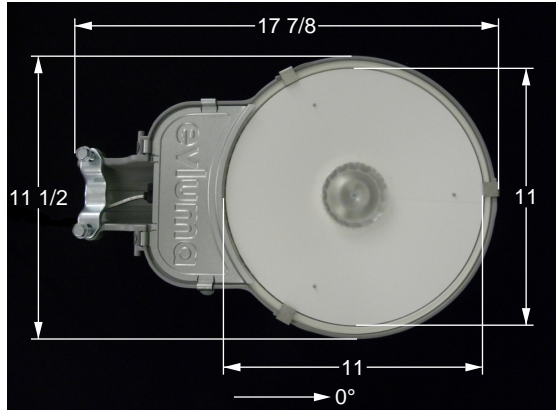


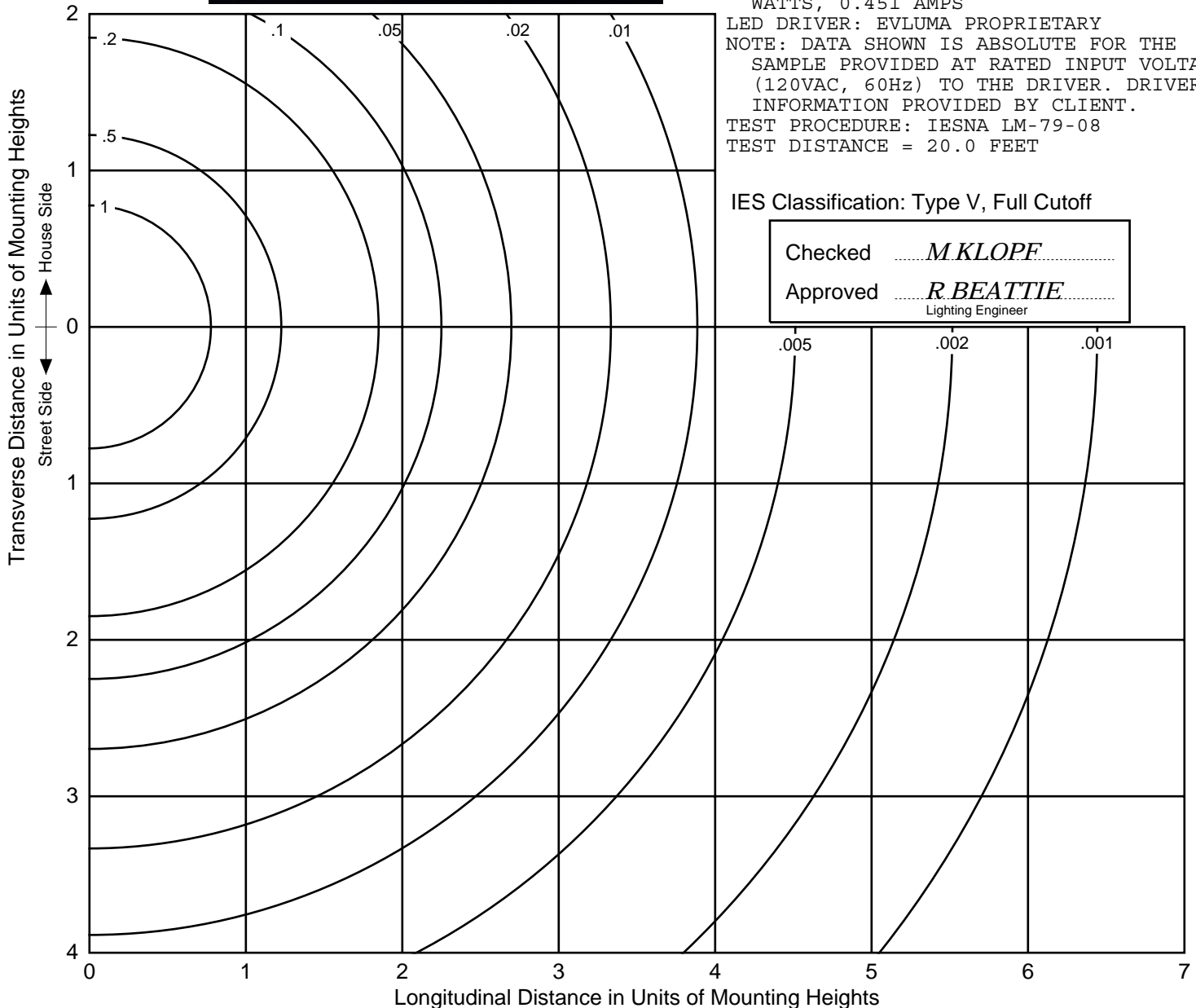
ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION
Values based on 25 foot mounting height.

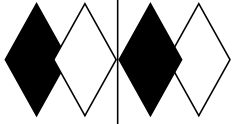


REPORT NUMBER: ITL88127-GONIOPHOTOMETRY
 ISSUE DATE: 08/12/16 PAGE: 1 OF 7
 PREPARED FOR: EVLUMA
 CATALOG NUMBER: AMAX-55-4K-6-V-C-S3-0
 LUMINAIRE: CAST FINNED METAL HOUSING WITH FORMED METAL ACCESS DOOR, 16 LEDS, WHITE FIBROUS REFLECTOR, FABRICATED MULTI-FACETED SEGMENTED METAL CENTER REFLECTOR WITH PREMIUM SPECULAR FINISH, CLEAR MICRO-PRISMATIC FLAT GLASS 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, 53.9 WATTS, 0.451 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 Classification: Type V, Full Cutoff

Checked *M KLOPF*
 Approved *R BEATTIE*
 Lighting Engineer





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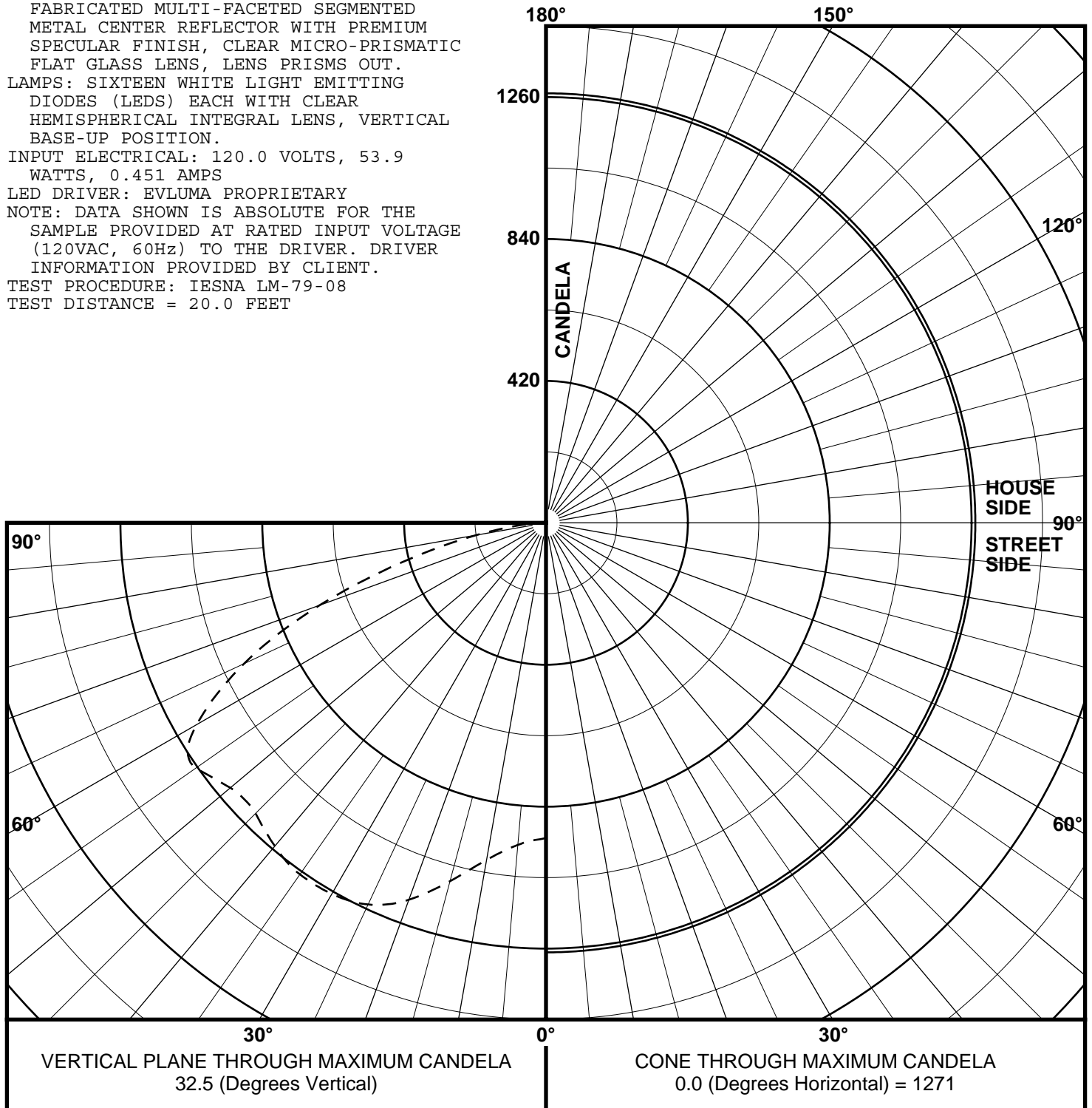
NVLAP
 NVLAP LAB CODE: 200925-0

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REPORT NUMBER: ITL88127-GONIOPHOTOMETRY
 ISSUE DATE: 08/12/16 PAGE: 2 OF 7
 PREPARED FOR: EVLUMA
 CATALOG NUMBER: AMAX-55-4K-6-V-C-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
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 INFORMATION PROVIDED BY CLIENT.
 TEST PROCEDURE: IESNA LM-79-08
 TEST DISTANCE = 20.0 FEET

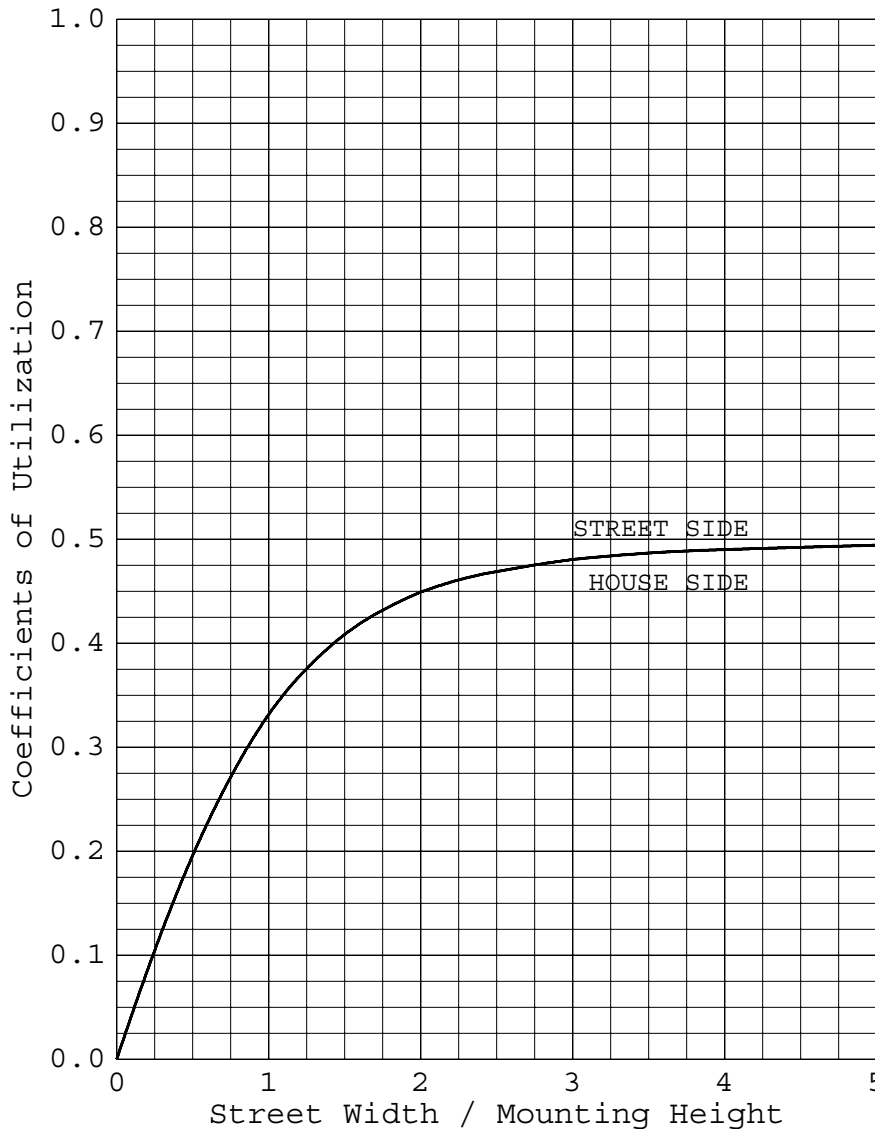
MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA



REPORT NUMBER: ITL88127-GONIOPHOTOMETRY
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COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	2680	50.0
DOWNWARD HOUSE SIDE	2680	50.0
DOWNWARD TOTAL	5360	100.0
UPWARD STREET SIDE	0	0.0
UPWARD HOUSE SIDE	0	0.0
UPWARD TOTAL	0	0.0
TOTAL FLUX	5360	100.0

EFFICACY = 99.4 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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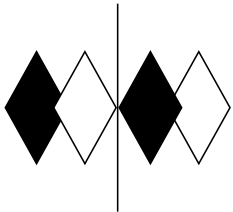
FLUX DISTRIBUTION BY SOLID ANGLE

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

	LUMENS	PERCENT OF FIXTURE	BUG ZONE RATINGS
FORWARD LIGHT	2680.	50.0	
FL (0- 30)	490.9	9.2	
FM (30- 60)	1428.5	26.7	
FH (60- 80)	713.6	13.3	G1
FVH(80- 90)	47.0	0.9	G1
BACK LIGHT	2680.	50.0	
BL (0- 30)	490.9	9.2	B1
BM (30- 60)	1428.5	26.7	B2
BH (60- 80)	713.6	13.3	B2 G1
BVH(80- 90)	47.0	0.9	G1
UPLIGHT	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	5360.	100.0	

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

BUG RATING: B2 U0 G1



REPORT NUMBER: ITL88127-GONIOPHOTOMETRY
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CANDELA TABULATION

TYPE V

	90.0	0.
	87.5	34.
	85.0	75.
	82.5	132.
	80.0	209.
	77.5	308.
	75.0	426.
	72.5	564.
	70.0	713.
	67.5	857.
	65.0	987.
	62.5	1099.
V	60.0	1194.
E	57.5	1258.
R	55.0	1265.
T	52.5	1241.
I	50.0	1220.
C	47.5	1211.
A	45.0	1216.
L	42.5	1233.
	40.0	1249.
A	37.5	1263.
N	35.0	1270.
G	33.0	1271.
L	32.5<<	1271.
E	30.0	1268.
	27.5	1261.
	25.0	1246.
	22.5	1222.
	20.0	1187.
	17.5	1144.
	15.0	1098.
	12.5	1053.
	10.0	1013.
	7.5	981.
	5.0	957.
	2.5	941.
	0.0	933.

CONE OF MAXIMUM CANDELA



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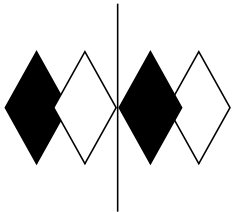
PAGE: 6 OF 7

5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	23
5- 10	70
10- 15	125
15- 20	189
20- 25	256
25- 30	319
30- 35	374
35- 40	421
40- 45	456
45- 50	491
50- 55	540
55- 60	575
60- 65	532
65- 70	432
70- 75	296
75- 80	167
80- 85	74
85- 90	20

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	93
0- 20	407
0- 30	982
0- 40	1777
0- 50	2724
0- 60	3839
0- 70	4803
0- 80	5266
0- 90	5360



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PAGE: 7 OF 7

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

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REPORT NUMBER: ITL88127-SPHERE
DATE: 08/18/16
PREPARED FOR: EVLUMA
CATALOG NUMBER: AMAX-55-4K-6-V-C-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 FLAT GLASS 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:
	Yokogawa WT210 Digital Power Meter #6	N/A
	Ocean Optics QE65000 Spectroradiometer	12/07/16
	ITL 2.0m Diameter Integrating Sphere S20-2, 4PI Geometry	04/19/17

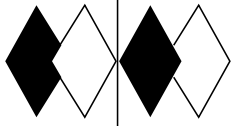
OBJECT OF TEST: Measure the Absolute Flux in lumens*, Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Index (CRIa,1-14), Chromaticity Coordinates (x,y; u',v'), ANSI C78.377 Duv, Total Radiant Flux*, Scotopic / Photopic Lumen Ratio, and electrical data including 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	<i>N WHITE</i>
Approved	<i>P O'CONNOR</i> Sphere Lab Supervisor



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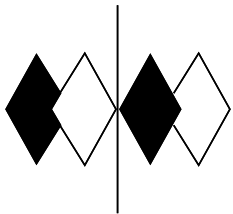
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 REPORT NUMBER: ITL88127-SPHERE
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RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	5360 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3902
Chromaticity Ordinate y	0.3888
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2267
Chromaticity Ordinate v'	0.5082
Correlated Color Temp CCT (K)	3836
ANSI C78.377-2008 Duv	0.003
Total Radiant Flux (milliWatts)	15663 *
Scotopic / Photopic Lumen Ratio	1.474
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.451
Input Power (Watts)	53.9
Input Power Factor (%)	99.6
Input Current THD (%)	7.0
Input Voltage THD (%)	0.3
EFFICACY (lumens/Watt)	99.4

COLOR RENDERING INDICES		CRI
Ra (Average 1-8)		72
R1	Light greyish red	69
R2	Dark greyish yellow	76
R3	Strong yellowish green	83
R4	Moderate yellowish green	73
R5	Light bluish green	70
R6	Light blue	69
R7	Light violet	79
R8	Light reddish purple	54
R9	Strong red	-26
R10	Strong yellow	45
R11	Strong green	72
R12	Strong blue	47
R13	Light yellowish pink (skin)	69
R14	Moderate olive green (leaf)	90

*NOTE: The total lumen output shown on this report was obtained from photometric test ITL88127-GONIOPHOTOMETRY



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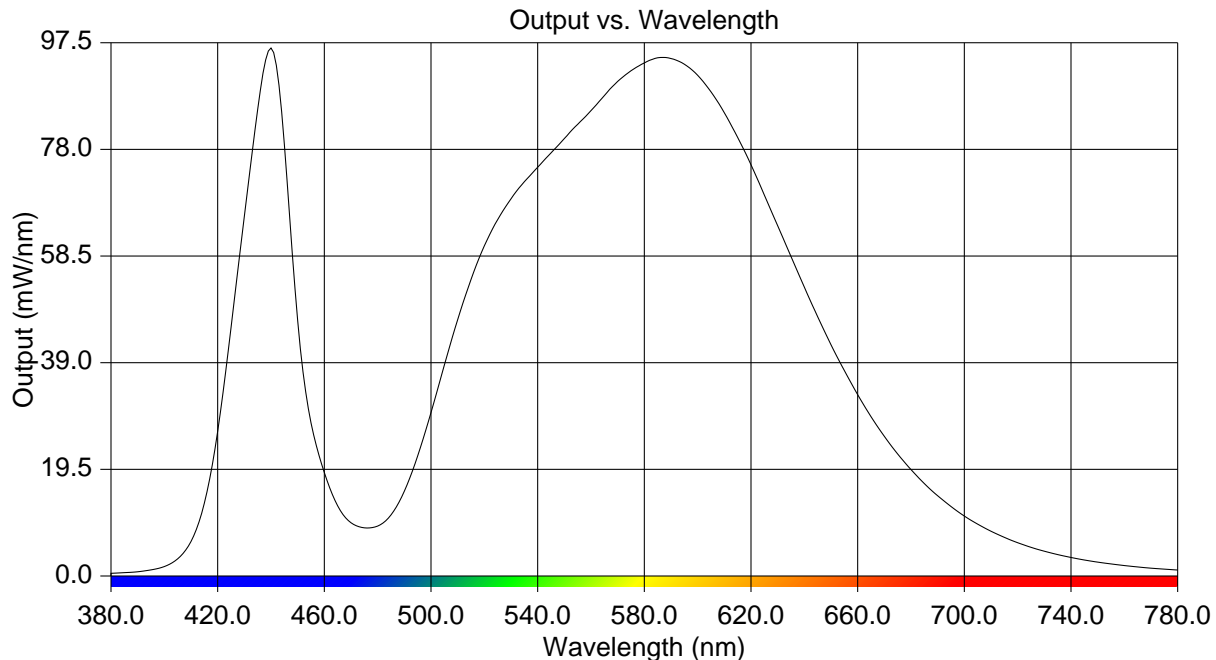
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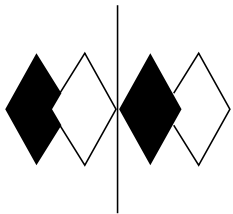
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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.489	515	54.195	650	42.270
385	0.612	520	60.356	655	37.570
390	0.771	525	65.146	660	33.149
395	1.118	530	68.948	665	29.129
400	1.725	535	72.076	670	25.535
405	3.137	540	74.730	675	22.307
410	6.303	545	77.340	680	19.457
415	13.307	550	79.969	685	16.895
420	26.429	555	82.564	690	14.669
425	45.343	560	85.079	695	12.706
430	65.739	565	87.819	700	10.960
435	85.267	570	90.419	705	9.480
440	96.519	575	92.365	710	8.182
445	78.958	580	93.795	715	7.067
450	46.720	585	94.739	720	6.083
455	27.999	590	94.596	725	5.243
460	18.911	595	93.561	730	4.531
465	12.827	600	91.533	735	3.915
470	9.734	605	88.512	740	3.387
475	8.804	610	84.681	745	2.925
480	9.126	615	80.174	750	2.537
485	11.166	620	75.175	755	2.207
490	15.503	625	69.644	760	1.909
495	21.951	630	64.041	765	1.655
500	29.881	635	58.409	770	1.429
505	38.548	640	52.817	775	1.254
510	46.854	645	47.397	780	1.092





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CIE Chromaticity Diagram

