

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: P592030

Luminaire Tested: **GRZ-10L-930-ASYMx40-X-UNV-STD-2F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592030
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-10L-930-ASYMx40-X-UNV-STD-2F
Description: iO LED GRAZER WITH ASYMx40 OPTIC
1000 LUMENS PER FOOT, 2 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

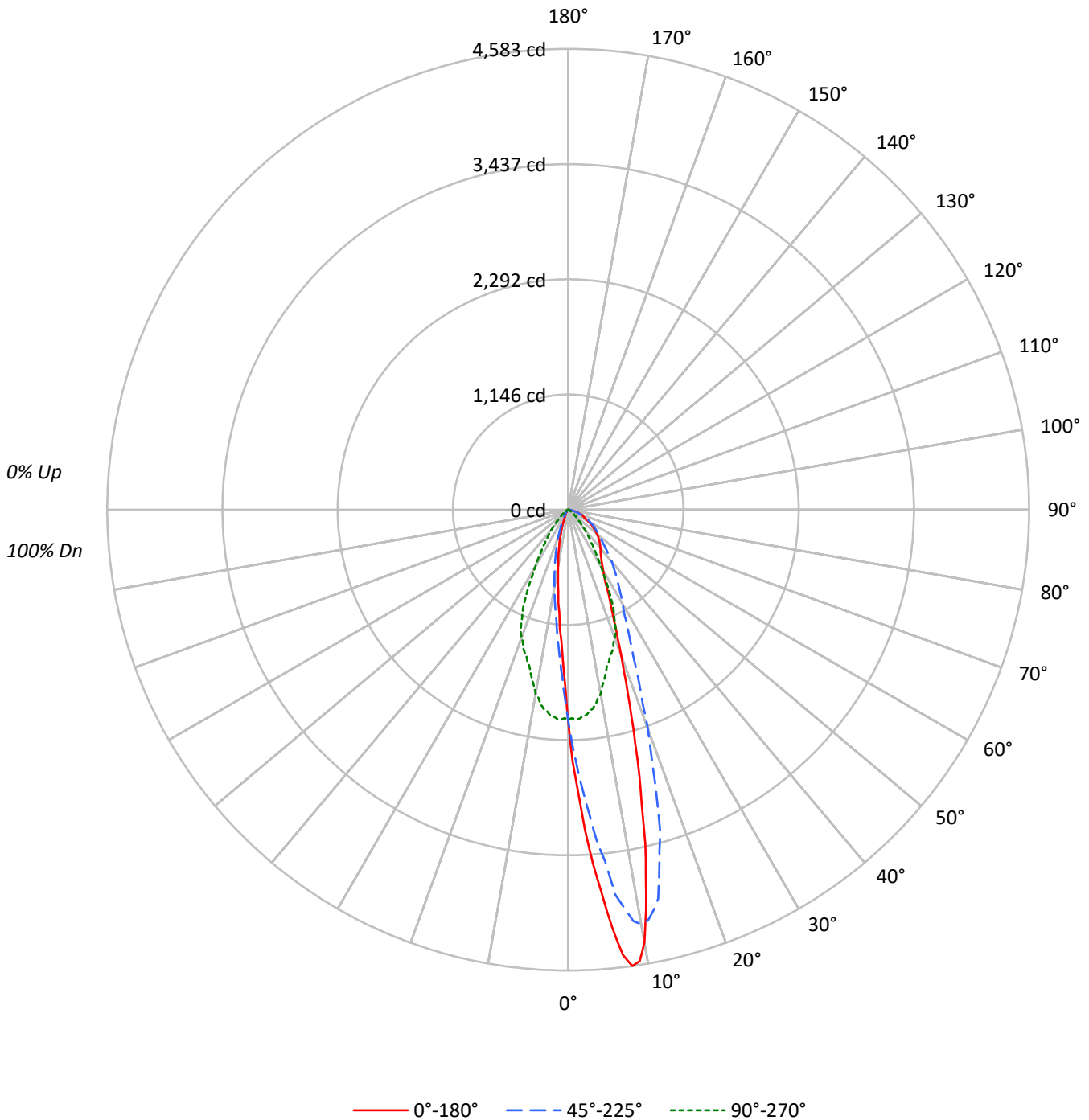
Lumens per Lamp: N/A
Luminaire Lumens: 1730.0 lumens
Efficiency: N/A
Efficacy: 90.6 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 19.1
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



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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°	67431	67431	67431
5°	124172	66525	33148
10°	143167	61012	18969
15°	91544	52326	10895
20°	52742	46587	5478
25°	34711	37329	2872
30°	25844	24308	1868
35°	22450	15954	1340
40°	21064	10644	1058
45°	20039	6544	900
50°	18713	3959	718
55°	17042	2421	602
60°	14803	1505	581
65°	12997	1093	413
70°	13020	850	340
75°	10056	674	225
80°	5988	335	335
85°	2668	667	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	220.5	12.7
10°-20°	483.8	28.0
20°-30°	369.6	21.4
30°-40°	248.2	14.3
40°-50°	178.5	10.3
50°-60°	124.1	7.2
60°-70°	71.2	4.1
70°-80°	29.4	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°	1073.8	62.1
0°-40°	1322.1	76.4
0°-60°	1624.6	93.9
0°-90°	1730.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1730.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2088	2088	2088	2088	2088	
5°	3831	3326	2052	1250	1023	393
15°	2738	3508	1565	491	326	752
25°	974	1472	1048	150	81	456
35°	570	851	405	48	34	361
45°	439	507	143	23	20	338
55°	303	330	43	12	11	269
65°	170	190	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°	2088.2	2088.2	2088.2	2088.2	2088.2	2088.2	2088.2	2088.2	2088.2	2088.2	2088.2
1°	2496.5	2405.2	2433.8	2405.2	2362.2	2331.7	2281.6	2231.4	2161.6	2091.7	2073.8
2°	2809.9	2770.5	2706.0	2666.6	2589.6	2569.9	2467.8	2371.1	2270.8	2116.8	2086.4
3°	3178.8	3085.7	3055.2	2972.9	2883.3	2800.9	2657.7	2509.0	2317.4	2141.9	2082.8
4°	3522.7	3451.0	3440.3	3332.8	3171.6	3046.3	2874.4	2636.2	2403.4	2163.4	2061.3
5°	3830.7	3827.1	3726.8	3685.6	3495.8	3325.7	3080.3	2786.6	2475.0	2193.8	2052.3
6°	4174.5	4147.7	4129.8	4015.2	3791.3	3517.3	3295.2	2919.1	2591.4	2204.6	2012.9
7°	4459.3	4446.8	4412.7	4303.5	4092.2	3859.3	3486.8	2999.7	2593.2	2167.0	1995.0
8°	4582.9	4548.8	4588.2	4487.9	4330.3	3997.2	3599.7	3139.4	2641.5	2172.3	1955.6
9°	4547.0	4505.9	4611.5	4565.0	4437.8	4142.3	3694.6	3162.7	2646.9	2132.9	1894.8
10°	4366.2	4409.1	4489.7	4559.6	4459.3	4187.1	3726.8	3196.7	2614.7	2093.5	1860.7
11°	4052.8	4083.2	4235.4	4414.5	4373.3	4160.2	3780.5	3180.6	2569.9	2038.0	1783.7
12°	3716.1	3828.9	3918.4	4142.3	4231.8	4074.3	3685.6	3105.4	2528.7	1971.8	1724.6
13°	3406.3	3438.5	3583.6	3832.5	4009.8	3970.4	3599.7	3053.4	2471.4	1921.6	1663.7
14°	3015.8	3051.7	3275.5	3520.9	3698.2	3737.6	3445.7	2974.7	2417.7	1864.3	1597.5
15°	2738.3	2734.7	2944.2	3162.7	3456.4	3508.3	3286.3	2869.0	2381.9	1832.1	1565.2
16°	2423.1	2444.6	2605.7	2865.4	3164.5	3313.1	3153.7	2759.7	2328.1	1794.5	1509.7
17°	2161.6	2197.4	2351.4	2586.0	2870.8	3028.4	2879.7	2645.1	2254.7	1758.6	1482.8
18°	1918.0	1939.5	2082.8	2285.2	2573.5	2741.8	2716.8	2503.6	2201.0	1724.6	1445.2
19°	1712.1	1724.6	1823.1	2055.9	2342.5	2509.0	2494.7	2358.6	2154.4	1679.8	1386.1
20°	1534.8	1556.3	1638.7	1824.9	2079.2	2315.6	2295.9	2224.3	2081.0	1647.6	1355.7
21°	1377.2	1380.8	1477.5	1672.7	1896.5	2070.3	2118.6	2093.5	1980.7	1602.8	1316.3
22.5°	1189.1	1210.6	1266.2	1418.4	1653.0	1821.3	1898.3	1891.2	1844.6	1502.5	1223.2
23°	1133.6	1149.7	1216.0	1375.4	1563.4	1744.3	1810.6	1810.6	1794.5	1454.2	1178.4
24°	1042.3	1040.5	1094.2	1241.1	1456.0	1590.3	1704.9	1708.5	1683.4	1386.1	1117.5
25°	974.2	959.9	999.3	1130.0	1327.0	1472.1	1543.7	1583.1	1561.6	1285.9	1047.7
26°	897.2	902.6	927.7	1044.1	1228.5	1373.6	1425.5	1479.3	1448.8	1192.7	959.9
27°	820.2	825.6	848.9	970.7	1160.5	1298.4	1346.7	1366.4	1346.7	1078.1	882.9
28°	771.9	775.5	793.4	891.9	1090.6	1196.3	1255.4	1276.9	1217.8	995.7	796.9
29°	728.9	739.6	750.4	829.2	1015.4	1133.6	1173.0	1183.8	1122.9	893.6	714.6
30°	693.1	687.7	711.0	780.8	940.2	1083.5	1106.8	1097.8	1042.3	805.9	651.9
32.5°	619.6	619.6	634.0	685.9	841.7	952.7	974.2	934.8	823.8	637.6	512.2
35°	569.5	569.5	582.0	614.3	725.3	850.7	861.4	791.6	673.4	512.2	404.7
37.5°	526.5	531.9	540.8	562.3	648.3	754.0	746.8	671.6	565.9	410.1	322.4
40°	499.7	499.7	501.4	519.4	578.5	673.4	646.5	564.1	476.4	329.5	252.5
42.5°	469.2	471.0	474.6	481.7	524.7	582.0	560.5	501.4	410.1	265.1	191.6
45°	438.8	437.0	440.6	445.9	474.6	506.8	496.1	444.1	352.8	206.0	143.3
47.5°	406.5	408.3	404.7	411.9	433.4	453.1	442.3	397.6	293.7	157.6	105.7
50°	372.5	374.3	368.9	377.9	397.6	404.7	397.6	352.8	247.1	116.4	78.8
52.5°	336.7	334.9	331.3	343.8	356.4	363.5	358.2	308.0	195.2	87.8	57.3
55°	302.7	299.1	297.3	304.4	318.8	329.5	320.6	265.1	150.4	62.7	43.0
57.5°	265.1	263.3	261.5	266.8	283.0	293.7	279.4	218.5	114.6	46.6	32.2
60°	229.2	232.8	225.7	229.2	248.9	259.7	243.6	179.1	84.2	34.0	23.3
62.5°	198.8	197.0	189.8	195.2	213.1	223.9	204.2	137.9	62.7	25.1	17.9
65°	170.1	168.3	159.4	163.0	177.3	189.8	168.3	109.2	46.6	19.7	14.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	157.6	155.8	132.5	130.7	148.6	154.0	134.3	80.6	34.0	14.3	10.7
70°	137.9	136.1	116.4	103.9	116.4	121.8	103.9	59.1	23.3	10.7	9.0
72.5°	105.7	107.5	98.5	80.6	89.5	94.9	77.0	41.2	16.1	9.0	7.2
75°	80.6	78.8	75.2	62.7	68.1	69.8	55.5	28.7	12.5	5.4	5.4
77.5°	53.7	51.9	53.7	46.6	46.6	48.4	37.6	19.7	9.0	3.6	3.6
80°	32.2	34.0	35.8	34.0	30.4	30.4	23.3	12.5	5.4	3.6	1.8
82.5°	16.1	17.9	19.7	19.7	17.9	17.9	14.3	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°	2088.2	2088.2	2088.2	2088.2	2088.2	2088.2	2088.2	2088.2	2088.2	2088.2
1°	2039.8	1993.2	1993.2	1927.0	1876.8	1846.4	1792.7	1794.5	1767.6	1751.5
2°	2021.9	1921.6	1835.7	1751.5	1672.7	1633.3	1590.3	1547.3	1515.1	1506.1
3°	1996.8	1862.5	1724.6	1611.8	1513.3	1450.6	1387.9	1348.5	1334.2	1303.8
4°	1964.6	1781.9	1606.4	1482.8	1362.9	1276.9	1239.3	1183.8	1167.7	1187.4
5°	1925.2	1704.9	1516.9	1368.2	1250.0	1146.2	1092.4	1063.8	1020.8	1022.6
6°	1880.4	1608.2	1404.0	1237.5	1117.5	1040.5	985.0	945.6	915.1	931.3
7°	1823.1	1522.2	1305.6	1140.8	1026.2	943.8	899.0	843.5	809.5	809.5
8°	1774.8	1448.8	1214.2	1054.8	940.2	850.7	789.8	752.2	727.1	721.7
9°	1696.0	1366.4	1140.8	981.4	865.0	771.9	703.8	668.0	646.5	642.9
10°	1649.4	1293.0	1081.7	902.6	782.6	703.8	637.6	599.9	578.5	578.5
11°	1574.2	1219.6	993.9	838.1	718.1	626.8	573.1	542.6	517.6	512.2
12°	1504.3	1158.7	936.6	786.2	659.0	567.7	517.6	485.3	467.4	467.4
13°	1438.1	1106.8	886.5	723.5	592.8	522.9	467.4	431.6	413.7	411.9
14°	1384.4	1035.1	823.8	668.0	542.6	469.2	413.7	388.6	370.7	368.9
15°	1337.8	986.8	786.2	607.1	490.7	415.5	367.1	345.6	327.7	325.9
16°	1291.2	938.4	734.3	558.8	445.9	379.7	329.5	299.1	288.3	288.3
17°	1253.6	909.8	685.9	519.4	399.4	334.9	288.3	259.7	252.5	241.8
18°	1205.3	852.5	642.9	472.8	367.1	295.5	250.7	227.4	213.1	207.7
19°	1158.7	802.3	601.7	424.4	325.9	257.9	220.3	193.4	180.9	180.9
20°	1105.0	771.9	557.0	388.6	286.5	231.0	186.3	166.6	159.4	159.4
21°	1049.5	719.9	506.8	345.6	254.3	197.0	166.6	145.1	136.1	132.5
22.5°	970.7	639.3	447.7	295.5	206.0	161.2	134.3	118.2	112.8	111.0
23°	931.3	610.7	415.5	279.4	193.4	148.6	125.4	109.2	103.9	102.1
24°	870.4	565.9	376.1	243.6	166.6	130.7	107.5	96.7	93.1	91.3
25°	805.9	519.4	336.7	216.7	150.4	114.6	96.7	86.0	82.4	80.6
26°	739.6	467.4	295.5	188.0	132.5	100.3	86.0	77.0	75.2	73.4
27°	671.6	422.6	261.5	166.6	116.4	91.3	77.0	69.8	66.3	68.1
28°	607.1	379.7	227.4	146.9	100.3	80.6	69.8	62.7	60.9	59.1
29°	562.3	338.5	204.2	127.2	89.5	71.6	62.7	57.3	55.5	55.5
30°	512.2	304.4	180.9	114.6	80.6	64.5	57.3	51.9	51.9	50.1
32.5°	404.7	231.0	132.5	86.0	62.7	50.1	44.8	43.0	41.2	41.2
35°	315.2	171.9	98.5	64.5	48.4	41.2	35.8	35.8	35.8	34.0
37.5°	241.8	127.2	75.2	50.1	39.4	34.0	30.4	30.4	28.7	28.7
40°	184.5	94.9	55.5	39.4	32.2	28.7	25.1	25.1	25.1	25.1
42.5°	137.9	71.6	44.8	32.2	26.9	23.3	21.5	21.5	21.5	21.5
45°	102.1	53.7	34.0	26.9	23.3	21.5	19.7	17.9	19.7	19.7
47.5°	75.2	41.2	26.9	21.5	19.7	17.9	17.9	16.1	16.1	16.1
50°	55.5	32.2	23.3	19.7	17.9	16.1	14.3	14.3	14.3	14.3
52.5°	41.2	25.1	19.7	16.1	14.3	14.3	12.5	12.5	12.5	12.5
55°	30.4	19.7	16.1	14.3	12.5	12.5	10.7	10.7	10.7	10.7
57.5°	23.3	16.1	14.3	12.5	12.5	10.7	10.7	9.0	9.0	9.0
60°	17.9	14.3	10.7	10.7	10.7	10.7	9.0	9.0	9.0	9.0
62.5°	14.3	10.7	9.0	9.0	9.0	9.0	7.2	7.2	7.2	7.2
65°	10.7	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)