	661.	661.	657.	659.	654.
10.0	589.	593.	594.	590.	589.	590.	591.	588.	585.	586.	585.
5.0	545.	545.	544.	543.	542.	543.	543.	541.	540.	538.	538.
0.0	508.	508.	508.	508.	508.	508.	508.	508.	508.	508.	508.

CONE OF MAXIMUM CANDELA



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REPORT NUMBER: ITL87306-GONIOPHOTOMETRY
ISSUE DATE: 05/20/16
PREPARED FOR: EVLUMA

PAGE: 6 OF 8

CANDELA TABULATION

	HOUSE SIDE		LATERAL ANGLE							
	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	1.	1.	1.	1.	1.	0.	0.	0.	0.	0.
95.0	16.	15.	14.	14.	14.	11.	7.	6.	6.	7.
92.5	34.	31.	29.	30.	30.	25.	21.	19.	20.	24.
90.0	60.	56.	54.	54.	56.	50.	47.	49.	48.	50.
87.5	98.	94.	92.	92.	93.	88.	85.	88.	88.	89.
85.0	150.	148.	148.	148.	146.	140.	138.	141.	140.	141.
V 82.5	223.	223.	222.	221.	216.	210.	208.	210.	209.	209.
E 80.0	315.	313.	316.	313.	314.	300.	300.	300.	300.	302.
R 77.5	424.	425.	430.	426.	427.	412.	411.	415.	416.	422.
T 75.0	558.	560.	565.	554.	559.	543.	544.	550.	556.	563.
I 72.5	696.	697.	710.	696.	704.	686.	698.	695.	701.	709.
C 70.0	828.	832.	841.	834.	839.	824.	836.	831.	833.	845.
A 67.5	901.	904.	903.	902.	912.	901.	909.	906.	909.	908.
L 65.0	927.	935.	926.	930.	932.	928.	927.	929.	931.	924.
64.0<<	927.	940.	926.	929.	930.	934.	924.	930.	929.	917.
A 62.5	922.	930.	918.	926.	910.	923.	914.	925.	920.	914.
N 60.0	896.	905.	896.	899.	891.	897.	891.	893.	890.	880.
G 57.5	862.	858.	855.	860.	853.	853.	851.	852.	850.	849.
L 55.0	821.	818.	819.	818.	815.	811.	809.	808.	815.	808.
E 52.5	795.	794.	790.	792.	784.	787.	783.	787.	785.	786.
50.0	779.	782.	773.	789.	771.	783.	768.	780.	777.	773.
47.5	780.	792.	780.	789.	777.	787.	777.	786.	781.	780.
45.0	793.	799.	788.	799.	791.	796.	790.	797.	794.	784.
42.5	805.	804.	806.	802.	804.	806.	805.	801.	800.	795.
40.0	813.	813.	811.	813.	814.	810.	816.	814.	813.	812.
37.5	818.	812.	816.	811.	823.	813.	818.	816.	812.	822.
35.0	823.	819.	820.	823.	818.	820.	818.	817.	817.	822.
30.0	819.	813.	817.	810.	812.	813.	812.	808.	814.	810.
25.0	798.	794.	798.	790.	791.	785.	781.	787.	785.	782.
20.0	737.	737.	732.	732.	730.	722.	726.	724.	724.	725.
15.0	657.	648.	651.	647.	645.	640.	639.	642.	640.	639.
10.0	584.	583.	581.	579.	579.	579.	577.	575.	575.	573.
5.0	536.	533.	534.	532.	530.	529.	528.	529.	529.	529.
0.0	508.	508.	508.	508.	508.	508.	508.	508.	508.	508.

||
PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA



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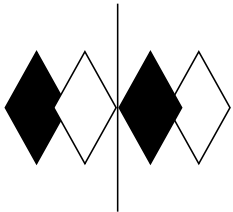
PAGE: 7 OF 8

5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	13
5- 10	40
10- 15	73
15- 20	115
20- 25	161
25- 30	204
30- 35	241
35- 40	273
40- 45	297
45- 50	317
50- 55	345
55- 60	395
60- 65	444
65- 70	447
70- 75	354
75- 80	222
80- 85	118
85- 90	52
90- 95	17
95-100	4
100-105	1
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	53
0- 20	241
0- 30	606
0- 40	1120
0- 50	1735
0- 60	2475
0- 70	3365
0- 80	3941
0- 90	4112
0-100	4133
0-110	4134
0-120	4134
0-130	4134
0-140	4134
0-150	4134
0-160	4134
0-170	4134
0-180	4134



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PAGE: 8 OF 8

ADDRESS: 3600 LIND AVE. SW
SUITE 140
RENTON, WA 98057

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REPORT NUMBER: ITL87306-SPHERE
DATE: 05/24/16
PREPARED FOR: EVLUMA
CATALOG NUMBER: AMAX-40-3K-6-V-D-S3-0

ADDRESS: 3600 LIND AVE. SW
SUITE 140
RENTON, WA 98057

LUMINAIRE: CAST FINNED METAL HOUSING WITH FORMED METAL ACCESS DOOR, 16 LEDS, WHITE FIBROUS REFLECTOR, FABRICATED MULTI-FACETED SEGMENTED METAL CENTER REFLECTOR WITH PREMIUM SPECULAR FINISH, CLEAR MICRO-PRISMATIC GLASS DROP LENS, LENS PRISMS OUT.

LAMP: SIXTEEN WHITE LIGHT EMITTING DIODES (LEDS) EACH WITH CLEAR HEMISPHERICAL INTEGRAL LENS, VERTICAL BASE-UP POSITION.

DRIVER: EVLUMA PROPRIETARY

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE DRIVER. DRIVER INFORMATION PROVIDED BY CLIENT.

INSTRUMENTS: Associated Power Technologies APT5040 AC Power Source Calibration Due: N/A
Yokogawa WT210 Digital Power Meter #6 12/14/16
Ocean Optics QE65000 Spectroradiometer 04/19/17
ITL 2.0m Diameter Integrating Sphere S20-2, 4PI Geometry 04/19/17

OBJECT OF TEST: Measure the Absolute Flux in lumens*, Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Index (CRIa,1-14), Chromaticity Coordinates (x,y; u',v'), ANSI C78.377 Duv, Total Radiant Flux*, Scotopic / Photopic Lumen Ratio, and electrical data including ANSI C82.77-2002 Power Factor (PF) and Total Harmonic Distortion (THD) to the test sample.

PROCEDURE: The test sample was provided by the customer and had an unknown number of operating hours. The test sample was mounted inside the integrating sphere 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 120VAC input in a 25 +/-1 degree Celsius free air ambient and in accordance with IESNA LM-79-08. All data are traceable to the National Institute of Standards and Technology.

RESULTS: (continued subsequent pages)

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Checked N WHITE
Approved P O'CONNOR
Sphere Lab Supervisor



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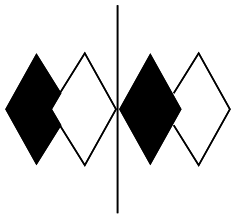
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 CATALOG NUMBER: AMAX-40-3K-6-V-D-S3-0

RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	4134 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4417
Chromaticity Ordinate y	0.4104
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2509
Chromaticity Ordinate v'	0.5245
Correlated Color Temp CCT (K)	2971
ANSI C78.377-2008 Duv	0.002
Total Radiant Flux (milliWatts)	11869 *
Scotopic / Photopic Lumen Ratio	1.204
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.332
Input Power (Watts)	39.7
Input Power Factor (%)	99.6
Input Current THD (%)	6.4
Input Voltage THD (%)	0.3
EFFICACY (lumens/Watt)	104.1

COLOR RENDERING INDICES		CRI
Ra (Average 1-8)		72
R1	Light greyish red	68
R2	Dark greyish yellow	79
R3	Strong yellowish green	90
R4	Moderate yellowish green	71
R5	Light bluish green	68
R6	Light blue	73
R7	Light violet	79
R8	Light reddish purple	46
R9	Strong red	-29
R10	Strong yellow	54
R11	Strong green	68
R12	Strong blue	49
R13	Light yellowish pink (skin)	70
R14	Moderate olive green (leaf)	94

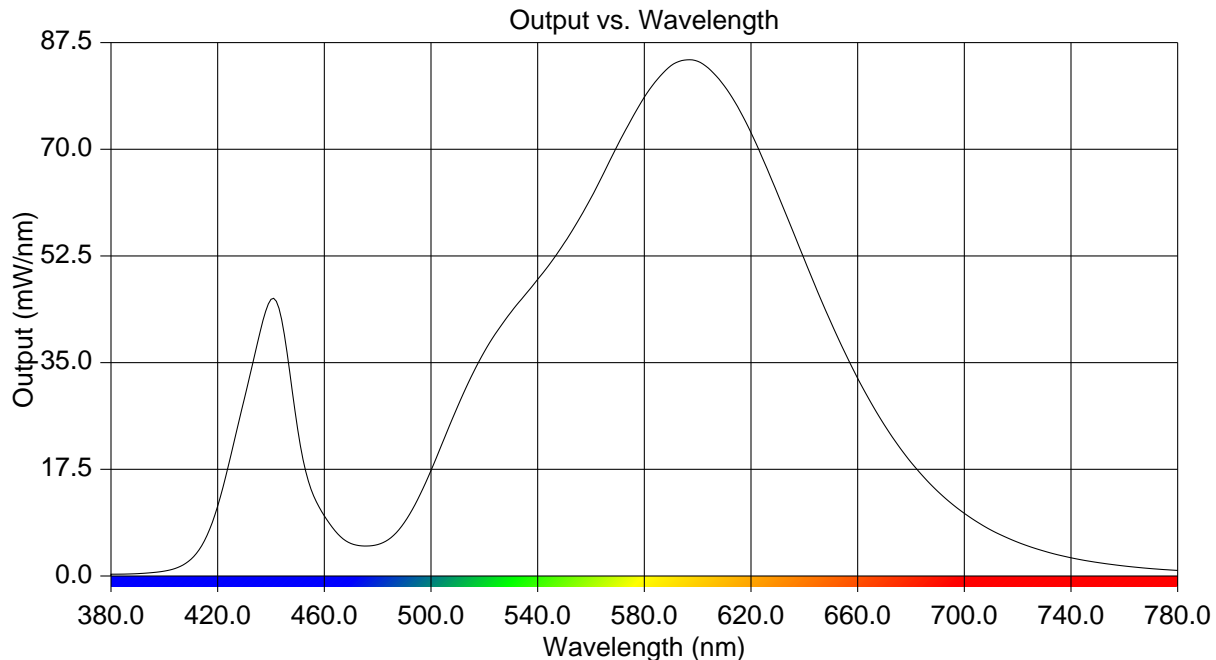
*NOTE: The total lumen output shown on this report was obtained from photometric test ITL87306-GONIOPHOTOMETRY

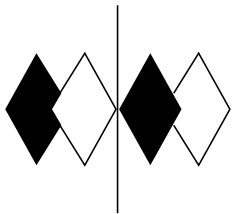


PHONE: (303)442-1255 • FAX: (970)535-3114 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com
 REPORT NUMBER: ITL87306-SPHERE
 DATE: 05/24/16
 PREPARED FOR: EVLUMA
 CATALOG NUMBER: AMAX-40-3K-6-V-D-S3-0

RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.296	515	32.625	650	41.596
385	0.312	520	36.796	655	36.852
390	0.384	525	40.275	660	32.425
395	0.538	530	43.284	665	28.432
400	0.803	535	45.975	670	24.791
405	1.389	540	48.665	675	21.547
410	2.749	545	51.466	680	18.656
415	5.747	550	54.648	685	16.131
420	11.464	555	58.151	690	13.894
425	19.880	560	62.030	695	11.961
430	29.061	565	66.301	700	10.277
435	38.371	570	70.707	705	8.814
440	45.394	575	74.796	710	7.538
445	39.618	580	78.562	715	6.477
450	24.092	585	81.539	720	5.546
455	14.246	590	83.732	725	4.750
460	9.863	595	84.636	730	4.073
465	6.920	600	84.450	735	3.482
470	5.327	605	82.923	740	2.989
475	4.915	610	80.401	745	2.564
480	5.153	615	77.002	750	2.212
485	6.291	620	72.736	755	1.907
490	8.774	625	67.861	760	1.639
495	12.552	630	62.671	765	1.410
500	17.313	635	57.337	770	1.212
505	22.594	640	51.947	775	1.050
510	27.819	645	46.615	780	0.913





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CIE Chromaticity Diagram

