

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: P591951

Luminaire Tested: **GRZ-05L-927-ASYMx40-X-UNV-STD-4F**

Issue Date: 2/2/2022

**Test Information**

Test Method: LM-79-2019  
Report Number: P591951  
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-05L-927-ASYMx40-X-UNV-STD-4F  
Description: iO LED GRAZER WITH ASYMx40 OPTIC  
500 LUMENS PER FOOT, 4 FOOT FIXTURE  
SUMULATED RESULTS  
Light Source: 2700K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

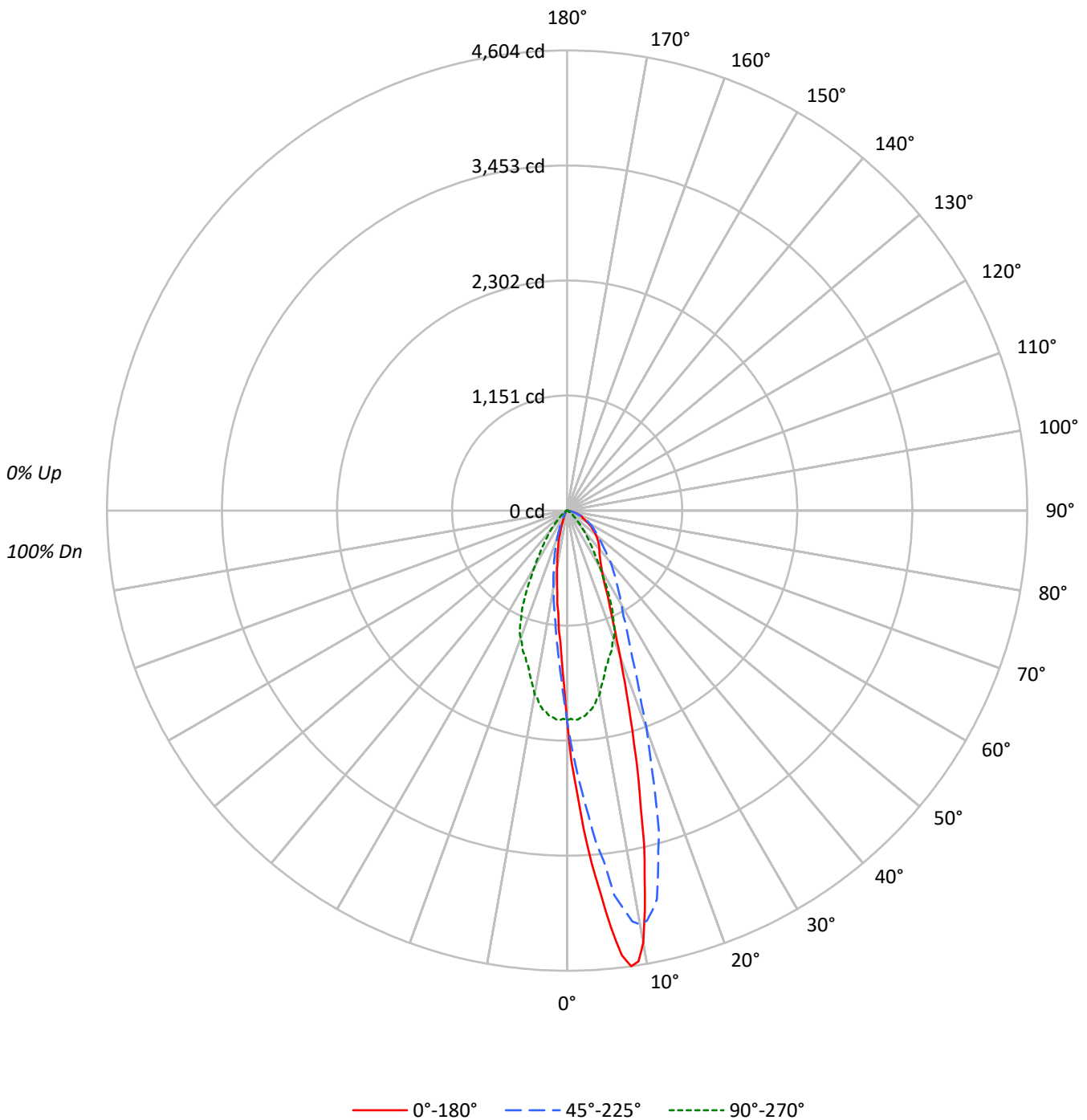
Lumens per Lamp: N/A  
Luminaire Lumens: 1738.0 lumens  
Efficiency: N/A  
Efficacy: 90.1 lumens/watt  
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71  
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')  
CIE Type: Direct

Input Watts (W): 19.3  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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°	33871	33871	33871
5°	62373	33417	16650
10°	71915	30647	9527
15°	45982	26285	5473
20°	26493	23402	2751
25°	17436	18750	1443
30°	12982	12210	940
35°	11276	8014	674
40°	10581	5347	531
45°	10065	3286	452
50°	9399	1989	362
55°	8560	1216	304
60°	7437	756	291
65°	6529	550	206
70°	6538	425	170
75°	5053	337	112
80°	3013	167	167
85°	1334	333	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	221.5	12.7
10°-20°	486.0	28.0
20°-30°	371.3	21.4
30°-40°	249.4	14.3
40°-50°	179.3	10.3
50°-60°	124.7	7.2
60°-70°	71.5	4.1
70°-80°	29.5	1.7
80°-90°	4.8	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°	1078.8	62.1
0°-40°	1328.2	76.4
0°-60°	1632.2	93.9
0°-90°	1738.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1738.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2098	2098	2098	2098	2098	
5°	3848	3341	2062	1256	1027	395
15°	2751	3525	1572	493	327	755
25°	979	1479	1052	151	81	458
35°	572	855	407	49	34	362
45°	441	509	144	23	20	339
55°	304	331	43	13	11	270
65°	171	191	14	9	5	176
75°	81	70	5	4	2	86
85°	7	9	2	0	0	11
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°	2097.8	2097.8	2097.8	2097.8	2097.8	2097.8	2097.8	2097.8	2097.8	2097.8	2097.8
1°	2508.0	2416.3	2445.1	2416.3	2373.1	2342.5	2292.1	2241.8	2171.6	2101.4	2083.4
2°	2822.9	2783.3	2718.5	2679.0	2601.6	2581.8	2479.2	2382.1	2281.3	2126.6	2096.0
3°	3193.5	3100.0	3069.4	2986.6	2896.6	2813.9	2670.0	2520.6	2328.1	2151.8	2092.4
4°	3539.0	3467.0	3456.2	3348.2	3186.3	3060.4	2887.7	2648.4	2414.5	2173.4	2070.8
5°	3848.4	3844.8	3744.1	3702.7	3512.0	3341.0	3094.6	2799.5	2486.4	2204.0	2061.8
6°	4193.8	4166.9	4148.9	4033.7	3808.8	3533.6	3310.5	2932.6	2603.4	2214.8	2022.3
7°	4479.9	4467.3	4433.1	4323.4	4111.1	3877.2	3503.0	3013.6	2605.2	2177.0	2004.3
8°	4604.1	4569.9	4609.5	4508.7	4350.4	4015.7	3616.3	3153.9	2653.8	2182.4	1964.7
9°	4568.1	4526.7	4632.8	4586.1	4458.3	4161.5	3711.7	3177.3	2659.2	2142.8	1903.5
10°	4386.4	4429.5	4510.5	4580.7	4479.9	4206.4	3744.1	3211.5	2626.8	2103.2	1869.3
11°	4071.5	4102.1	4255.0	4434.9	4393.6	4179.5	3798.0	3195.3	2581.8	2047.4	1792.0
12°	3733.3	3846.6	3936.6	4161.5	4251.4	4093.1	3702.7	3119.7	2540.4	1980.9	1732.6
13°	3422.0	3454.4	3600.1	3850.2	4028.3	3988.7	3616.3	3067.6	2482.8	1930.5	1671.4
14°	3029.8	3065.8	3290.7	3537.2	3715.3	3754.8	3461.6	2988.4	2428.9	1872.9	1604.9
15°	2750.9	2747.3	2957.8	3177.3	3472.4	3524.6	3301.5	2882.3	2392.9	1840.5	1572.5
16°	2434.3	2455.9	2617.8	2878.7	3179.1	3328.4	3168.3	2772.5	2338.9	1802.8	1516.7
17°	2171.6	2207.6	2362.3	2598.0	2884.1	3042.4	2893.1	2657.4	2265.1	1766.8	1489.7
18°	1926.9	1948.5	2092.4	2295.7	2585.4	2754.5	2729.3	2515.2	2211.2	1732.6	1451.9
19°	1720.0	1732.6	1831.5	2065.4	2353.3	2520.6	2506.2	2369.5	2164.4	1687.6	1392.6
20°	1541.9	1563.5	1646.2	1833.3	2088.8	2326.3	2306.5	2234.6	2090.6	1655.2	1362.0
21°	1383.6	1387.2	1484.3	1680.4	1905.3	2079.8	2128.4	2103.2	1989.9	1610.2	1322.4
22.5°	1194.6	1216.2	1272.0	1424.9	1660.6	1829.7	1907.1	1899.9	1853.1	1509.5	1228.8
23°	1138.9	1155.1	1221.6	1381.8	1570.7	1752.4	1819.0	1819.0	1802.8	1460.9	1183.8
24°	1047.1	1045.3	1099.3	1246.8	1462.7	1597.7	1712.8	1716.4	1691.2	1392.6	1122.7
25°	978.7	964.4	1003.9	1135.3	1333.2	1478.9	1550.9	1590.5	1568.9	1291.8	1052.5
26°	901.4	906.8	932.0	1048.9	1234.2	1380.0	1432.1	1486.1	1455.5	1198.2	964.4
27°	824.0	829.4	852.8	975.1	1165.9	1304.4	1353.0	1372.8	1353.0	1083.1	887.0
28°	775.4	779.0	797.0	896.0	1095.7	1201.8	1261.2	1282.8	1223.4	1000.3	800.6
29°	732.3	743.1	753.8	833.0	1020.1	1138.9	1178.5	1189.2	1128.1	897.8	717.9
30°	696.3	690.9	714.3	784.4	944.6	1088.5	1111.9	1102.9	1047.1	809.6	654.9
32.5°	622.5	622.5	636.9	689.1	845.6	957.2	978.7	939.2	827.6	640.5	514.6
35°	572.1	572.1	584.7	617.1	728.7	854.6	865.4	795.2	676.5	514.6	406.6
37.5°	529.0	534.4	543.3	564.9	651.3	757.4	750.3	674.7	568.5	412.0	323.8
40°	502.0	502.0	503.8	521.8	581.1	676.5	649.5	566.7	478.6	331.0	253.7
42.5°	471.4	473.2	476.8	484.0	527.2	584.7	563.1	503.8	412.0	266.3	192.5
45°	440.8	439.0	442.6	448.0	476.8	509.2	498.4	446.2	354.4	206.9	143.9
47.5°	408.4	410.2	406.6	413.8	435.4	455.2	444.4	399.4	295.1	158.3	106.2
50°	374.2	376.0	370.6	379.6	399.4	406.6	399.4	354.4	248.3	116.9	79.2
52.5°	338.2	336.4	332.8	345.4	358.0	365.2	359.8	309.5	196.1	88.2	57.6
55°	304.1	300.5	298.7	305.9	320.3	331.0	322.0	266.3	151.1	63.0	43.2
57.5°	266.3	264.5	262.7	268.1	284.3	295.1	280.7	219.5	115.1	46.8	32.4
60°	230.3	233.9	226.7	230.3	250.1	260.9	244.7	179.9	84.6	34.2	23.4
62.5°	199.7	197.9	190.7	196.1	214.1	224.9	205.1	138.5	63.0	25.2	18.0
65°	170.9	169.1	160.1	163.7	178.1	190.7	169.1	109.7	46.8	19.8	14.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	158.3	156.5	133.1	131.3	149.3	154.7	134.9	81.0	34.2	14.4	10.8
70°	138.5	136.7	116.9	104.4	116.9	122.3	104.4	59.4	23.4	10.8	9.0
72.5°	106.2	107.9	99.0	81.0	90.0	95.4	77.4	41.4	16.2	9.0	7.2
75°	81.0	79.2	75.6	63.0	68.4	70.2	55.8	28.8	12.6	5.4	5.4
77.5°	54.0	52.2	54.0	46.8	46.8	48.6	37.8	19.8	9.0	3.6	3.6
80°	32.4	34.2	36.0	34.2	30.6	30.6	23.4	12.6	5.4	3.6	1.8
82.5°	16.2	18.0	19.8	19.8	18.0	18.0	14.4	7.2	3.6	1.8	1.8
85°	7.2	7.2	9.0	9.0	7.2	9.0	5.4	3.6	1.8	1.8	1.8
87.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
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°	2097.8	2097.8	2097.8	2097.8	2097.8	2097.8	2097.8	2097.8	2097.8	2097.8
1°	2049.2	2002.5	2002.5	1935.9	1885.5	1854.9	1801.0	1802.8	1775.8	1759.6
2°	2031.3	1930.5	1844.1	1759.6	1680.4	1640.8	1597.7	1554.5	1522.1	1513.1
3°	2006.1	1871.1	1732.6	1619.2	1520.3	1457.3	1394.3	1354.8	1340.4	1309.8
4°	1973.7	1790.2	1613.8	1489.7	1369.2	1282.8	1245.0	1189.2	1173.1	1192.8
5°	1934.1	1712.8	1523.9	1374.6	1255.8	1151.5	1097.5	1068.7	1025.5	1027.3
6°	1889.1	1615.6	1410.5	1243.2	1122.7	1045.3	989.5	950.0	919.4	935.6
7°	1831.5	1529.3	1311.6	1146.1	1030.9	948.2	903.2	847.4	813.2	813.2
8°	1783.0	1455.5	1219.8	1059.7	944.6	854.6	793.4	755.6	730.5	725.1
9°	1703.8	1372.8	1146.1	985.9	869.0	775.4	707.1	671.1	649.5	645.9
10°	1657.0	1299.0	1086.7	906.8	786.2	707.1	640.5	602.7	581.1	581.1
11°	1581.5	1225.2	998.5	842.0	721.5	629.7	575.7	545.1	520.0	514.6
12°	1511.3	1164.1	941.0	789.8	662.1	570.3	520.0	487.6	469.6	469.6
13°	1444.7	1111.9	890.6	726.9	595.5	525.4	469.6	433.6	415.6	413.8
14°	1390.8	1039.9	827.6	671.1	545.1	471.4	415.6	390.4	372.4	370.6
15°	1344.0	991.3	789.8	609.9	493.0	417.4	368.8	347.2	329.2	327.4
16°	1297.2	942.8	737.7	561.3	448.0	381.4	331.0	300.5	289.7	289.7
17°	1259.4	914.0	689.1	521.8	401.2	336.4	289.7	260.9	253.7	242.9
18°	1210.8	856.4	645.9	475.0	368.8	296.9	251.9	228.5	214.1	208.7
19°	1164.1	806.0	604.5	426.4	327.4	259.1	221.3	194.3	181.7	181.7
20°	1110.1	775.4	559.5	390.4	287.9	232.1	187.1	167.3	160.1	160.1
21°	1054.3	723.3	509.2	347.2	255.5	197.9	167.3	145.7	136.7	133.1
22.5°	975.1	642.3	449.8	296.9	206.9	161.9	134.9	118.7	113.3	111.5
23°	935.6	613.5	417.4	280.7	194.3	149.3	125.9	109.7	104.4	102.6
24°	874.4	568.5	377.8	244.7	167.3	131.3	107.9	97.2	93.6	91.8
25°	809.6	521.8	338.2	217.7	151.1	115.1	97.2	86.4	82.8	81.0
26°	743.1	469.6	296.9	188.9	133.1	100.8	86.4	77.4	75.6	73.8
27°	674.7	424.6	262.7	167.3	116.9	91.8	77.4	70.2	66.6	68.4
28°	609.9	381.4	228.5	147.5	100.8	81.0	70.2	63.0	61.2	59.4
29°	564.9	340.0	205.1	127.7	90.0	72.0	63.0	57.6	55.8	55.8
30°	514.6	305.9	181.7	115.1	81.0	64.8	57.6	52.2	52.2	50.4
32.5°	406.6	232.1	133.1	86.4	63.0	50.4	45.0	43.2	41.4	41.4
35°	316.7	172.7	99.0	64.8	48.6	41.4	36.0	36.0	36.0	34.2
37.5°	242.9	127.7	75.6	50.4	39.6	34.2	30.6	30.6	28.8	28.8
40°	185.3	95.4	55.8	39.6	32.4	28.8	25.2	25.2	25.2	25.2
42.5°	138.5	72.0	45.0	32.4	27.0	23.4	21.6	21.6	21.6	21.6
45°	102.6	54.0	34.2	27.0	23.4	21.6	19.8	18.0	19.8	19.8
47.5°	75.6	41.4	27.0	21.6	19.8	18.0	18.0	16.2	16.2	16.2
50°	55.8	32.4	23.4	19.8	18.0	16.2	14.4	14.4	14.4	14.4
52.5°	41.4	25.2	19.8	16.2	14.4	14.4	12.6	12.6	12.6	12.6
55°	30.6	19.8	16.2	14.4	12.6	12.6	10.8	10.8	10.8	10.8
57.5°	23.4	16.2	14.4	12.6	12.6	10.8	10.8	9.0	9.0	9.0
60°	18.0	14.4	10.8	10.8	10.8	10.8	9.0	9.0	9.0	9.0
62.5°	14.4	10.8	9.0	9.0	9.0	9.0	7.2	7.2	7.2	7.2
65°	10.8	9.0	9.0	9.0	9.0	7.2	7.2	5.4	5.4	5.4





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	9.0	7.2	7.2	7.2	7.2	7.2	5.4	5.4	5.4	5.4
70°	7.2	5.4	5.4	5.4	5.4	5.4	5.4	3.6	3.6	3.6
72.5°	5.4	5.4	5.4	5.4	5.4	3.6	3.6	3.6	3.6	3.6
75°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	1.8	1.8	1.8
77.5°	3.6	1.8	1.8	1.8	3.6	1.8	1.8	1.8	1.8	1.8
80°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
82.5°	1.8	1.8	1.8	1.8	1.8	1.8	0.0	0.0	0.0	0.0
85°	1.8	1.8	1.8	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)