

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: P592126

Luminaire Tested: **GRZ-15L-940-ASYMx40-X-UNV-STD-2F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592126
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-2F
Description: iO LED GRAZER WITH ASYMx40 OPTIC
1500 LUMENS PER FOOT, 2 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

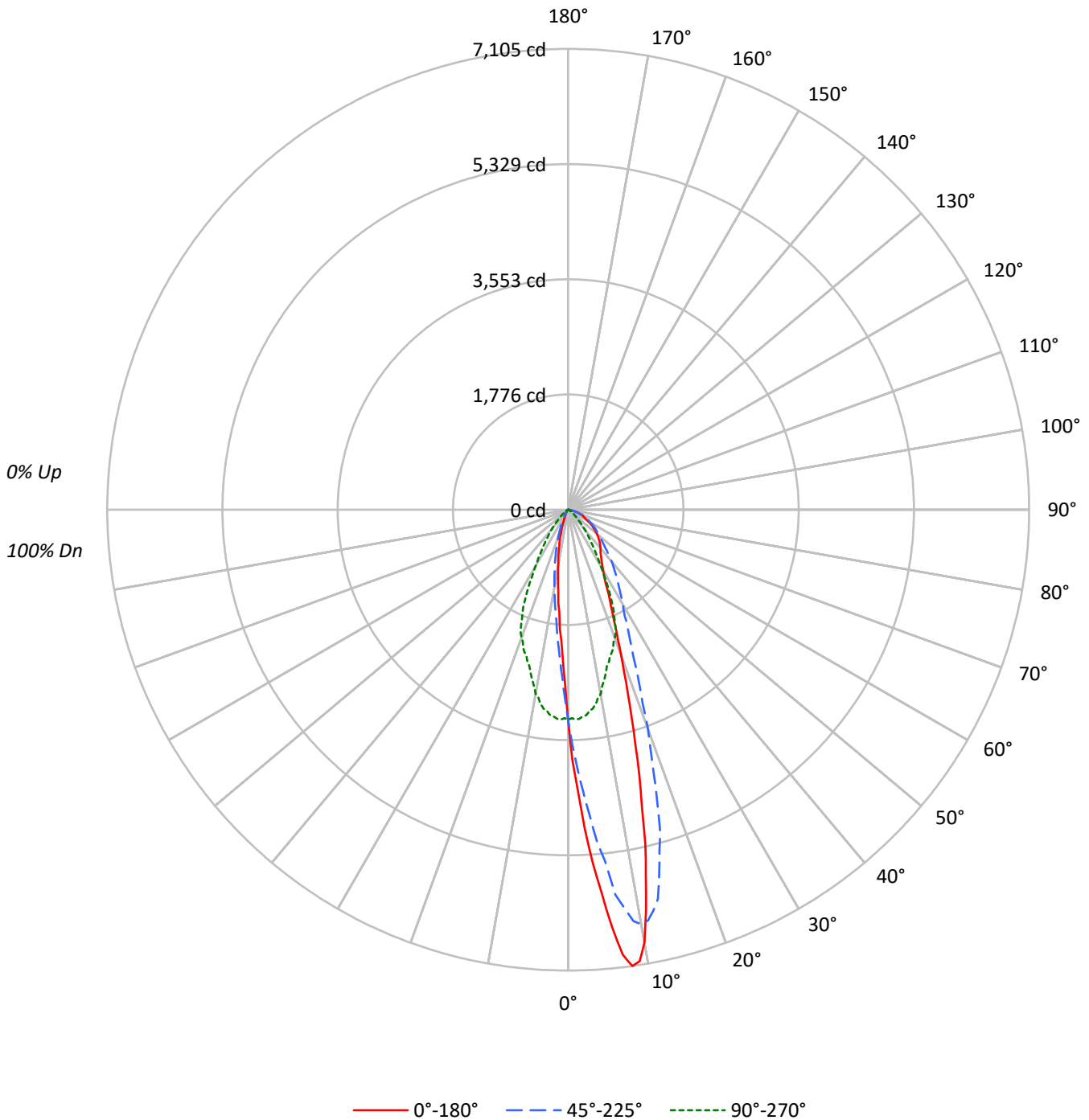
Lumens per Lamp: N/A
Luminaire Lumens: 2682.0 lumens
Efficiency: N/A
Efficacy: 92.5 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 29
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°	104538	104538	104538
5°	192503	103135	51388
10°	221948	94589	29406
15°	141917	81123	16893
20°	81766	72223	8491
25°	53815	57870	4450
30°	40065	37682	2897
35°	34805	24737	2081
40°	32652	16503	1640
45°	31063	10143	1393
50°	29012	6139	1115
55°	26415	3750	940
60°	22953	2331	898
65°	20157	1696	634
70°	20186	1312	529
75°	15583	1036	349
80°	9298	521	521
85°	4113	1037	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	341.8	12.7
10°-20°	750.0	28.0
20°-30°	573.0	21.4
30°-40°	384.8	14.3
40°-50°	276.7	10.3
50°-60°	192.4	7.2
60°-70°	110.3	4.1
70°-80°	45.6	1.7
80°-90°	7.5	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°	1664.7	62.1
0°-40°	2049.6	76.4
0°-60°	2518.6	93.9
0°-90°	2682.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2682.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3237	3237	3237	3237	3237	
5°	5939	5156	3182	1938	1585	610
15°	4245	5439	2427	761	505	1165
25°	1510	2282	1624	233	125	707
35°	883	1319	628	75	53	559
45°	680	786	222	36	30	523
55°	469	511	67	19	17	417
65°	264	294	22	14	8	272
75°	125	108	8	6	3	133
85°	11	14	3	0	0	17
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°	3237.3	3237.3	3237.3	3237.3	3237.3	3237.3	3237.3	3237.3	3237.3	3237.3	3237.3
1°	3870.3	3728.7	3773.1	3728.7	3662.0	3614.8	3537.1	3459.4	3351.1	3242.8	3215.0
2°	4356.1	4295.1	4195.1	4134.0	4014.6	3984.1	3825.9	3675.9	3520.5	3281.7	3234.5
3°	4928.1	4783.7	4736.5	4608.8	4470.0	4342.3	4120.1	3889.7	3592.6	3320.6	3228.9
4°	5461.1	5350.1	5333.4	5166.8	4917.0	4722.6	4456.1	4086.8	3725.9	3353.9	3195.6
5°	5938.7	5933.1	5777.6	5713.8	5419.5	5155.7	4775.4	4320.0	3837.0	3401.1	3181.7
6°	6471.7	6430.1	6402.3	6224.6	5877.6	5452.8	5108.5	4525.5	4017.4	3417.7	3120.7
7°	6913.2	6893.8	6841.0	6671.6	6344.0	5983.1	5405.6	4650.4	4020.2	3359.4	3092.9
8°	7104.8	7052.0	7113.1	6957.6	6713.3	6196.9	5580.5	4867.0	4095.2	3367.8	3031.8
9°	7049.2	6985.4	7149.2	7077.0	6879.9	6421.8	5727.7	4903.1	4103.5	3306.7	2937.4
10°	6768.8	6835.5	6960.4	7068.7	6913.2	6491.2	5777.6	4955.8	4053.5	3245.6	2884.7
11°	6283.0	6330.1	6566.1	6843.8	6779.9	6449.5	5860.9	4930.9	3984.1	3159.5	2765.3
12°	5761.0	5935.9	6074.7	6421.8	6560.6	6316.3	5713.8	4814.2	3920.3	3056.8	2673.7
13°	5280.7	5330.7	5555.5	5941.5	6216.3	6155.2	5580.5	4733.7	3831.4	2979.1	2579.3
14°	4675.4	4731.0	5078.0	5458.4	5733.2	5794.3	5341.8	4611.6	3748.1	2890.2	2476.5
15°	4245.1	4239.5	4564.4	4903.1	5358.4	5438.9	5094.7	4447.8	3692.6	2840.2	2426.6
16°	3756.4	3789.8	4039.6	4442.2	4905.9	5136.3	4889.2	4278.4	3609.3	2781.9	2340.5
17°	3351.1	3406.6	3645.4	4009.1	4450.5	4694.9	4464.4	4100.7	3495.5	2726.4	2298.8
18°	2973.5	3006.8	3228.9	3542.7	3989.7	4250.6	4211.8	3881.4	3412.2	2673.7	2240.5
19°	2654.2	2673.7	2826.4	3187.3	3631.5	3889.7	3867.5	3656.5	3340.0	2604.2	2148.9
20°	2379.4	2412.7	2540.4	2829.1	3223.4	3589.9	3559.3	3448.3	3226.2	2554.3	2101.7
21°	2135.0	2140.6	2290.5	2593.1	2940.2	3209.5	3284.5	3245.6	3070.7	2484.9	2040.6
22.5°	1843.5	1876.8	1962.9	2198.9	2562.6	2823.6	2943.0	2931.9	2859.7	2329.4	1896.3
23°	1757.4	1782.4	1885.2	2132.3	2423.8	2704.2	2806.9	2806.9	2781.9	2254.4	1826.9
24°	1615.9	1613.1	1696.4	1924.0	2257.2	2465.4	2643.1	2648.7	2609.8	2148.9	1732.5
25°	1510.4	1488.1	1549.2	1751.9	2057.3	2282.2	2393.2	2454.3	2421.0	1993.4	1624.2
26°	1391.0	1399.3	1438.2	1618.6	1904.6	2129.5	2210.0	2293.3	2246.1	1849.1	1488.1
27°	1271.6	1279.9	1316.0	1504.8	1799.1	2012.9	2087.8	2118.4	2087.8	1671.4	1368.8
28°	1196.6	1202.2	1229.9	1382.6	1690.8	1854.6	1946.2	1979.6	1887.9	1543.7	1235.5
29°	1130.0	1146.6	1163.3	1285.5	1574.2	1757.4	1818.5	1835.2	1740.8	1385.4	1107.8
30°	1074.5	1066.1	1102.2	1210.5	1457.6	1679.7	1715.8	1701.9	1615.9	1249.4	1010.6
32.5°	960.6	960.6	982.8	1063.4	1304.9	1477.0	1510.4	1449.3	1277.1	988.4	794.0
35°	882.9	882.9	902.3	952.3	1124.4	1318.8	1335.4	1227.2	1043.9	794.0	627.5
37.5°	816.3	824.6	838.5	871.8	1005.0	1168.9	1157.8	1041.1	877.3	635.8	499.7
40°	774.6	774.6	777.4	805.2	896.8	1043.9	1002.3	874.6	738.5	510.9	391.5
42.5°	727.4	730.2	735.7	746.8	813.5	902.3	869.0	777.4	635.8	410.9	297.1
45°	680.2	677.4	683.0	691.3	735.7	785.7	769.1	688.5	546.9	319.3	222.1
47.5°	630.2	633.0	627.5	638.6	671.9	702.4	685.8	616.4	455.3	244.3	163.8
50°	577.5	580.3	571.9	585.8	616.4	627.5	616.4	546.9	383.1	180.5	122.2
52.5°	522.0	519.2	513.6	533.1	552.5	563.6	555.3	477.5	302.6	136.0	88.8
55°	469.2	463.7	460.9	472.0	494.2	510.9	497.0	410.9	233.2	97.2	66.6
57.5°	410.9	408.1	405.4	413.7	438.7	455.3	433.1	338.7	177.7	72.2	50.0
60°	355.4	360.9	349.8	355.4	385.9	402.6	377.6	277.6	130.5	52.8	36.1
62.5°	308.2	305.4	294.3	302.6	330.4	347.0	316.5	213.8	97.2	38.9	27.8
65°	263.8	261.0	247.1	252.7	274.9	294.3	261.0	169.4	72.2	30.5	22.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	244.3	241.5	205.5	202.7	230.4	238.8	208.2	124.9	52.8	22.2	16.7
70°	213.8	211.0	180.5	161.0	180.5	188.8	161.0	91.6	36.1	16.7	13.9
72.5°	163.8	166.6	152.7	124.9	138.8	147.1	119.4	63.9	25.0	13.9	11.1
75°	124.9	122.2	116.6	97.2	105.5	108.3	86.1	44.4	19.4	8.3	8.3
77.5°	83.3	80.5	83.3	72.2	72.2	75.0	58.3	30.5	13.9	5.6	5.6
80°	50.0	52.8	55.5	52.8	47.2	47.2	36.1	19.4	8.3	5.6	2.8
82.5°	25.0	27.8	30.5	30.5	27.8	27.8	22.2	11.1	5.6	2.8	2.8
85°	11.1	11.1	13.9	13.9	11.1	13.9	8.3	5.6	2.8	2.8	2.8
87.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
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°	3237.3	3237.3	3237.3	3237.3	3237.3	3237.3	3237.3	3237.3	3237.3	3237.3
1°	3162.3	3090.1	3090.1	2987.4	2909.6	2862.4	2779.2	2781.9	2740.3	2715.3
2°	3134.5	2979.1	2845.8	2715.3	2593.1	2532.1	2465.4	2398.8	2348.8	2334.9
3°	3095.7	2887.4	2673.7	2498.7	2346.0	2248.9	2151.7	2090.6	2068.4	2021.2
4°	3045.7	2762.5	2490.4	2298.8	2112.8	1979.6	1921.3	1835.2	1810.2	1840.7
5°	2984.6	2643.1	2351.6	2121.2	1937.9	1776.9	1693.6	1649.2	1582.5	1585.3
6°	2915.2	2493.2	2176.7	1918.5	1732.5	1613.1	1527.0	1465.9	1418.7	1443.7
7°	2826.4	2359.9	2024.0	1768.6	1590.9	1463.2	1393.7	1307.7	1254.9	1254.9
8°	2751.4	2246.1	1882.4	1635.3	1457.6	1318.8	1224.4	1166.1	1127.2	1118.9
9°	2629.2	2118.4	1768.6	1521.5	1341.0	1196.6	1091.1	1035.6	1002.3	996.7
10°	2557.0	2004.5	1676.9	1399.3	1213.3	1091.1	988.4	930.1	896.8	896.8
11°	2440.4	1890.7	1540.9	1299.3	1113.3	971.7	888.4	841.2	802.4	794.0
12°	2332.2	1796.3	1452.0	1218.8	1021.7	880.1	802.4	752.4	724.6	724.6
13°	2229.4	1715.8	1374.3	1121.7	919.0	810.7	724.6	669.1	641.3	638.6
14°	2146.1	1604.7	1277.1	1035.6	841.2	727.4	641.3	602.5	574.7	571.9
15°	2074.0	1529.8	1218.8	941.2	760.7	644.1	569.2	535.8	508.1	505.3
16°	2001.8	1454.8	1138.3	866.2	691.3	588.6	510.9	463.7	447.0	447.0
17°	1943.5	1410.4	1063.4	805.2	619.1	519.2	447.0	402.6	391.5	374.8
18°	1868.5	1321.6	996.7	733.0	569.2	458.1	388.7	352.6	330.4	322.1
19°	1796.3	1243.8	932.9	658.0	505.3	399.8	341.5	299.8	280.4	280.4
20°	1713.0	1196.6	863.5	602.5	444.2	358.2	288.7	258.2	247.1	247.1
21°	1627.0	1116.1	785.7	535.8	394.2	305.4	258.2	224.9	211.0	205.5
22.5°	1504.8	991.2	694.1	458.1	319.3	249.9	208.2	183.2	174.9	172.1
23°	1443.7	946.7	644.1	433.1	299.8	230.4	194.3	169.4	161.0	158.3
24°	1349.3	877.3	583.0	377.6	258.2	202.7	166.6	149.9	144.4	141.6
25°	1249.4	805.2	522.0	335.9	233.2	177.7	149.9	133.3	127.7	124.9
26°	1146.6	724.6	458.1	291.5	205.5	155.5	133.3	119.4	116.6	113.8
27°	1041.1	655.2	405.4	258.2	180.5	141.6	119.4	108.3	102.7	105.5
28°	941.2	588.6	352.6	227.7	155.5	124.9	108.3	97.2	94.4	91.6
29°	871.8	524.7	316.5	197.1	138.8	111.1	97.2	88.8	86.1	86.1
30°	794.0	472.0	280.4	177.7	124.9	99.9	88.8	80.5	80.5	77.7
32.5°	627.5	358.2	205.5	133.3	97.2	77.7	69.4	66.6	63.9	63.9
35°	488.6	266.5	152.7	99.9	75.0	63.9	55.5	55.5	55.5	52.8
37.5°	374.8	197.1	116.6	77.7	61.1	52.8	47.2	47.2	44.4	44.4
40°	286.0	147.1	86.1	61.1	50.0	44.4	38.9	38.9	38.9	38.9
42.5°	213.8	111.1	69.4	50.0	41.6	36.1	33.3	33.3	33.3	33.3
45°	158.3	83.3	52.8	41.6	36.1	33.3	30.5	27.8	30.5	30.5
47.5°	116.6	63.9	41.6	33.3	30.5	27.8	27.8	25.0	25.0	25.0
50°	86.1	50.0	36.1	30.5	27.8	25.0	22.2	22.2	22.2	22.2
52.5°	63.9	38.9	30.5	25.0	22.2	22.2	19.4	19.4	19.4	19.4
55°	47.2	30.5	25.0	22.2	19.4	19.4	16.7	16.7	16.7	16.7
57.5°	36.1	25.0	22.2	19.4	19.4	16.7	16.7	13.9	13.9	13.9
60°	27.8	22.2	16.7	16.7	16.7	16.7	13.9	13.9	13.9	13.9
62.5°	22.2	16.7	13.9	13.9	13.9	13.9	11.1	11.1	11.1	11.1
65°	16.7	13.9	13.9	13.9	13.9	11.1	11.1	8.3	8.3	8.3



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	13.9	11.1	11.1	11.1	11.1	11.1	8.3	8.3	8.3	8.3
70°	11.1	8.3	8.3	8.3	8.3	8.3	8.3	5.6	5.6	5.6
72.5°	8.3	8.3	8.3	8.3	8.3	5.6	5.6	5.6	5.6	5.6
75°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	2.8	2.8	2.8
77.5°	5.6	2.8	2.8	2.8	5.6	2.8	2.8	2.8	2.8	2.8
80°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
82.5°	2.8	2.8	2.8	2.8	2.8	2.8	0.0	0.0	0.0	0.0
85°	2.8	2.8	2.8	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)