

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: P592127

Luminaire Tested: **GRZ-15L-940-ASYMx40-X-UNV-STD-4F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592127
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-940-ASYMx40-X-UNV-STD-4F
Description: iO LED GRAZER WITH ASYMx40 OPTIC
1500 LUMENS PER FOOT, 4 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

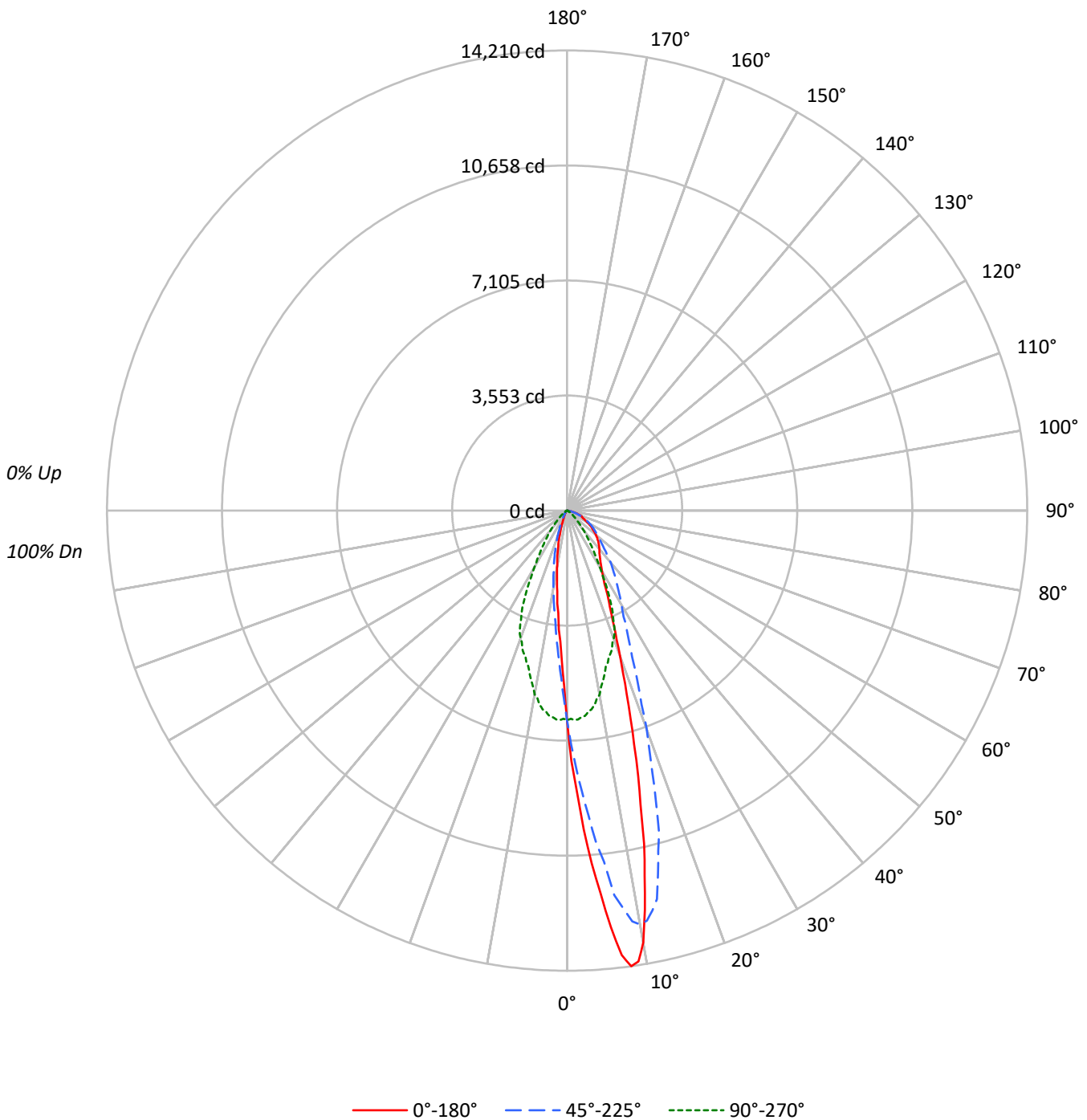
Lumens per Lamp: N/A
Luminaire Lumens: 5364.0 lumens
Efficiency: N/A
Efficacy: 95.8 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 56
Input Voltage (V): 120
Input Current (Ain): 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



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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°	104536	104536	104536
5°	192503	103137	51388
10°	221948	94587	29404
15°	141917	81122	16893
20°	81764	72223	8491
25°	53814	57870	4452
30°	40063	37682	2899
35°	34805	24735	2079
40°	32652	16501	1638
45°	31063	10143	1395
50°	29012	6136	1115
55°	26415	3752	937
60°	22953	2331	898
65°	20153	1696	638
70°	20186	1312	524
75°	15589	1042	349
80°	9289	521	521
85°	4113	1037	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	683.5	12.7
10°-20°	1500.0	28.0
20°-30°	1145.9	21.4
30°-40°	769.7	14.3
40°-50°	553.3	10.3
50°-60°	384.8	7.2
60°-70°	220.7	4.1
70°-80°	91.2	1.7
80°-90°	14.9	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°	3329.5	62.1
0°-40°	4099.2	76.4
0°-60°	5037.3	93.9
0°-90°	5364.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5364.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	6474	6474	6474	6474	6474	
5°	11877	10312	6364	3876	3171	1219
15°	8490	10878	4853	1522	1011	2331
25°	3021	4564	3248	466	250	1415
35°	1766	2638	1255	150	106	1119
45°	1360	1571	444	72	61	1047
55°	938	1022	133	39	33	834
65°	528	589	44	28	17	545
75°	250	217	17	11	6	265
85°	22	28	6	0	0	35
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	6474.5	6474.5	6474.5	6474.5	6474.5	6474.5	6474.5	6474.5	6474.5	6474.5	6474.5
1°	7740.6	7457.4	7546.2	7457.4	7324.1	7229.7	7074.2	6918.7	6702.2	6485.6	6430.1
2°	8712.3	8590.1	8390.2	8268.1	8029.3	7968.2	7651.7	7351.9	7040.9	6563.4	6469.0
3°	9856.2	9567.4	9473.0	9217.6	8939.9	8684.5	8240.3	7779.4	7185.3	6641.1	6457.9
4°	10922.3	10700.2	10666.9	10333.7	9833.9	9445.2	8912.2	8173.7	7451.8	6707.7	6391.2
5°	11877.4	11866.3	11555.3	11427.6	10839.0	10311.5	9550.8	8640.1	7673.9	6802.1	6363.5
6°	12943.5	12860.2	12804.7	12449.3	11755.2	10905.6	10217.1	9051.0	8034.8	6835.5	6241.3
7°	13826.4	13787.5	13682.0	13343.3	12688.1	11966.2	10811.2	9300.9	8040.4	6718.8	6185.8
8°	14209.5	14104.0	14226.2	13915.2	13426.6	12393.8	11161.1	9734.0	8190.3	6735.5	6063.6
9°	14098.5	13970.8	14298.4	14154.0	13759.7	12843.5	11455.3	9806.2	8207.0	6613.3	5874.8
10°	13537.6	13670.9	13920.8	14137.3	13826.4	12982.4	11555.3	9911.7	8107.0	6491.2	5769.3
11°	12565.9	12660.3	13132.3	13687.6	13559.8	12899.1	11721.9	9861.7	7968.2	6319.0	5530.6
12°	11522.0	11871.8	12149.4	12843.5	13121.2	12632.5	11427.6	9628.5	7840.5	6113.6	5347.3
13°	10561.4	10661.3	11111.1	11882.9	12432.6	12310.5	11161.1	9467.5	7662.8	5958.1	5158.5
14°	9350.9	9461.9	10156.0	10916.7	11466.5	11588.6	10683.5	9223.1	7496.2	5780.4	4953.1
15°	8490.2	8479.1	9128.7	9806.2	10716.8	10877.9	10189.3	8895.5	7385.2	5680.5	4853.1
16°	7512.9	7579.5	8079.3	8884.4	9811.7	10272.6	9778.4	8556.8	7218.6	5563.9	4681.0
17°	6702.2	6813.2	7290.8	8018.2	8901.1	9389.7	8928.8	8201.4	6990.9	5452.8	4597.7
18°	5947.0	6013.6	6457.9	7085.3	7979.3	8501.3	8423.5	7762.8	6824.3	5347.3	4481.1
19°	5308.4	5347.3	5652.7	6374.6	7263.0	7779.4	7735.0	7313.0	6680.0	5208.5	4297.8
20°	4758.7	4825.4	5080.8	5658.3	6446.8	7179.7	7118.6	6896.5	6452.3	5108.5	4203.4
21°	4270.1	4281.2	4581.0	5186.3	5880.4	6419.0	6568.9	6491.2	6141.4	4969.7	4081.3
22.5°	3687.0	3753.7	3925.8	4397.8	5125.2	5647.2	5885.9	5863.7	5719.3	4658.8	3792.5
23°	3514.9	3564.9	3770.3	4264.5	4847.6	5408.4	5613.8	5613.8	5563.9	4508.8	3653.7
24°	3231.7	3226.2	3392.7	3848.1	4514.4	4930.9	5286.2	5297.3	5219.6	4297.8	3464.9
25°	3020.7	2976.3	3098.4	3503.8	4114.6	4564.4	4786.5	4908.6	4842.0	3986.9	3248.4
26°	2781.9	2798.6	2876.3	3237.3	3809.2	4259.0	4420.0	4586.6	4492.2	3698.1	2976.3
27°	2543.2	2559.8	2632.0	3009.6	3598.2	4025.8	4175.7	4236.8	4175.7	3342.8	2737.5
28°	2393.2	2404.3	2459.9	2765.3	3381.6	3709.2	3892.5	3959.1	3775.9	3087.3	2471.0
29°	2260.0	2293.3	2326.6	2570.9	3148.4	3514.9	3637.1	3670.4	3481.6	2770.8	2215.6
30°	2148.9	2132.3	2204.4	2421.0	2915.2	3359.4	3431.6	3403.8	3231.7	2498.7	2021.2
32.5°	1921.3	1921.3	1965.7	2126.7	2609.8	2954.1	3020.7	2898.5	2554.3	1976.8	1588.1
35°	1765.8	1765.8	1804.6	1904.6	2248.9	2637.6	2670.9	2454.3	2087.8	1588.1	1254.9
37.5°	1632.5	1649.2	1676.9	1743.6	2010.1	2337.7	2315.5	2082.3	1754.7	1271.6	999.5
40°	1549.2	1549.2	1554.8	1610.3	1793.5	2087.8	2004.5	1749.1	1477.0	1021.7	782.9
42.5°	1454.8	1460.4	1471.5	1493.7	1627.0	1804.6	1738.0	1554.8	1271.6	821.8	594.1
45°	1360.4	1354.9	1366.0	1382.6	1471.5	1571.4	1538.1	1377.1	1093.9	638.6	444.2
47.5°	1260.5	1266.0	1254.9	1277.1	1343.8	1404.8	1371.5	1232.7	910.7	488.6	327.6
50°	1155.0	1160.5	1143.9	1171.6	1232.7	1254.9	1232.7	1093.9	766.3	360.9	244.3
52.5°	1043.9	1038.4	1027.3	1066.1	1105.0	1127.2	1110.6	955.1	605.3	272.1	177.7
55°	938.4	927.3	921.8	944.0	988.4	1021.7	993.9	821.8	466.4	194.3	133.3
57.5°	821.8	816.3	810.7	827.4	877.3	910.7	866.2	677.4	355.4	144.4	99.9
60°	710.8	721.9	699.6	710.8	771.8	805.2	755.2	555.3	261.0	105.5	72.2
62.5°	616.4	610.8	588.6	605.3	660.8	694.1	633.0	427.6	194.3	77.7	55.5
65°	527.5	522.0	494.2	505.3	549.7	588.6	522.0	338.7	144.4	61.1	44.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	488.6	483.1	410.9	405.4	460.9	477.5	416.5	249.9	105.5	44.4	33.3
70°	427.6	422.0	360.9	322.1	360.9	377.6	322.1	183.2	72.2	33.3	27.8
72.5°	327.6	333.2	305.4	249.9	277.6	294.3	238.8	127.7	50.0	27.8	22.2
75°	249.9	244.3	233.2	194.3	211.0	216.6	172.1	88.8	38.9	16.7	16.7
77.5°	166.6	161.0	166.6	144.4	144.4	149.9	116.6	61.1	27.8	11.1	11.1
80°	99.9	105.5	111.1	105.5	94.4	94.4	72.2	38.9	16.7	11.1	5.6
82.5°	50.0	55.5	61.1	61.1	55.5	55.5	44.4	22.2	11.1	5.6	5.6
85°	22.2	22.2	27.8	27.8	22.2	27.8	16.7	11.1	5.6	5.6	5.6
87.5°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
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°	6474.5	6474.5	6474.5	6474.5	6474.5	6474.5	6474.5	6474.5	6474.5	6474.5
1°	6324.6	6180.2	6180.2	5974.8	5819.3	5724.9	5558.3	5563.9	5480.6	5430.6
2°	6269.1	5958.1	5691.6	5430.6	5186.3	5064.1	4930.9	4797.6	4697.6	4669.9
3°	6191.3	5774.9	5347.3	4997.5	4692.1	4497.7	4303.4	4181.2	4136.8	4042.4
4°	6091.4	5525.0	4980.8	4597.7	4225.7	3959.1	3842.5	3670.4	3620.4	3681.5
5°	5969.2	5286.2	4703.2	4242.3	3875.8	3553.8	3387.2	3298.3	3165.1	3170.6
6°	5830.4	4986.4	4353.4	3837.0	3464.9	3226.2	3054.0	2931.9	2837.5	2887.4
7°	5652.7	4719.8	4048.0	3537.1	3181.7	2926.3	2787.5	2615.4	2509.8	2509.8
8°	5502.8	4492.2	3764.8	3270.6	2915.2	2637.6	2448.8	2332.2	2254.4	2237.8
9°	5258.5	4236.8	3537.1	3042.9	2682.0	2393.2	2182.2	2071.2	2004.5	1993.4
10°	5114.1	4009.1	3353.9	2798.6	2426.6	2182.2	1976.8	1860.2	1793.5	1793.5
11°	4880.9	3781.4	3081.8	2598.7	2226.7	1943.5	1776.9	1682.5	1604.7	1588.1
12°	4664.3	3592.6	2904.1	2437.7	2043.4	1760.2	1604.7	1504.8	1449.3	1449.3
13°	4458.9	3431.6	2748.6	2243.3	1838.0	1621.4	1449.3	1338.2	1282.7	1277.1
14°	4292.3	3209.5	2554.3	2071.2	1682.5	1454.8	1282.7	1204.9	1149.4	1143.9
15°	4147.9	3059.6	2437.7	1882.4	1521.5	1288.2	1138.3	1071.7	1016.2	1010.6
16°	4003.5	2909.6	2276.6	1732.5	1382.6	1177.2	1021.7	927.3	894.0	894.0
17°	3886.9	2820.8	2126.7	1610.3	1238.3	1038.4	894.0	805.2	782.9	749.6
18°	3737.0	2643.1	1993.4	1465.9	1138.3	916.2	777.4	705.2	660.8	644.1
19°	3592.6	2487.6	1865.7	1316.0	1010.6	799.6	683.0	599.7	560.8	560.8
20°	3426.1	2393.2	1726.9	1204.9	888.4	716.3	577.5	516.4	494.2	494.2
21°	3253.9	2232.2	1571.4	1071.7	788.5	610.8	516.4	449.8	422.0	410.9
22.5°	3009.6	1982.3	1388.2	916.2	638.6	499.7	416.5	366.5	349.8	344.3
23°	2887.4	1893.5	1288.2	866.2	599.7	460.9	388.7	338.7	322.1	316.5
24°	2698.6	1754.7	1166.1	755.2	516.4	405.4	333.2	299.8	288.7	283.2
25°	2498.7	1610.3	1043.9	671.9	466.4	355.4	299.8	266.5	255.4	249.9
26°	2293.3	1449.3	916.2	583.0	410.9	311.0	266.5	238.8	233.2	227.7
27°	2082.3	1310.5	810.7	516.4	360.9	283.2	238.8	216.6	205.5	211.0
28°	1882.4	1177.2	705.2	455.3	311.0	249.9	216.6	194.3	188.8	183.2
29°	1743.6	1049.5	633.0	394.2	277.6	222.1	194.3	177.7	172.1	172.1
30°	1588.1	944.0	560.8	355.4	249.9	199.9	177.7	161.0	161.0	155.5
32.5°	1254.9	716.3	410.9	266.5	194.3	155.5	138.8	133.3	127.7	127.7
35°	977.3	533.1	305.4	199.9	149.9	127.7	111.1	111.1	111.1	105.5
37.5°	749.6	394.2	233.2	155.5	122.2	105.5	94.4	94.4	88.8	88.8
40°	571.9	294.3	172.1	122.2	99.9	88.8	77.7	77.7	77.7	77.7
42.5°	427.6	222.1	138.8	99.9	83.3	72.2	66.6	66.6	66.6	66.6
45°	316.5	166.6	105.5	83.3	72.2	66.6	61.1	55.5	61.1	61.1
47.5°	233.2	127.7	83.3	66.6	61.1	55.5	55.5	50.0	50.0	50.0
50°	172.1	99.9	72.2	61.1	55.5	50.0	44.4	44.4	44.4	44.4
52.5°	127.7	77.7	61.1	50.0	44.4	44.4	38.9	38.9	38.9	38.9
55°	94.4	61.1	50.0	44.4	38.9	38.9	33.3	33.3	33.3	33.3
57.5°	72.2	50.0	44.4	38.9	38.9	33.3	33.3	27.8	27.8	27.8
60°	55.5	44.4	33.3	33.3	33.3	33.3	27.8	27.8	27.8	27.8
62.5°	44.4	33.3	27.8	27.8	27.8	27.8	22.2	22.2	22.2	22.2
65°	33.3	27.8	27.8	27.8	27.8	22.2	22.2	16.7	16.7	16.7



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	27.8	22.2	22.2	22.2	22.2	22.2	16.7	16.7	16.7	16.7
70°	22.2	16.7	16.7	16.7	16.7	16.7	16.7	11.1	11.1	11.1
72.5°	16.7	16.7	16.7	16.7	16.7	11.1	11.1	11.1	11.1	11.1
75°	11.1	11.1	11.1	11.1	11.1	11.1	11.1	5.6	5.6	5.6
77.5°	11.1	5.6	5.6	5.6	11.1	5.6	5.6	5.6	5.6	5.6
80°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
82.5°	5.6	5.6	5.6	5.6	5.6	5.6	0.0	0.0	0.0	0.0
85°	5.6	5.6	5.6	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)