

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: iO LED

Report Number: P592111

Luminaire Tested: **GRZ-15L-935-ASYMx40-X-UNV-STD-4F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592111
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2111-457-24)
Test Lab: INNOVATION CENTER
Issue Date: 2/2/2022
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: iO LED
Catalog Number: GRZ-15L-935-ASYMx40-X-UNV-STD-4F
Description: iO LED GRAZER WITH ASYMx40 OPTIC
1500 LUMENS PER FOOT, 4 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

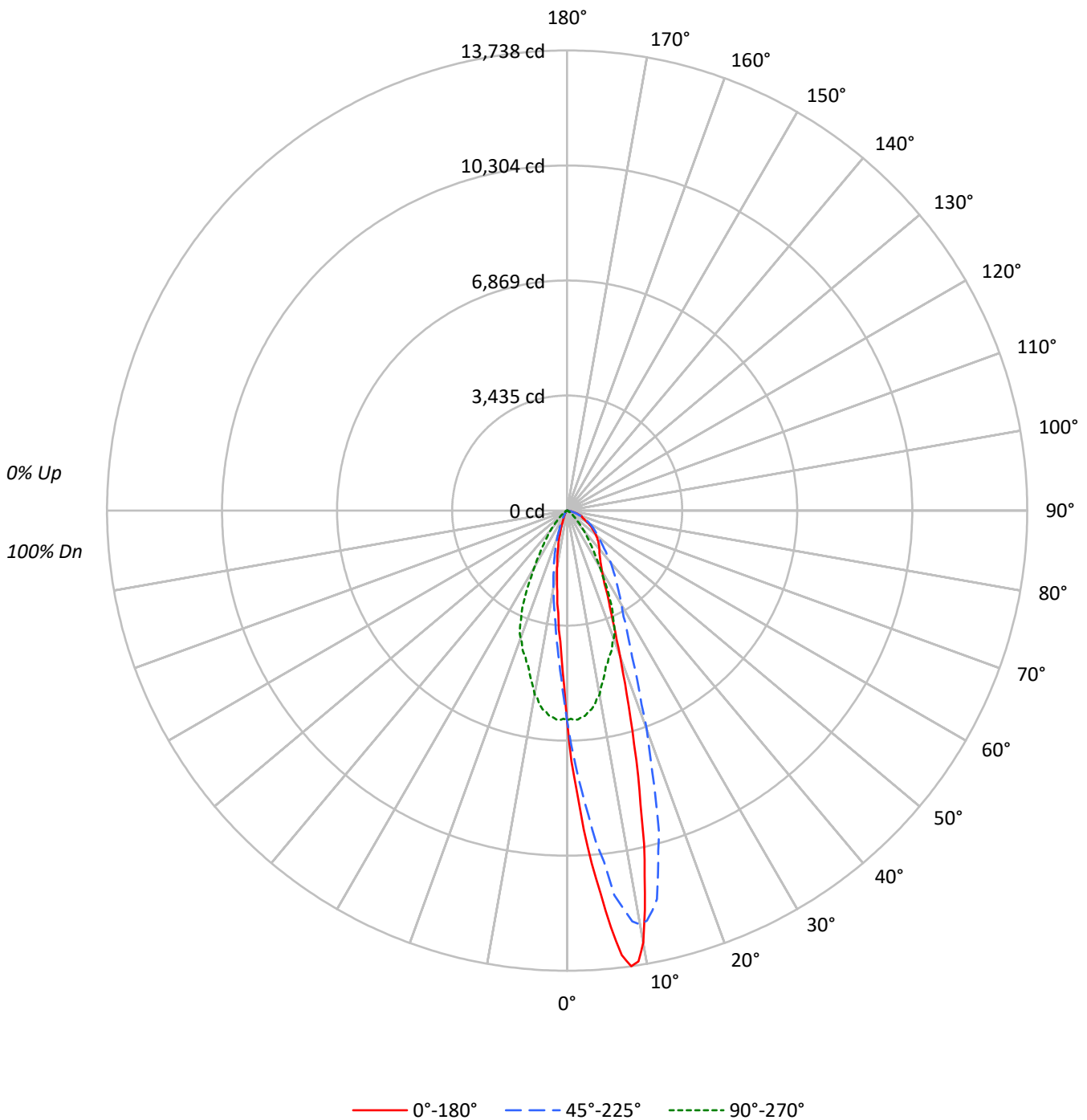
Lumens per Lamp: N/A
Luminaire Lumens: 5186.0 lumens
Efficiency: N/A
Efficacy: 92.6 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 56
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P592111
CATALOG NUMBER: GRZ-15L-935-ASYMx40-X-UNV-STD-4F

Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	112	109	106	104	110	107	104	102	103	101	99	99	98	96	96	94	93	91					91			
2	106	100	96	92	104	98	94	91	95	92	89	92	89	87	89	87	85	83					83			
3	100	92	87	82	98	91	86	81	88	84	80	86	82	79	83	80	78	76					76			
4	94	86	79	75	92	84	79	74	82	77	73	80	76	72	78	74	71	70					70			
5	89	80	73	68	87	79	73	68	77	71	67	75	70	67	73	69	66	65					65			
6	84	74	68	63	83	74	67	63	72	67	62	71	66	62	69	65	62	60					60			
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	65	61	58	56					56			
8	76	66	59	55	75	65	59	55	64	59	55	63	58	54	62	57	54	53					53			
9	72	62	56	52	71	62	56	52	61	55	51	60	55	51	59	54	51	50					50			
10	69	59	53	49	68	59	53	49	58	52	49	57	52	48	56	52	48	47					47			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	101068	101068	101068
5°	186114	99713	49683
10°	214583	91449	28429
15°	137207	78430	16333
20°	79051	69828	8210
25°	52029	55950	4304
30°	38734	36431	2802
35°	33650	23915	2010
40°	31569	15955	1585
45°	30033	9807	1349
50°	28047	5933	1078
55°	25540	3626	906
60°	22191	2254	865
65°	19484	1639	615
70°	19515	1265	505
75°	15072	1004	337
80°	8982	502	502
85°	3983	1000	0



TEST NUMBER: P592111

CATALOG NUMBER: GRZ-15L-935-ASYMx40-X-UNV-STD-4F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	660.9	12.7
10°-20°	1450.2	28.0
20°-30°	1107.9	21.4
30°-40°	744.2	14.3
40°-50°	535.0	10.3
50°-60°	372.0	7.2
60°-70°	213.4	4.1
70°-80°	88.1	1.7
80°-90°	14.4	0.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	3219.0	62.1
0°-40°	3963.1	76.4
0°-60°	4870.1	93.9
0°-90°	5186.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5186.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	6260	6260	6260	6260	6260	
5°	11483	9969	6152	3747	3065	1179
15°	8208	10517	4692	1471	977	2253
25°	2920	4413	3141	451	242	1368
35°	1707	2550	1213	145	102	1081
45°	1315	1519	430	70	59	1012
55°	907	988	129	38	32	807
65°	510	569	43	27	16	527
75°	242	209	16	11	5	256
85°	22	27	5	0	0	34
90°	0	0	0	0	0	



TEST NUMBER: P592111

CATALOG NUMBER: GRZ-15L-935-ASYMx40-X-UNV-STD-4F

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	6259.7	6259.7	6259.7	6259.7	6259.7	6259.7	6259.7	6259.7	6259.7	6259.7	6259.7
1°	7483.7	7209.9	7295.8	7209.9	7081.0	6989.8	6839.5	6689.1	6479.8	6270.4	6216.7
2°	8423.2	8305.1	8111.8	7993.7	7762.8	7703.8	7397.8	7107.9	6807.3	6345.6	6254.3
3°	9529.1	9249.9	9158.7	8911.7	8643.3	8396.3	7966.9	7521.3	6946.8	6420.7	6243.6
4°	10559.8	10345.1	10312.9	9990.8	9507.6	9131.8	8616.4	7902.4	7204.5	6485.1	6179.1
5°	11483.2	11472.5	11171.8	11048.4	10479.3	9969.3	9233.8	8353.4	7419.3	6576.4	6152.3
6°	12514.0	12433.4	12379.8	12036.2	11365.1	10543.7	9878.0	8750.7	7768.2	6608.6	6034.2
7°	13367.6	13330.0	13228.0	12900.5	12267.0	11569.1	10452.5	8992.2	7773.6	6495.9	5980.5
8°	13738.0	13636.0	13754.1	13453.5	12981.0	11982.5	10790.7	9411.0	7918.5	6512.0	5862.4
9°	13630.6	13507.1	13823.9	13684.3	13303.1	12417.3	11075.2	9480.8	7934.6	6393.9	5679.9
10°	13088.4	13217.2	13458.8	13668.2	13367.6	12551.5	11171.8	9582.8	7838.0	6275.8	5577.9
11°	12148.9	12240.2	12696.5	13233.3	13109.9	12471.0	11332.9	9534.5	7703.8	6109.4	5347.0
12°	11139.6	11477.8	11746.3	12417.3	12685.8	12213.3	11048.4	9309.0	7580.3	5910.7	5169.9
13°	10210.9	10307.5	10742.4	11488.6	12020.1	11902.0	10790.7	9153.3	7408.5	5760.4	4987.3
14°	9040.6	9147.9	9819.0	10554.5	11085.9	11204.1	10329.0	8917.1	7247.5	5588.6	4788.7
15°	8208.4	8197.7	8825.8	9480.8	10361.2	10516.9	9851.2	8600.3	7140.1	5492.0	4692.1
16°	7263.6	7328.0	7811.2	8589.6	9486.1	9931.7	9453.9	8272.9	6979.0	5379.2	4525.6
17°	6479.8	6587.1	7048.8	7752.1	8605.7	9078.1	8632.5	7929.3	6758.9	5271.9	4445.1
18°	5749.7	5814.1	6243.6	6850.2	7714.5	8219.2	8144.0	7505.2	6597.9	5169.9	4332.4
19°	5132.3	5169.9	5465.1	6163.0	7022.0	7521.3	7478.3	7070.3	6458.3	5035.7	4155.2
20°	4600.8	4665.2	4912.2	5470.5	6232.8	6941.5	6882.4	6667.7	6238.2	4939.0	4064.0
21°	4128.4	4139.1	4429.0	5014.2	5685.2	6206.0	6350.9	6275.8	5937.6	4804.8	3945.8
22.5°	3564.7	3629.1	3795.5	4251.9	4955.1	5459.8	5690.6	5669.1	5529.6	4504.2	3666.7
23°	3398.3	3446.6	3645.2	4123.0	4686.7	5228.9	5427.6	5427.6	5379.2	4359.2	3532.5
24°	3124.5	3119.1	3280.2	3720.4	4364.6	4767.2	5110.8	5121.5	5046.4	4155.2	3349.9
25°	2920.5	2877.5	2995.6	3387.5	3978.1	4412.9	4627.6	4745.8	4681.3	3854.6	3140.6
26°	2689.6	2705.7	2780.9	3129.8	3682.8	4117.6	4273.3	4434.4	4343.1	3575.4	2877.5
27°	2458.8	2474.9	2544.7	2909.7	3478.8	3892.2	4037.1	4096.2	4037.1	3231.8	2646.7
28°	2313.8	2324.6	2378.2	2673.5	3269.4	3586.2	3763.3	3827.7	3650.6	2984.9	2389.0
29°	2185.0	2217.2	2249.4	2485.6	3043.9	3398.3	3516.4	3548.6	3366.0	2678.9	2142.0
30°	2077.6	2061.5	2131.3	2340.7	2818.5	3247.9	3317.7	3290.9	3124.5	2415.8	1954.1
32.5°	1857.5	1857.5	1900.4	2056.1	2523.2	2856.0	2920.5	2802.4	2469.5	1911.2	1535.4
35°	1707.2	1707.2	1744.8	1841.4	2174.2	2550.0	2582.2	2372.9	2018.6	1535.4	1213.3
37.5°	1578.3	1594.4	1621.3	1685.7	1943.4	2260.1	2238.7	2013.2	1696.4	1229.4	966.3
40°	1497.8	1497.8	1503.2	1556.9	1734.0	2018.6	1938.0	1691.1	1428.0	987.8	757.0
42.5°	1406.5	1411.9	1422.7	1444.1	1573.0	1744.8	1680.3	1503.2	1229.4	794.5	574.4
45°	1315.3	1309.9	1320.7	1336.8	1422.7	1519.3	1487.1	1331.4	1057.6	617.4	429.5
47.5°	1218.6	1224.0	1213.3	1234.8	1299.2	1358.2	1326.0	1191.8	880.4	472.4	316.7
50°	1116.6	1122.0	1105.9	1132.8	1191.8	1213.3	1191.8	1057.6	740.9	349.0	236.2
52.5°	1009.3	1003.9	993.2	1030.8	1068.3	1089.8	1073.7	923.4	585.2	263.1	171.8
55°	907.3	896.5	891.2	912.6	955.6	987.8	961.0	794.5	451.0	187.9	128.8
57.5°	794.5	789.2	783.8	799.9	848.2	880.4	837.5	655.0	343.6	139.6	96.6
60°	687.2	697.9	676.4	687.2	746.2	778.4	730.1	536.8	252.3	102.0	69.8
62.5°	595.9	590.5	569.1	585.2	638.9	671.1	612.0	413.4	187.9	75.2	53.7
65°	510.0	504.6	477.8	488.5	531.5	569.1	504.6	327.5	139.6	59.1	42.9



TEST NUMBER: P592111

CATALOG NUMBER: GRZ-15L-935-ASYMx40-X-UNV-STD-4F

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	472.4	467.1	397.3	391.9	445.6	461.7	402.6	241.6	102.0	42.9	32.2
70°	413.4	408.0	349.0	311.4	349.0	365.1	311.4	177.2	69.8	32.2	26.8
72.5°	316.7	322.1	295.3	241.6	268.4	284.5	230.8	123.5	48.3	26.8	21.5
75°	241.6	236.2	225.5	187.9	204.0	209.4	166.4	85.9	37.6	16.1	16.1
77.5°	161.1	155.7	161.1	139.6	139.6	144.9	112.7	59.1	26.8	10.7	10.7
80°	96.6	102.0	107.4	102.0	91.3	91.3	69.8	37.6	16.1	10.7	5.4
82.5°	48.3	53.7	59.1	59.1	53.7	53.7	42.9	21.5	10.7	5.4	5.4
85°	21.5	21.5	26.8	26.8	21.5	26.8	16.1	10.7	5.4	5.4	5.4
87.5°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	6259.7	6259.7	6259.7	6259.7	6259.7	6259.7	6259.7	6259.7	6259.7	6259.7
1°	6114.7	5975.1	5975.1	5776.5	5626.2	5534.9	5373.9	5379.2	5298.7	5250.4
2°	6061.0	5760.4	5502.7	5250.4	5014.2	4896.1	4767.2	4638.4	4541.7	4514.9
3°	5985.9	5583.2	5169.9	4831.6	4536.4	4348.5	4160.6	4042.5	3999.5	3908.3
4°	5889.2	5341.7	4815.5	4445.1	4085.4	3827.7	3715.0	3548.6	3500.3	3559.3
5°	5771.1	5110.8	4547.1	4101.5	3747.2	3435.8	3274.8	3188.9	3060.0	3065.4
6°	5636.9	4820.9	4208.9	3709.6	3349.9	3119.1	2952.7	2834.6	2743.3	2791.6
7°	5465.1	4563.2	3913.6	3419.7	3076.1	2829.2	2695.0	2528.6	2426.6	2426.6
8°	5320.2	4343.1	3639.8	3162.0	2818.5	2550.0	2367.5	2254.8	2179.6	2163.5
9°	5084.0	4096.2	3419.7	2941.9	2593.0	2313.8	2109.8	2002.4	1938.0	1927.3
10°	4944.4	3876.1	3242.6	2705.7	2346.0	2109.8	1911.2	1798.4	1734.0	1734.0
11°	4718.9	3655.9	2979.5	2512.5	2152.8	1879.0	1717.9	1626.7	1551.5	1535.4
12°	4509.5	3473.4	2807.7	2356.8	1975.6	1701.8	1551.5	1454.9	1401.2	1401.2
13°	4310.9	3317.7	2657.4	2168.9	1777.0	1567.6	1401.2	1293.8	1240.1	1234.8
14°	4149.8	3103.0	2469.5	2002.4	1626.7	1406.5	1240.1	1165.0	1111.3	1105.9
15°	4010.3	2958.0	2356.8	1819.9	1471.0	1245.5	1100.5	1036.1	982.4	977.1
16°	3870.7	2813.1	2201.1	1675.0	1336.8	1138.1	987.8	896.5	864.3	864.3
17°	3757.9	2727.2	2056.1	1556.9	1197.2	1003.9	864.3	778.4	757.0	724.7
18°	3613.0	2555.4	1927.3	1417.3	1100.5	885.8	751.6	681.8	638.9	622.7
19°	3473.4	2405.1	1803.8	1272.3	977.1	773.1	660.3	579.8	542.2	542.2
20°	3312.4	2313.8	1669.6	1165.0	859.0	692.5	558.3	499.3	477.8	477.8
21°	3145.9	2158.1	1519.3	1036.1	762.3	590.5	499.3	434.8	408.0	397.3
22.5°	2909.7	1916.6	1342.1	885.8	617.4	483.2	402.6	354.3	338.2	332.8
23°	2791.6	1830.7	1245.5	837.5	579.8	445.6	375.8	327.5	311.4	306.0
24°	2609.1	1696.4	1127.4	730.1	499.3	391.9	322.1	289.9	279.2	273.8
25°	2415.8	1556.9	1009.3	649.6	451.0	343.6	289.9	257.7	247.0	241.6
26°	2217.2	1401.2	885.8	563.7	397.3	300.6	257.7	230.8	225.5	220.1
27°	2013.2	1267.0	783.8	499.3	349.0	273.8	230.8	209.4	198.6	204.0
28°	1819.9	1138.1	681.8	440.2	300.6	241.6	209.4	187.9	182.5	177.2
29°	1685.7	1014.6	612.0	381.2	268.4	214.7	187.9	171.8	166.4	166.4
30°	1535.4	912.6	542.2	343.6	241.6	193.3	171.8	155.7	155.7	150.3
32.5°	1213.3	692.5	397.3	257.7	187.9	150.3	134.2	128.8	123.5	123.5
35°	944.9	515.4	295.3	193.3	144.9	123.5	107.4	107.4	107.4	102.0
37.5°	724.7	381.2	225.5	150.3	118.1	102.0	91.3	91.3	85.9	85.9
40°	553.0	284.5	166.4	118.1	96.6	85.9	75.2	75.2	75.2	75.2
42.5°	413.4	214.7	134.2	96.6	80.5	69.8	64.4	64.4	64.4	64.4
45°	306.0	161.1	102.0	80.5	69.8	64.4	59.1	53.7	59.1	59.1
47.5°	225.5	123.5	80.5	64.4	59.1	53.7	53.7	48.3	48.3	48.3
50°	166.4	96.6	69.8	59.1	53.7	48.3	42.9	42.9	42.9	42.9
52.5°	123.5	75.2	59.1	48.3	42.9	42.9	37.6	37.6	37.6	37.6
55°	91.3	59.1	48.3	42.9	37.6	37.6	32.2	32.2	32.2	32.2
57.5°	69.8	48.3	42.9	37.6	37.6	32.2	32.2	26.8	26.8	26.8
60°	53.7	42.9	32.2	32.2	32.2	32.2	26.8	26.8	26.8	26.8
62.5°	42.9	32.2	26.8	26.8	26.8	26.8	21.5	21.5	21.5	21.5
65°	32.2	26.8	26.8	26.8	26.8	21.5	21.5	16.1	16.1	16.1



TEST NUMBER: P592111

CATALOG NUMBER: GRZ-15L-935-ASYMx40-X-UNV-STD-4F

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	26.8	21.5	21.5	21.5	21.5	21.5	16.1	16.1	16.1	16.1
70°	21.5	16.1	16.1	16.1	16.1	16.1	16.1	10.7	10.7	10.7
72.5°	16.1	16.1	16.1	16.1	16.1	10.7	10.7	10.7	10.7	10.7
75°	10.7	10.7	10.7	10.7	10.7	10.7	10.7	5.4	5.4	5.4
77.5°	10.7	5.4	5.4	5.4	10.7	5.4	5.4	5.4	5.4	5.4
80°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
82.5°	5.4	5.4	5.4	5.4	5.4	5.4	0.0	0.0	0.0	0.0
85°	5.4	5.4	5.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)