LIGHT LABORATORY INC.
8165 E Kaiser Blvd. Anaheim, CA 92808
www.lightlaboratory.com

NVLAP TESTING
NVLAP LAB CODE 200927-0

Report No: L122510911 **Issue Date: 1/6/2026**
Amendment: N/A **Revision Date: N/A**

Report Prepared For: FX Luminaire / Lumascape
1940 Diamond Street, San Marcos, CA 92078

Model Number: TN-61-E6-S-FL-CW-FW

Test: Photometric/Colorimetric/Electrical Test

Standards Used: Appropriate part or all test guidelines were used for test performed:

IES LM79: 2008 Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products

ANSI/IES LM79: 2019 Approved Methods for Optical and Electrical Measurements of Solid-State Lighting Products

ANSI/NEMA C78.377: 2017 Specification of the Chromaticity of Solid State Lighting Products

ANSI C82.77-10:2014: Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

Description of Sample: Client submitted the sample. Received in working and undamaged condition. No modifications were necessary.

Special Test Condition: Fixture is tested with no special conditions.

Date of Tests: 12/23/25

Seasoning of Sample: No seasoning was performed in accordance with IESNA LM-79.

Equipment List

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S3	6/21/26
HP Power Supply	6032A	PS-DC05-S2	--
Fluke Digital Thermometer	52K/J	MT-TP05	6/25/26
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

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General Information	
Manufacturer:	FX Luminaire / Lumascape
Model Number:	TN-61-E6-S-FL-CW-FW
Driver Model Number:	CUSTOM

Test Summary	
Total Lumens:	421.00
Efficacy:	107.55
Color Redering Index:	83.7
Correlated Color Temperature:	3038
Input Voltage (VAC/60Hz):	12.01
Input Current (Amp):	0.4849
Input Power (W):	3.91
Input Power Factor:	0.6721
Current ATHD (%):	98.2%

Test Condition	
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:45
Total Operating Time (Hours):	1:45

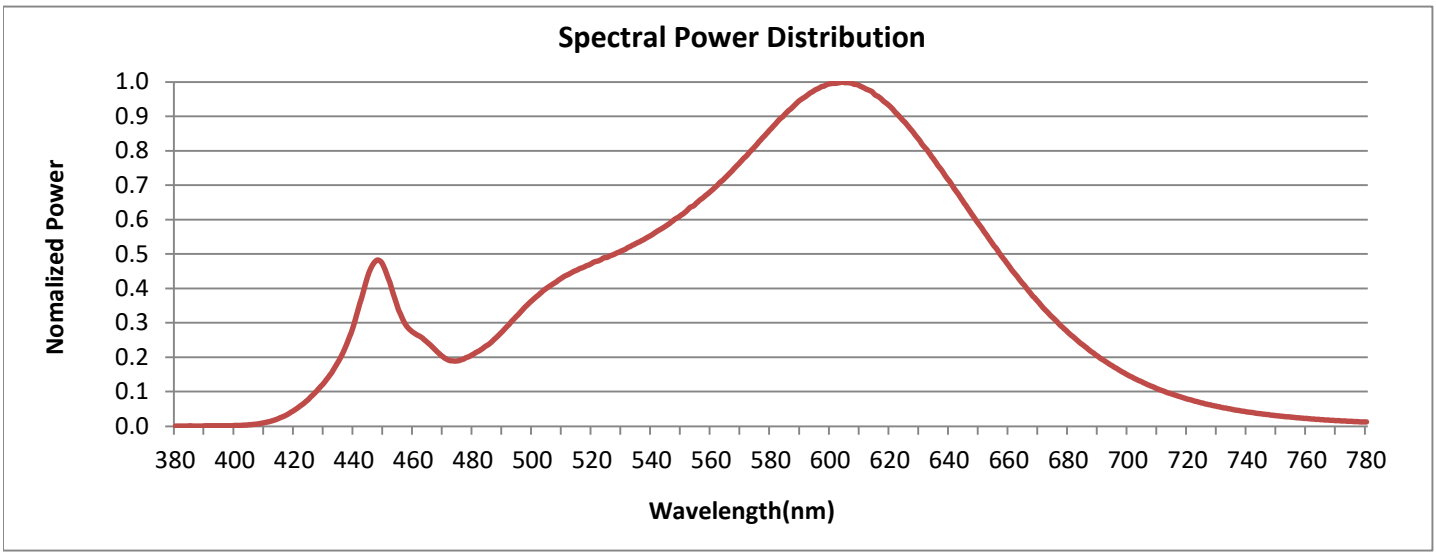


FIG. 1 LUMINAIRE

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Colorimetry Test Results

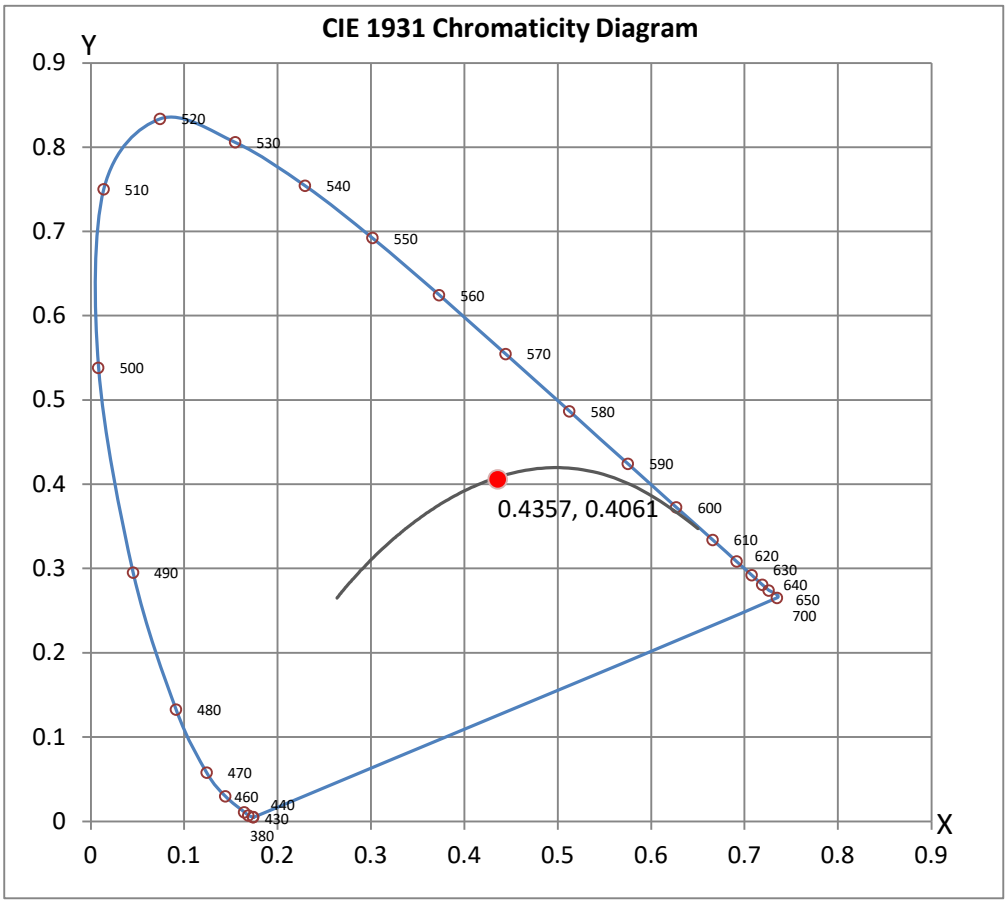


CRI & CCT

x	0.4357
y	0.4061
u'	0.2489
v'	0.5220
CRI	83.70
CCT	3038
Duv	0.00098

R Values

R1	81.68
R2	91.00
R3	97.07
R4	82.94
R5	82.81
R6	90.33
R7	83.55
R8	60.15
R9	9.34
R10	80.28
R11	83.01
R12	77.22
R13	83.74
R14	98.79
R15	73.84



Test Methods

Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Disclaimers:

The results related only to the samples as received and tested. This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government.

Report Prepared by : JG

Test Report Reviewed by:
Jason Gee

**Attached are photometric data reports.*

Addendum A

Report Amendment Log

Date	Reference No.	Revision Description	Revision By

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Photometric Test Report

IES ROAD REPORT
PHOTOMETRIC FILENAME : L122510911.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L122510911
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 12/23/2025
[MANUFAC] FX Luminaire / Lumascape
[LUMCAT] TN-61-E6-S-FL-CW-FW
[LUMINAIRE] TN61, MR16ECO 6.0VA, 3000K, Flood, Cowling, Flat White
[BALLASTCAT] Custom
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 12VAC
[TEST PROCEDURE] IESNA:LM-79-19

CHARACTERISTICS

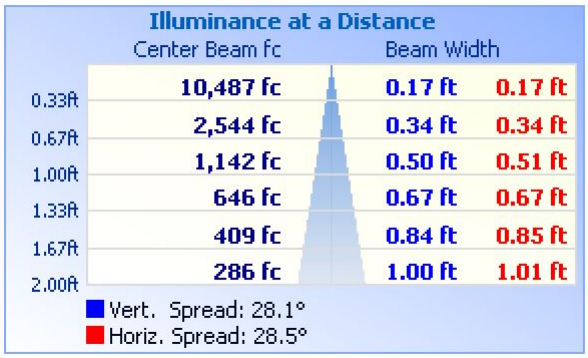
IES Classification	Type I
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	421
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	108
Total Luminaire Watts	3.91
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Maximum Candela	1142
Maximum Candela Angle	180H 0V
Maximum Candela (<90 Degrees Vertical)	1142
Maximum Candela Angle (<90 Degrees Vertical)	180H 0V
Maximum Candela At 90 Degrees Vertical	6 (1.4% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	7 (1.7% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

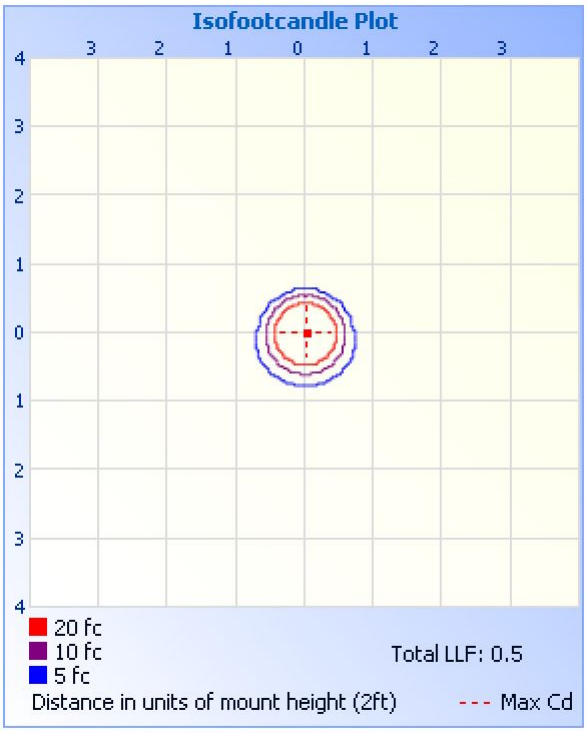
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Calculations based on published IES Methods and recommendations, values rounded for display purposes.
Results derived from content of manufacturers photometric file.

IES ROAD REPORT
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LUMINAIRE CLASSIFICATION SYSTEM (LCS)

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	168.4	N.A.	40.0
FM - Front-Medium (30-60)	52.8	N.A.	12.6
FH - Front-High (60-80)	7.4	N.A.	1.8
FVH - Front-Very High (80-90)	2.6	N.A.	0.6
BL - Back-Low (0-30)	163.5	N.A.	38.9
BM - Back-Medium (30-60)	22.6	N.A.	5.4
BH - Back-High (60-80)	1.5	N.A.	0.4
BVH - Back-Very High (80-90)	0.1	N.A.	0.0
UL - Uplight-Low (90-100)	1.5	N.A.	0.4
UH - Uplight-High (100-180)	0.4	N.A.	0.1
Total	420.8	N.A.	100.0
BUG Rating	B1-U1-G0		





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CANDELA TABULATION

Vert. Angles	Horizontal Angles									
	0	**10**	**20**	**30**	**40**	**50**	**60**	**70**	**80**	**90**
0	1142	1142	1142	1142	1142	1142	1142	1142	1142	1142
5	1045	1013	1052	1015	1054	1014	1059	1020	1064	1034
10	806	746	809	759	814	764	827	770	833	791
15	545	499	546	502	550	506	559	509	566	531
20	335	311	336	312	343	310	344	306	349	318
25	204	185	205	187	209	190	208	189	209	192
30	136	125	135	125	134	124	134	123	131	123
35	93	89	94	88	94	87	94	85	92	86
40	67	63	67	63	68	62	66	59	52	38
45	48	45	49	45	48	44	44	31	24	14
50	35	32	35	33	34	30	24	16	9	6
55	25	23	25	23	24	17	15	7	6	5
60	16	15	16	14	14	11	8	6	5	5
65	11	10	11	10	10	7	7	6	5	4
70	8	8	8	7	7	7	6	5	5	4
75	8	7	7	7	7	6	6	5	4	3
80	7	7	7	7	6	6	5	4	3	2
85	7	7	6	6	6	5	4	3	2	1
90	6	6	6	5	5	4	3	2	1	0
95	5	5	5	4	4	3	2	1	0	0
100	4	3	3	2	2	1	1	0	0	0
105	2	1	1	1	1	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0

Vert. Angles	Horizontal Angles								
	100	**110**	**120**	**130**	**140**	**150**	**160**	**170**	**180**
0	1142	1142	1142	1142	1142	1142	1142	1142	1142
5	1008	1053	1010	1054	1016	1055	1018	1059	1020
10	756	817	757	818	759	814	762	814	752
15	497	549	495	549	496	545	496	544	503
20	301	334	298	332	296	327	297	322	296
25	179	197	176	193	173	191	169	192	170
30	115	123	111	119	108	119	108	118	106
35	58	71	51	69	43	47	41	58	46
40	23	23	14	20	9	17	10	18	12
45	6	5	4	4	3	3	2	3	2
50	5	4	3	3	2	2	1	1	1
55	4	4	3	2	2	2	1	1	1

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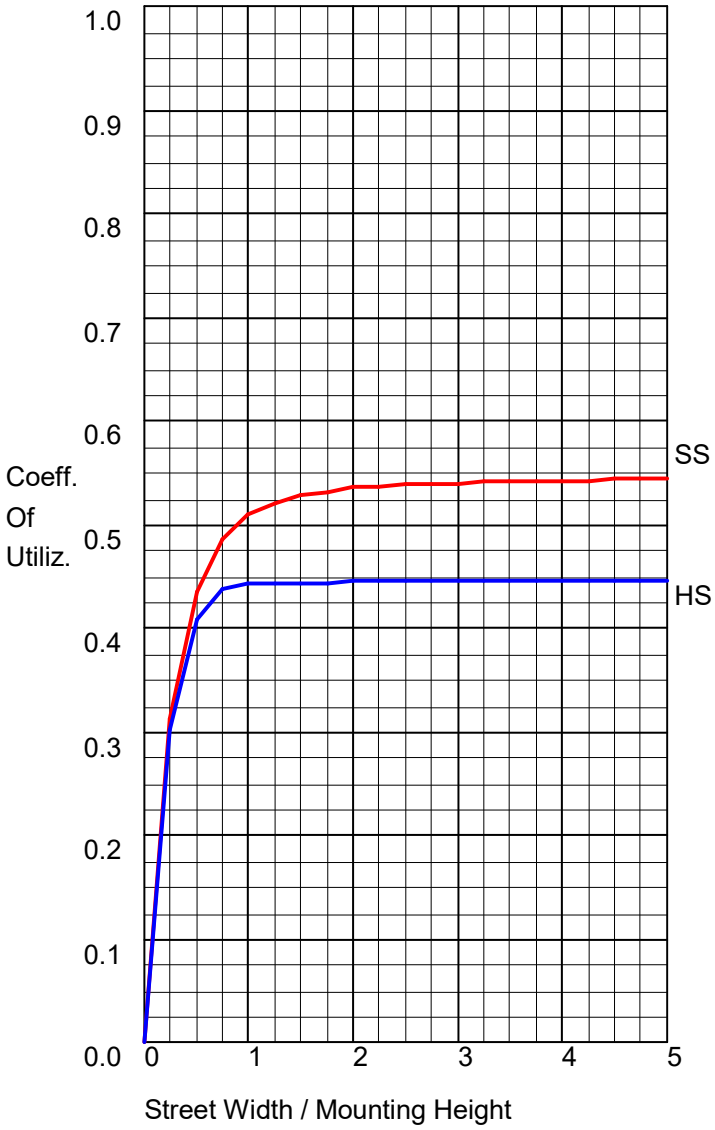
CANDELA TABULATION - (Cont.)

60	4	3	3	2	2	2	1	1	1
65	4	3	3	2	2	1	1	1	1
70	3	3	2	2	1	1	0	0	0
75	2	2	1	1	1	0	0	0	0
80	1	1	1	1	0	0	0	0	0
85	1	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0

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COEFFICIENTS OF UTILIZATION



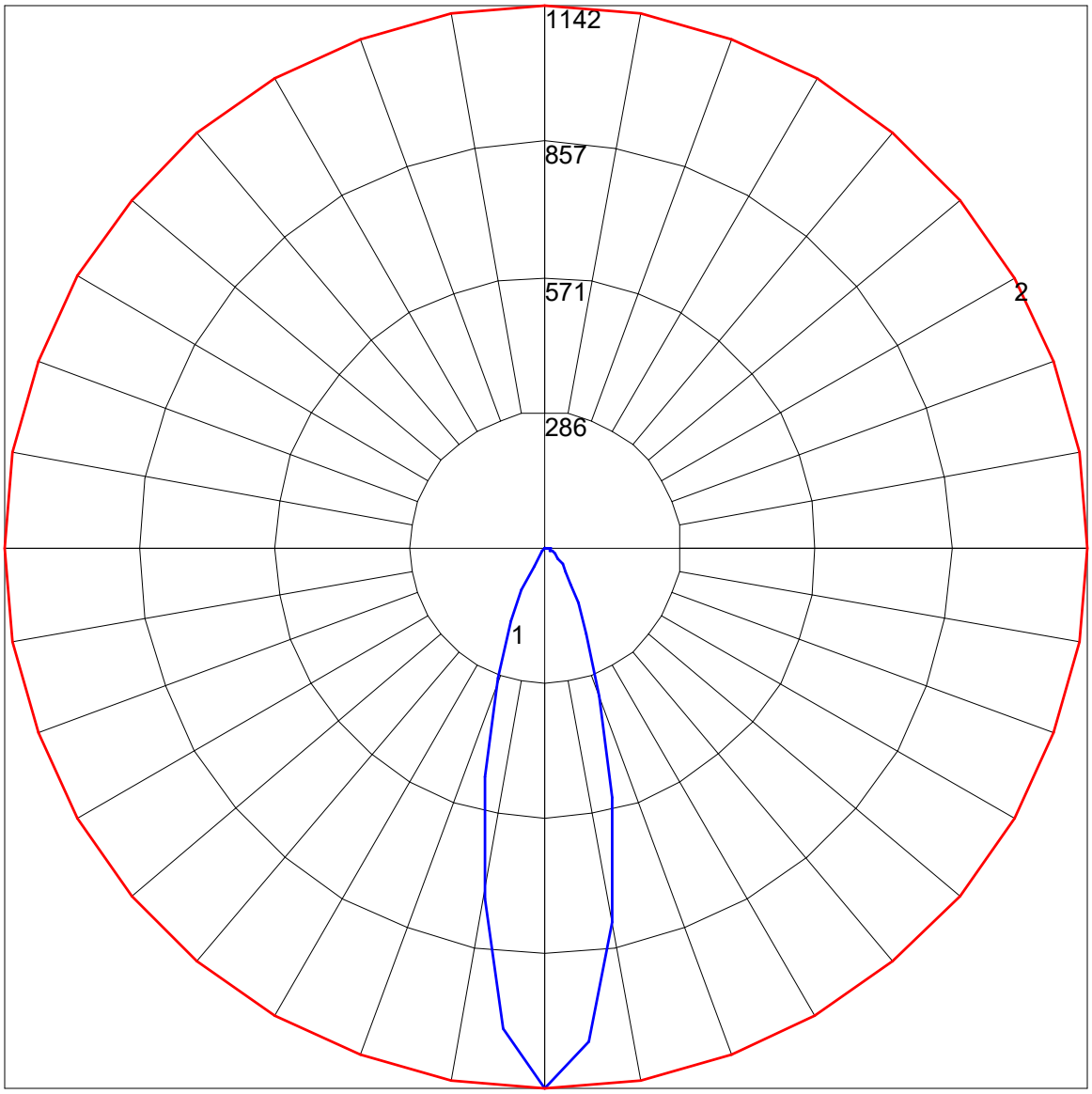
FLUX DISTRIBUTION

	Lumens	Percent Of Luminaire
Downward Street Side	231.2	54.9
Downward House Side	187.8	44.6
Downward Total	419.0	99.6
Upward Street Side	1.9	0.5
Upward House Side	0.0	0.0
Upward Total	1.9	0.5
Total Flux	420.9	100.0

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POLAR GRAPH

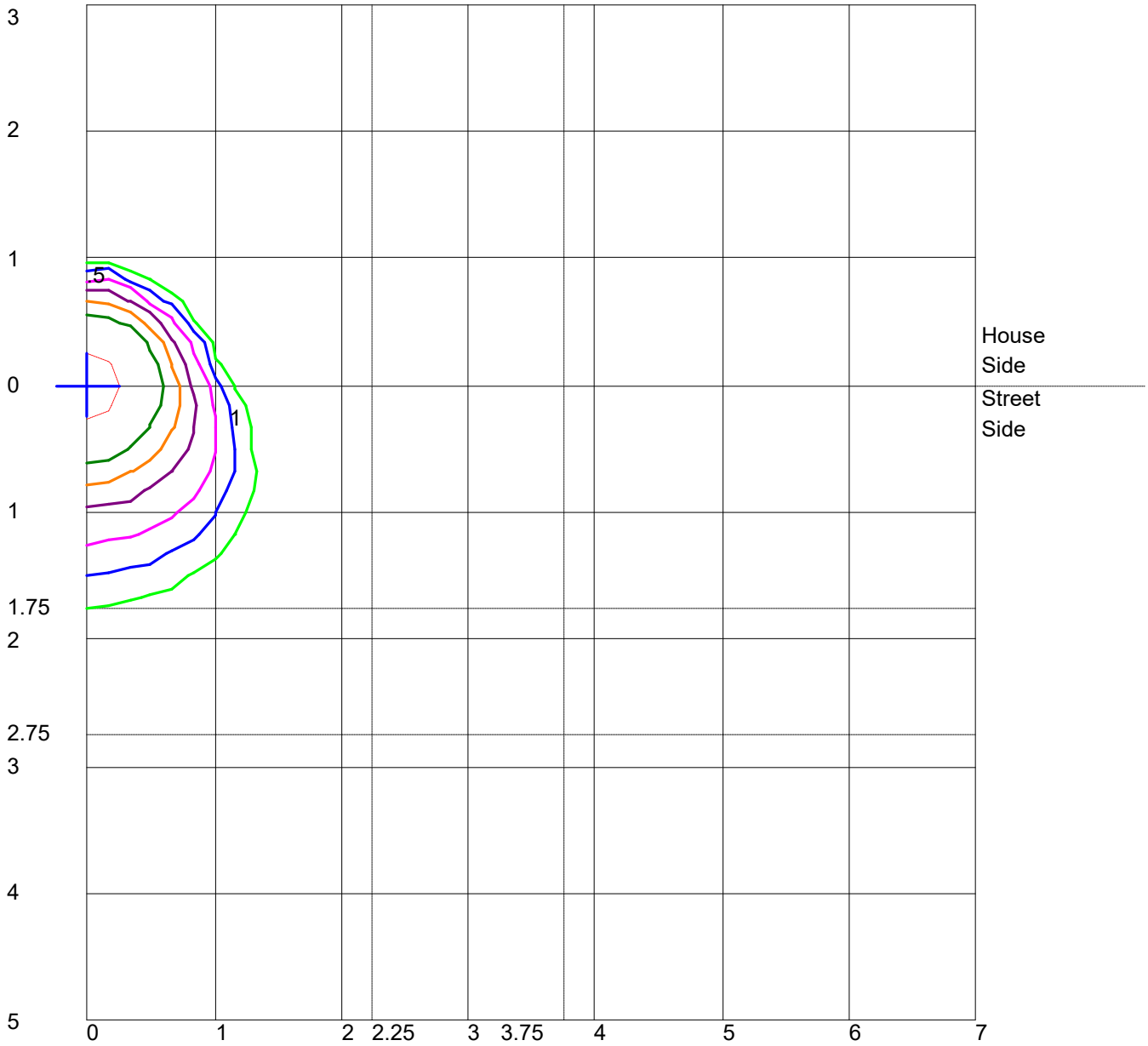


Maximum Candela = 1142 Located At Horizontal Angle = 180, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (180 - 0) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)

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ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



Distance In Units Of Mounting Height
Values Based On 2 Foot Mounting Height
1/2 Maximum Candela Trace Shown As Dashed Curve
(+) = Maximum Candela Point

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