

# AMERICAN GAS LAMP WORKS TEST REPORT

**SCOPE OF WORK**

LED Performance Testing

**MODEL NUMBER**

Model # 3701 Old Allegheny Lamp

**PROJECT NUMBER**

G105724524

**REPORT NUMBER**

105724524CRT-004

**ISSUE DATE**

2/27/2024

**REVISION DATE**

None

**TEST DATES**

2/27/2024

**DOCUMENT CONTROL NUMBER**

RTTDS-R-AMER-Test-3407

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**REPORT NUMBER**

105724524CRT-004

**MODEL NUMBER(s)**

MODEL # 3701 OLD ALLEGHENY LAMP

**REPORT RENDERED TO:**

AMERICAN GAS LAMP WORKS  
1299 4TH AVE  
NEW KENSINGTON, PA 15068

**STATEMENT OF LIMITATION**

NVLAP Lab Code 100402-0. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. government.

**AUTHORIZATION**

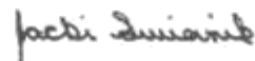
The testing performed was authorized by signed quote number QU-01416591.

**TEST STANDARDS**

ANSI/IES LM-79-19: Optical and Electrical Measurements of Solid State Lighting Products  
IES LM-79-08: Electrical and Photometric Measurements of Solid State Lighting

In Charge of Testing:

Reviewer:



Melanie Brittain  
Senior Associate Engineer  
Lighting Division

Jacki Swiernik  
Staff Engineer  
Lighting Division

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**SAMPLE INFORMATION**

**REPORT NO. 105724524CRT-004**

**ITEMS RECEIVED**

Item No.	Control No.	Model No.	Description	Type	Received Date	Sampling Date
1	CRT2402191502-002	Model # 3701 Old Allegheny Lamp	4 Sided Outdoor Lamp with Frosted Poly Lens	Production	2/19/2024	N/A
2		CS15761_STRADA-2x2MX-8-SCL	Type II Lens			
3		CS15751_STRADA-2x2MX-8-DWC	Type III Lens			
4		CS15750_STRADA-2x2MX-8-T4-B	Type IV Lens			
5		CS15763_STRADA-2x2MX-8-VSM	Type V Lens			

**TESTED SAMPLE CONFIGURATIONS**

Config No.	Tested Model No.	Item Nos. Utilized
1	Model # 3701 Old Allegheny Lamp Type II	1, 2
2	Model # 3701 Old Allegheny Lamp Type III	1, 3
3	Model # 3701 Old Allegheny Lamp Type IV	1, 4
4	Model # 3701 Old Allegheny Lamp Type V	1, 5

**SUMMARY**

**REPORT NO. 105724524CRT-004**

**PRODUCT INFORMATION AND SUMMARY OF DATA**

<b>Test Configuration 1</b>	
<b>Product Model No.:</b>	Model # 3701 Old Allegheny Lamp
<b>Product Description:</b>	4 Sided Outdoor Lamp with Frosted Poly Lens
<b>LED Model No.:</b>	Lumileds XR-7070
<b>Driver Model No.:</b>	Inventronics EUM-050S150DT

**TEST METHODS**

**SEASONING IN SAMPLE ORIENTATION - LED PRODUCTS**

No seasoning was performed in accordance with ANSI/IES LM-79-19

**DUT SAMPLING METHOD**

For testing plans, program requirements, or shipments requiring sampling of DUTs or components, the selections for each test were random. All samples are marked with control numbers regardless of being tested.

**TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING**

A Type C Mirror Goniophotometer system was used to measure the luminous intensity (candela) at each angle of distribution for the DUT. Electrical measurements of the unit were measured using a power analyzer. Each DUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature and relative humidity was measured at 25°C ± 1.2°C and 10-65% respectively at a position within 1.5m and at equal height of the DUT. Stabilization procedures to LM-79-19 were followed. The test distance was ≥ 5x the longest luminous dimension of the DUT.

ANSI/IES Technical Memorandums (TM) reported are not NVLAP accredited

**TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING**

**REPORT NO. 105724524CRT-004**

Test Configuration	Tested Model No.	Pass/Fail/NA
1	Model # 3701 Old Allegheny Lamp Type II	NA

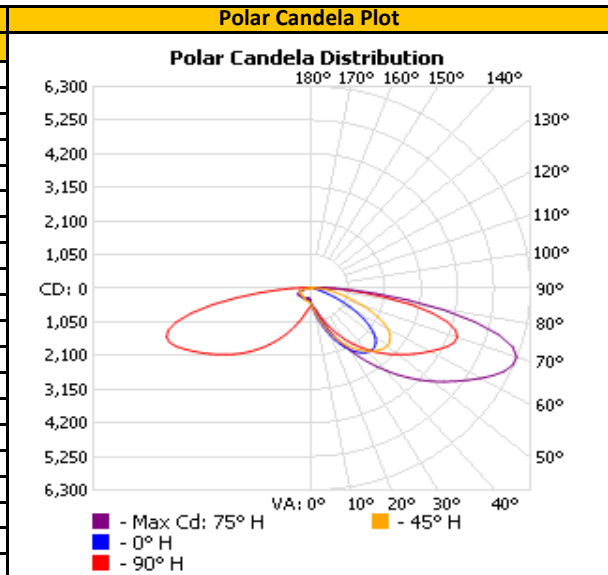
**PHOTOMETRIC AND ELECTRICAL MEASUREMENTS**

Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ( )
Down	120.1	906.0	108.7	0.999

Light Output (lm)	Efficacy (lm/W)
9772.1	89.9

**LUMINOUS INTENSITY SUMMARY (candela)**

Vertical Angle (°)	Horizontal				
	0	30	45	65	90
0	543	543	543	543	543
5	708	697	675	640	579
10	942	915	875	811	688
15	1231	1191	1141	1072	878
20	1568	1487	1460	1428	1132
25	1912	1773	1782	1856	1439
30	2220	2023	2077	2345	1787
35	2446	2221	2332	2866	2145
40	2576	2359	2552	3394	2504
45	2565	2426	2728	3934	2863
50	2389	2383	2820	4435	3209
55	2014	2186	2756	4934	3565
60	1500	1810	2530	5392	3932
65	954	1329	2090	5559	4301
70	495	838	1550	5369	4458
75	236	488	1045	4449	4044
80	120	290	670	2923	2898
85	68	186	415	1432	1486
90	39	120	244	551	579
95	25	79	140	207	222
100	19	55	84	95	110
105	15	40	55	54	63
110	12	28	37	34	37
115	11	20	25	22	25
120	10	15	18	16	18
125	10	11	12	11	15
130	9	8	8	8	11
135	7	5	4	5	8
140	5	2	1	2	6
145	3	0	0	0	3
150	0	0	0	0	0
155	0	0	0	0	0
160	0	0	0	0	0
165	0	0	0	0	0
170	0	0	0	0	0
175	0	0	0	0	0
180	0	0	0	0	0



Full luminous intensity matrix found in .IES file

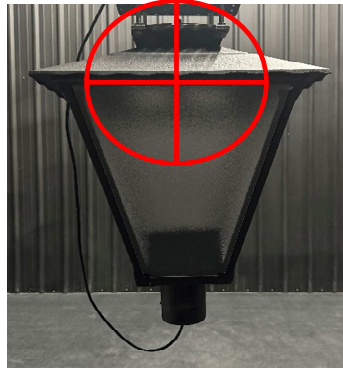
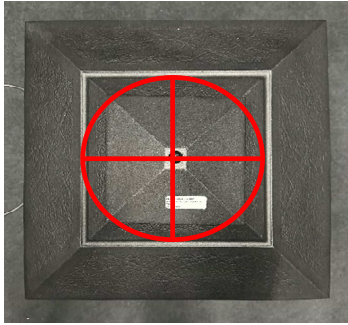
**REPORT NO. 105724524CRT-004**

**ORIENTATION AND ALIGNMENT OF DUT**

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
1.19	1.19	1.29
0°-180° H	90°-270° H	0°-180° V

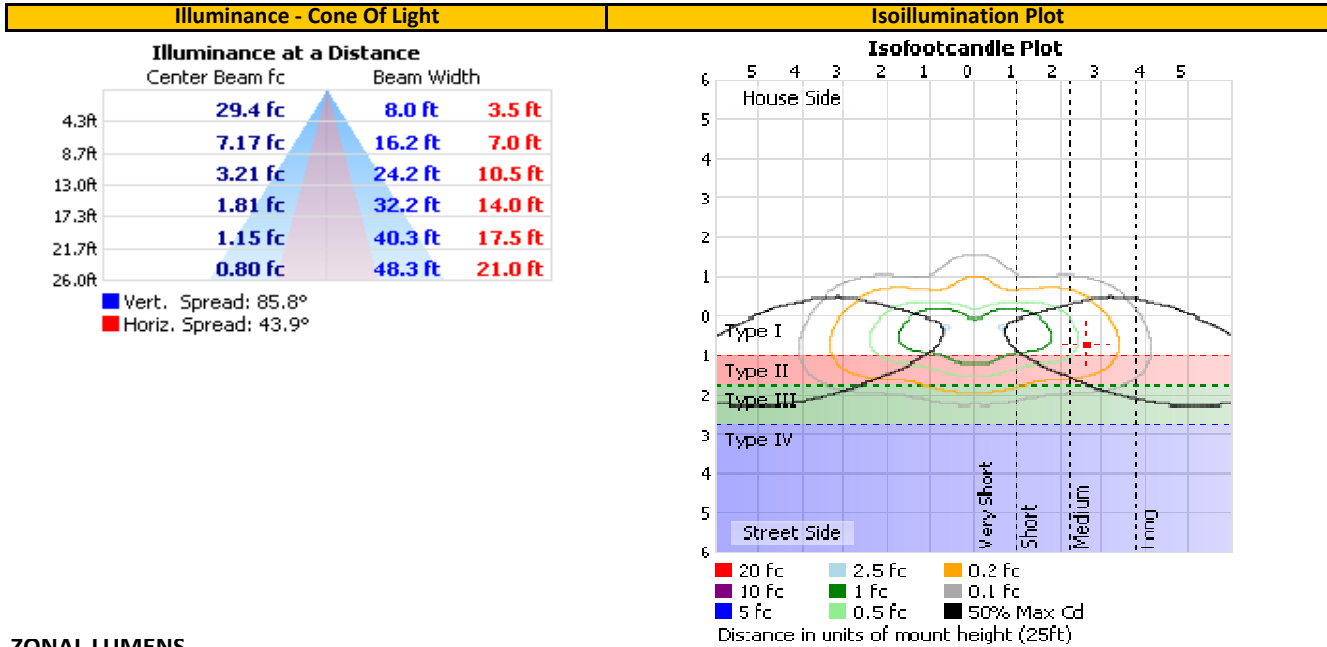
Test Distance (ft)
29.2

**PHOTOMETRIC CENTER OF DUT**



**REPORT NO. 105724524CRT-004**

**ILLUMINANCE SUMMARY**



**ZONAL LUMENS**

**Zonal Lumen Summary**

Zone (°)	Lumens	Luminaire
0-30	850.6	8.7%
0-40	1,846.4	18.9%
0-60	5,168.7	52.9%
60-90	4,359.5	44.6%
70-100	2,507.0	25.7%
90-120	227.0	2.3%
0-90	9,528.2	97.5%
90-180	243.9	2.5%
0-180	9,772.1	100.0%

Zone (°)	Lumens	Total	Zone (°)	Lumens	Total
0-10	57.5	0.6%	90-100	154.2	1.6%
10-20	235.4	2.4%	100-110	50.8	0.5%
20-30	557.7	5.7%	110-120	22.1	0.2%
30-40	995.7	10.2%	120-130	10.9	0.1%
40-50	1467.6	15.0%	130-140	4.8	0.0%
50-60	1854.7	19.0%	140-150	1.1	0.0%
60-70	2006.6	20.5%	150-160	0.0	0.0%
70-80	1658.2	17.0%	160-170	0.0	0.0%
80-90	694.7	7.1%	170-180	0.0	0.0%

**LUM. CLASSIFICATION SYSTEM (LCS)**

CS Zone	Lumens	% Lamp	% Lum
FL (0-30)	618.4	N.A.	6.3
FM (30-60)	3389.7	N.A.	34.7
FH (60-80)	2611.4	N.A.	26.7
FVH (80-90)	440.1	N.A.	4.5
BL (0-30)	231.0	N.A.	2.4
BM (30-60)	927.3	N.A.	9.5
BH (60-80)	1053.6	N.A.	10.8
BVH (80-90)	254.7	N.A.	2.6
UL (90-100)	154.1	N.A.	1.6
UH (100-180)	89.7	N.A.	0.9
Total	9770.0	N.A.	100.0
<b>BUG Rating</b>	<b>B3-U3-G3</b>		

**TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING**

**REPORT NO. 105724524CRT-004**

Test Configuration	Tested Model No.	Pass/Fail/NA
2	Model # 3701 Old Allegheny Lamp Type III	NA

**PHOTOMETRIC AND ELECTRICAL MEASUREMENTS**

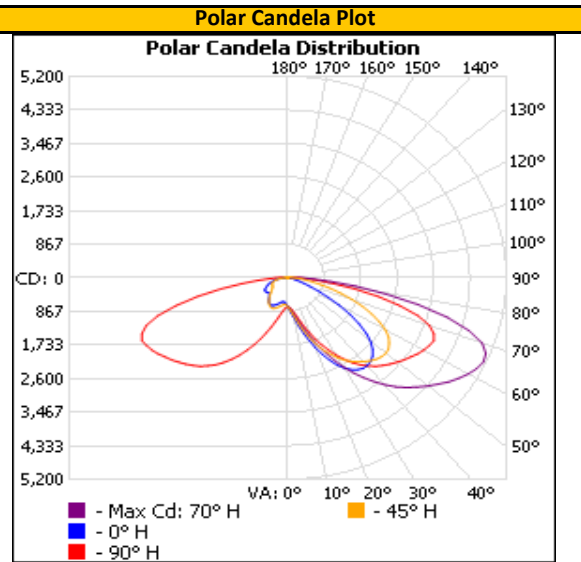
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ( )
Down	120.1	906.6	108.8	0.999

Light Output (lm)	Efficacy (lm/W)
9816.8	90.2

**LUMINOUS INTENSITY SUMMARY (candela)**

Vertical Angle (°)	Horizontal				
	0	30	45	65	90
0	743	743	743	743	743
5	896	890	870	838	790
10	1153	1120	1082	1029	934
15	1497	1431	1387	1319	1181
20	1912	1778	1738	1710	1511
25	2339	2108	2081	2162	1901
30	2681	2385	2383	2642	2301
35	2891	2583	2628	3100	2664
40	2946	2715	2818	3520	2960
45	2850	2762	2970	3888	3192
50	2578	2672	3035	4188	3382
55	2070	2386	2940	4458	3559
60	1410	1885	2677	4727	3729
65	803	1305	2202	4754	3833
70	412	810	1621	4456	3584
75	222	485	1054	3460	2759
80	136	304	614	2067	1613
85	84	200	339	923	717
90	50	128	193	343	293
95	33	82	119	147	154
100	24	57	79	83	98
105	19	42	55	54	61
110	16	31	39	37	39
115	14	24	28	26	27
120	13	18	21	19	21
125	12	14	15	15	18
130	11	10	11	11	15
135	9	7	7	7	11
140	7	4	3	4	8
145	4	1	0	2	5
150	1	0	0	0	2
155	0	0	0	0	0
160	0	0	0	0	0
165	0	0	0	0	0
170	0	0	0	0	0
175	0	0	0	0	0
180	0	0	0	0	0

Full luminous intensity matrix found in .IES file





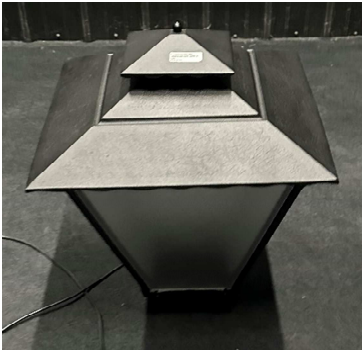
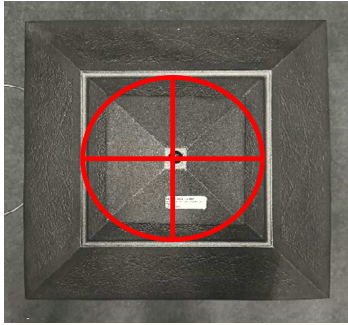
**REPORT NO. 105724524CRT-004**

**ORIENTATION AND ALIGNMENT OF DUT**

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
1.19	1.19	1.29
0°-180° H	90°-270° H	0°-180° V

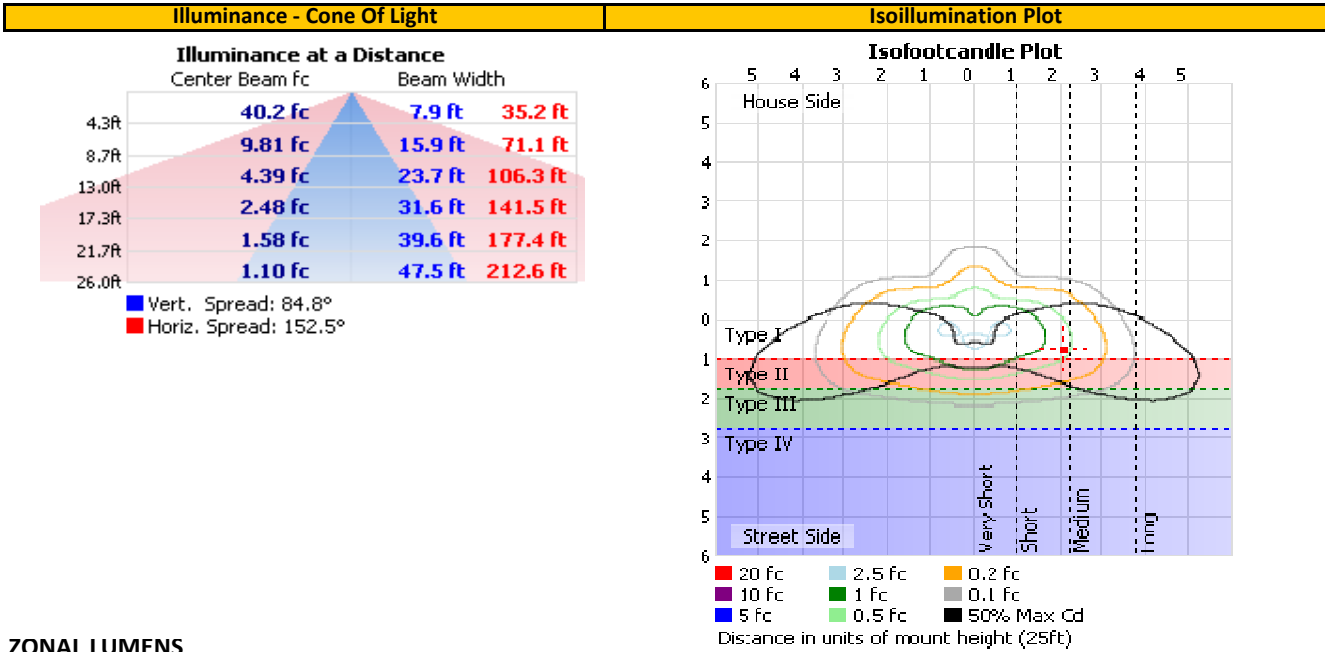
Test Distance (ft)
29.2

**PHOTOMETRIC CENTER OF DUT**



**REPORT NO. 105724524CRT-004**

**ILLUMINANCE SUMMARY**



**ZONAL LUMENS**

**Zonal Lumen Summary**

Zone (°)	Lumens	Luminaire
0-30	1,147.2	11.7%
0-40	2,399.5	24.4%
0-60	5,983.3	60.9%
60-90	3,612.8	36.8%
70-100	1,878.0	19.1%
90-120	198.5	2.0%
0-90	9,596.1	97.8%
90-180	220.6	2.2%
0-180	9,816.8	100.0%

Zone (°)	Lumens	Total	Zone (°)	Lumens	Total
0-10	78.9	0.8%	90-100	121.2	1.2%
10-20	322.2	3.3%	100-110	52.1	0.5%
20-30	746.1	7.6%	110-120	25.2	0.3%
30-40	1252.3	12.8%	120-130	13.6	0.1%
40-50	1673.7	17.0%	130-140	6.6	0.1%
50-60	1910.1	19.5%	140-150	1.9	0.0%
60-70	1856.0	18.9%	150-160	0.1	0.0%
70-80	1302.0	13.3%	160-170	0.0	0.0%
80-90	454.9	4.6%	170-180	0.0	0.0%

**LUM. CLASSIFICATION SYSTEM (LCS)**

CS Zone	Lumens	% Lamp	% Lum
FL (0-30)	745.7	N.A.	7.6
FM (30-60)	3540.0	N.A.	36.1
FH (60-80)	2211.8	N.A.	22.5
FVH (80-90)	289.5	N.A.	2.9
BL (0-30)	400.1	N.A.	4.1
BM (30-60)	1295.5	N.A.	13.2
BH (60-80)	946.5	N.A.	9.6
BVH (80-90)	165.4	N.A.	1.7
UL (90-100)	121.2	N.A.	1.2
UH (100-180)	99.4	N.A.	1.0
<b>Total</b>	9815.1	N.A.	100.0
<b>BUG Rating</b>	<b>B2-U3-G3</b>		

**TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING**

**REPORT NO. 105724524CRT-004**

Test Configuration	Tested Model No.	Pass/Fail/NA
3	Model # 3701 Old Allegheny Lamp Type IV	NA

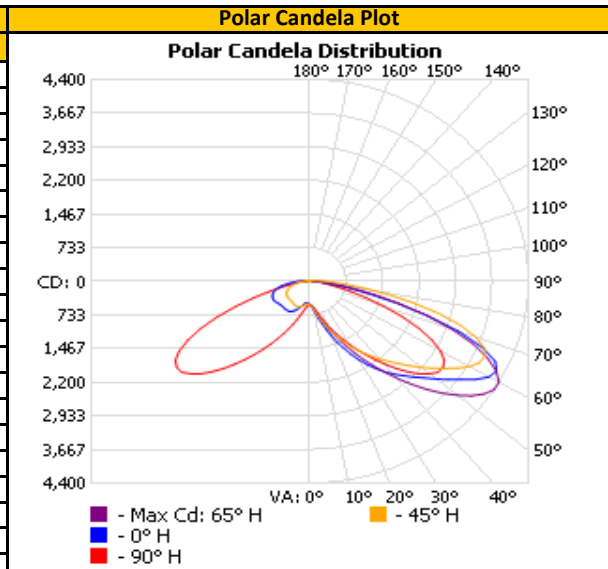
**PHOTOMETRIC AND ELECTRICAL MEASUREMENTS**

Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ( )
Down	120.09	906.5	108.8	0.999

Light Output (lm)	Efficacy (lm/W)
9687.3	89.0

**LUMINOUS INTENSITY SUMMARY (candela)**

Vertical Angle (°)	Horizontal				
	0	30	45	65	90
0	504	504	504	504	504
5	583	574	568	553	534
10	735	709	691	663	623
15	960	906	876	842	780
20	1262	1141	1107	1099	995
25	1602	1414	1368	1414	1260
30	1970	1682	1640	1801	1577
35	2320	1947	1915	2260	1948
40	2638	2207	2211	2774	2356
45	2946	2492	2538	3329	2787
50	3308	2819	2915	3859	3133
55	3727	3226	3311	4279	3271
60	4164	3670	3713	4393	3041
65	4118	3956	3879	3946	2425
70	3192	3699	3563	3039	1584
75	1785	2641	2676	1858	844
80	740	1449	1557	929	401
85	266	626	727	412	215
90	105	254	316	201	143
95	52	122	154	116	104
100	33	74	93	77	73
105	23	50	62	52	48
110	17	35	43	36	31
115	14	25	30	24	22
120	12	18	21	17	17
125	11	13	15	12	14
130	9	9	10	9	12
135	7	6	6	6	9
140	5	3	3	4	7
145	3	1	0	2	4
150	1	0	0	0	2
155	0	0	0	0	1
160	0	0	0	0	0
165	0	0	0	0	0
170	0	0	0	0	0
175	0	0	0	0	0
180	0	0	0	0	0



Full luminous intensity matrix found in .IES file

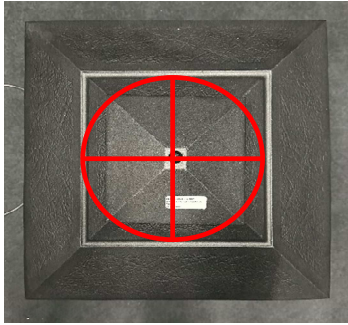
**REPORT NO. 105724524CRT-004**

**ORIENTATION AND ALIGNMENT OF DUT**

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
1.19	1.19	1.29
0°-180° H	90°-270° H	0°-180° V

Test Distance (ft)
29.2

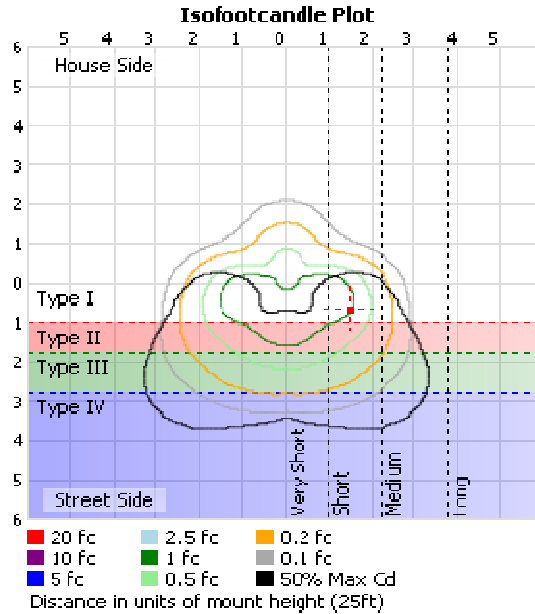
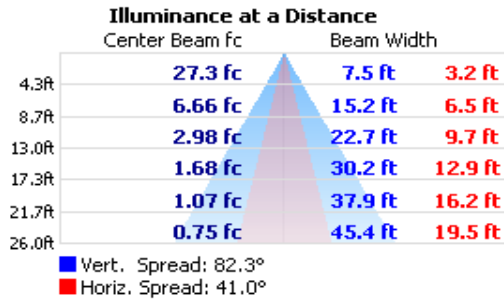
**PHOTOMETRIC CENTER OF DUT**



**REPORT NO. 105724524CRT-004**

**ILLUMINANCE SUMMARY**

**Illuminance - Cone Of Light      Isoillumination Plot**



**ZONAL LUMENS**

**Zonal Lumen Summary**

Zone (°)	Lumens	Luminaire
0-30	782.6	8.1%
0-40	1,731.5	17.9%
0-60	5,366.1	55.4%
60-90	4,087.9	42.2%
70-100	1,942.1	20.0%
90-120	213.3	2.2%
0-90	9,454.0	97.6%
90-180	233.3	2.4%
0-180	9,687.3	100.0%

Zone (°)	Lumens	Total	Zone (°)	Lumens	Total
0-10	53.2	0.5%	90-100	131.6	1.4%
10-20	216.0	2.2%	100-110	56.7	0.6%
20-30	513.4	5.3%	110-120	25.1	0.3%
30-40	948.9	9.8%	120-130	12.4	0.1%
40-50	1512.6	15.6%	130-140	5.8	0.1%
50-60	2122.0	21.9%	140-150	1.7	0.0%
60-70	2277.4	23.5%	150-160	0.2	0.0%
70-80	1379.1	14.2%	160-170	0.0	0.0%
80-90	431.4	4.5%	170-180	0.0	0.0%

**LUM. CLASSIFICATION SYSTEM (LCS)**

CS Zone	Lumens	% Lamp	% Lum
FL (0-30)	494.1	N.A.	5.1
FM (30-60)	3434.8	N.A.	35.5
FH (60-80)	2924.8	N.A.	30.2
FVH (80-90)	288.5	N.A.	3.0
BL (0-30)	287.4	N.A.	3.0
BM (30-60)	1147.2	N.A.	11.8
BH (60-80)	732.2	N.A.	7.6
BVH (80-90)	143.0	N.A.	1.5
UL (90-100)	131.5	N.A.	1.4
UH (100-180)	101.7	N.A.	1.1
Total	9685.2	N.A.	100.0
<b>BUG Rating</b>	<b>B2-U3-G3</b>		

**TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING**

**REPORT NO. 105724524CRT-004**

Test Configuration	Tested Model No.	Pass/Fail/NA
4	Model # 3701 Old Allegheny Lamp Type V	NA

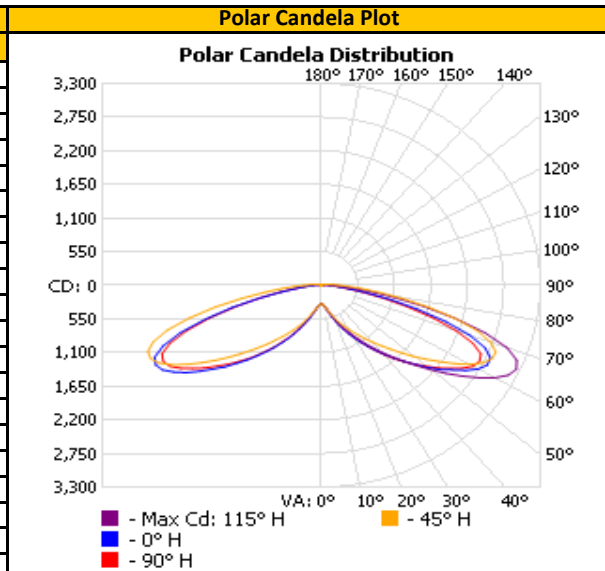
**PHOTOMETRIC AND ELECTRICAL MEASUREMENTS**

Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ( )
Down	120.08	906.4	108.8	0.999

Light Output (lm)	Efficacy (lm/W)
10307.4	94.8

**LUMINOUS INTENSITY SUMMARY (candela)**

Vertical Angle (°)	Horizontal				
	0	30	45	65	90
0	302	302	302	302	302
5	321	320	319	318	318
10	380	374	370	367	371
15	477	458	451	451	464
20	618	570	558	575	600
25	793	706	689	729	775
30	988	860	835	920	986
35	1209	1043	1007	1143	1220
40	1467	1263	1216	1413	1484
45	1754	1552	1476	1732	1760
50	2086	1894	1801	2104	2053
55	2405	2309	2172	2550	2368
60	2732	2739	2583	3021	2642
65	2815	3058	2838	3240	2651
70	2382	2894	2717	2982	2162
75	1499	2100	2094	2117	1338
80	700	1156	1241	1117	629
85	281	509	608	477	275
90	149	229	286	219	151
95	105	134	161	127	104
100	74	93	108	87	71
105	46	65	75	60	45
110	26	43	51	41	27
115	17	28	34	27	18
120	12	18	23	18	13
125	10	13	15	13	11
130	8	8	10	9	9
135	6	5	6	6	7
140	5	3	3	4	4
145	3	2	1	2	3
150	1	1	0	1	1
155	0	0	0	0	0
160	0	0	0	0	0
165	0	0	0	0	0
170	0	0	0	0	0
175	0	0	0	0	0
180	0	0	0	0	0



Full luminous intensity matrix found in .IES file

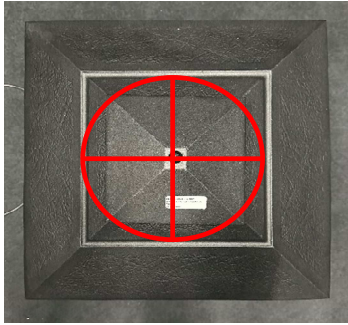
**REPORT NO. 105724524CRT-004**

**ORIENTATION AND ALIGNMENT OF DUT**

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
1.19	1.19	1.29
0°-180° H	90°-270° H	0°-180° V

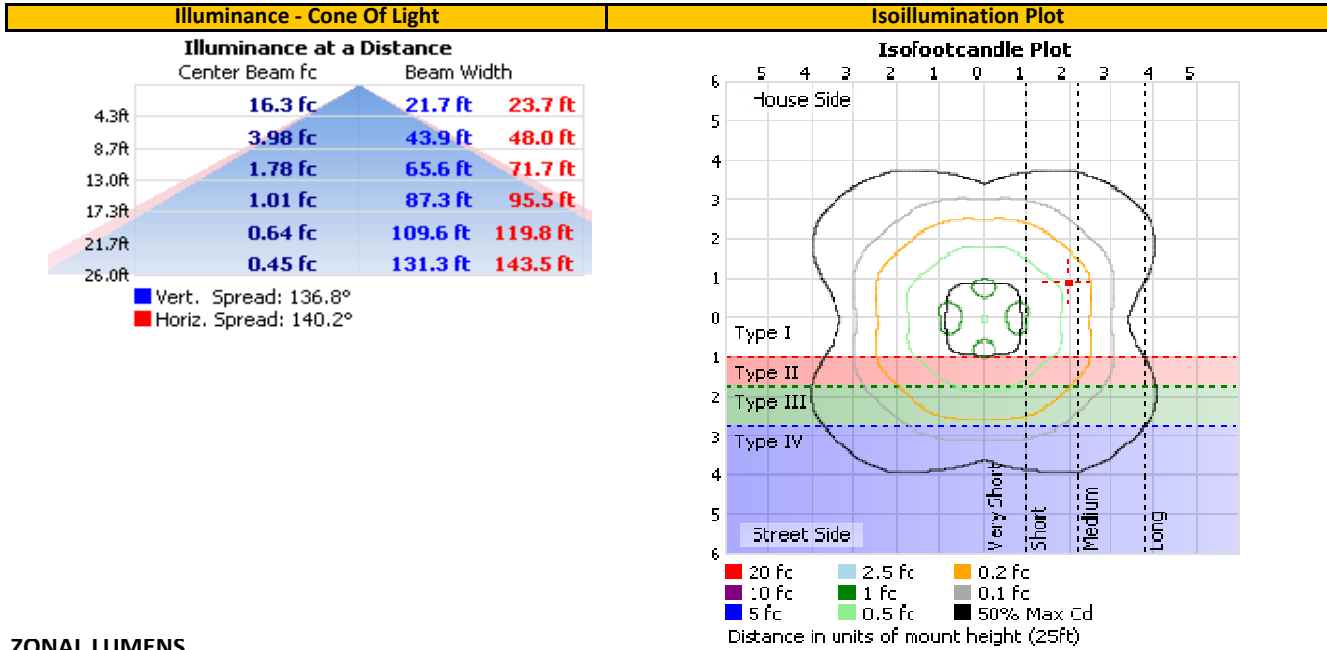
Test Distance (ft)
29.2

**PHOTOMETRIC CENTER OF DUT**



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**ILLUMINANCE SUMMARY**



**ZONAL LUMENS**

**Zonal Lumen Summary**

Zone (°)	Lumens	Luminaire
0-30	514.5	5.0%
0-40	1,233.2	12.0%
0-60	4,704.6	45.6%
60-90	5,348.8	51.9%
70-100	2,639.7	25.6%
90-120	236.2	2.3%
0-90	10,053.4	97.5%
90-180	254.0	2.5%
0-180	10,307.4	100.0%

Zone (°)	Lumens	Total	Zone (°)	Lumens	Total
0-10	32.1	0.3%	90-100	146.2	1.4%
10-20	134.9	1.3%	100-110	63.8	0.6%
20-30	347.4	3.4%	110-120	26.2	0.3%
30-40	718.6	7.0%	120-130	11.5	0.1%
40-50	1307.4	12.7%	130-140	4.8	0.0%
50-60	2164.1	21.0%	140-150	1.3	0.0%
60-70	2855.3	27.7%	150-160	0.1	0.0%
70-80	1955.2	19.0%	160-170	0.0	0.0%
80-90	538.4	5.2%	170-180	0.0	0.0%

**LUM. CLASSIFICATION SYSTEM (LCS)**

CS Zone	Lumens	% Lamp	% Lum
FL (0-30)	256.8	N.A.	2.5
FM (30-60)	2078.5	N.A.	20.2
FH (60-80)	2417.4	N.A.	23.5
FVH (80-90)	273.6	N.A.	2.7
BL (0-30)	256.8	N.A.	2.5
BM (30-60)	2109.5	N.A.	20.5
BH (60-80)	2393.4	N.A.	23.2
BVH (80-90)	264.9	N.A.	2.6
UL (90-100)	146.2	N.A.	1.4
UH (100-180)	107.7	N.A.	1.0
Total	10304.8	N.A.	100.0
<b>BUG Rating</b>	<b>B3-U3-G3</b>		



**EQUIPMENT LIST**

**REPORT NO. 105724524CRT-004**

#	Equipment	Model No	Control No.	Last Cal	Cal Due
1	LSI Type C Goniophotometer System	6440	---	2/1/2024	5/1/2024
2	Elgar AC Power Supply	CW1251	---	VBU	VBU
3	Yokogawa Power Analyzer	WT210	E464	6/21/2023	6/21/2024
4	Traceable Hygrothermometer	4800	L206	3/7/2023	3/7/2024
5	Omega Thermometer	DPI8-C24	M263	3/9/2023	3/9/2024
6	Tape Measure	Crescent	---	9/21/2021	9/21/2024

The AC power supplies used for testing have a crest factor capable of 0-3.5

**REVISION HISTORY**

#	Revision Date	Updated By	Reviewed By	Description of Change
---	None	---	---	---
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