

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: P592031

Luminaire Tested: **GRZ-10L-930-ASYMx40-X-UNV-STD-4F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592031
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-4F
Description: iO LED GRAZER WITH ASYMx40 OPTIC
1000 LUMENS PER FOOT, 4 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

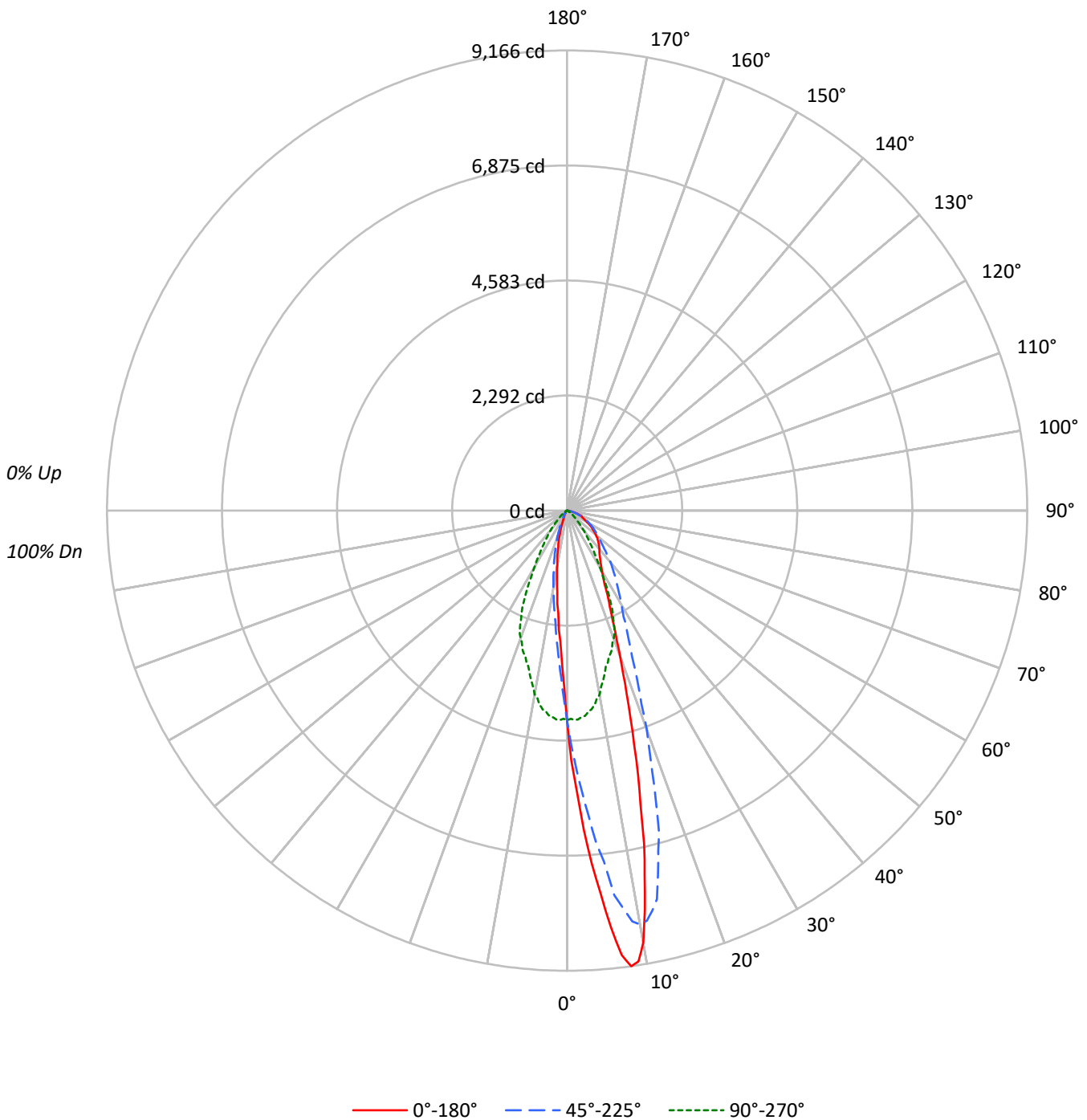
Lumens per Lamp: N/A
Luminaire Lumens: 3460.0 lumens
Efficiency: N/A
Efficacy: 91.1 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 38
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°	67430	67430	67430
5°	124172	66527	33148
10°	143165	61012	18967
15°	91542	52328	10897
20°	52742	46587	5478
25°	34712	37328	2872
30°	25842	24308	1870
35°	22450	15956	1342
40°	21062	10644	1056
45°	20037	6542	900
50°	18713	3959	721
55°	17039	2421	605
60°	14806	1505	578
65°	13001	1096	409
70°	13020	845	340
75°	10056	667	225
80°	5997	335	335
85°	2649	667	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	440.9	12.7
10°-20°	967.6	28.0
20°-30°	739.2	21.4
30°-40°	496.5	14.3
40°-50°	356.9	10.3
50°-60°	248.2	7.2
60°-70°	142.3	4.1
70°-80°	58.8	1.7
80°-90°	9.6	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°	2147.6	62.1
0°-40°	2644.1	76.4
0°-60°	3249.3	93.9
0°-90°	3460.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3460.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	4176	4176	4176	4176	4176	
5°	7661	6651	4105	2500	2045	786
15°	5476	7017	3130	981	652	1503
25°	1948	2944	2095	301	161	913
35°	1139	1701	810	97	68	722
45°	878	1014	286	47	39	675
55°	605	659	86	25	22	538
65°	340	380	29	18	11	351
75°	161	140	11	7	4	171
85°	14	18	4	0	0	22
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°	4176.3	4176.3	4176.3	4176.3	4176.3	4176.3	4176.3	4176.3	4176.3	4176.3	4176.3
1°	4993.0	4810.3	4867.6	4810.3	4724.3	4663.5	4563.2	4462.9	4323.2	4183.5	4147.7
2°	5619.8	5541.0	5412.0	5333.2	5179.2	5139.8	4935.7	4742.2	4541.7	4233.6	4172.7
3°	6357.6	6171.4	6110.5	5945.7	5766.6	5601.9	5315.3	5018.0	4634.8	4283.8	4165.6
4°	7045.3	6902.1	6880.6	6665.7	6343.3	6092.6	5748.7	5272.3	4806.7	4326.8	4122.6
5°	7661.4	7654.2	7453.6	7371.3	6991.6	6651.3	6160.6	5573.2	4950.0	4387.7	4104.7
6°	8349.1	8295.4	8259.5	8030.3	7582.6	7034.6	6590.4	5838.3	5182.8	4409.1	4025.9
7°	8918.6	8893.5	8825.5	8607.0	8184.3	7718.7	6973.7	5999.4	5186.4	4333.9	3990.1
8°	9165.7	9097.7	9176.5	8975.9	8660.7	7994.5	7199.3	6278.8	5283.1	4344.7	3911.3
9°	9094.1	9011.7	9223.0	9129.9	8875.6	8284.6	7389.2	6325.4	5293.8	4265.9	3789.5
10°	8732.3	8818.3	8979.5	9119.2	8918.6	8374.2	7453.6	6393.4	5229.4	4187.1	3721.4
11°	8105.5	8166.4	8470.9	8829.0	8746.7	8320.4	7561.1	6361.2	5139.8	4076.0	3567.4
12°	7432.2	7657.8	7836.9	8284.6	8463.7	8148.5	7371.3	6210.8	5057.4	3943.5	3449.2
13°	6812.5	6877.0	7167.1	7665.0	8019.6	7940.8	7199.3	6106.9	4942.8	3843.2	3327.5
14°	6031.7	6103.3	6551.0	7041.7	7396.3	7475.1	6891.3	5949.3	4835.4	3728.6	3194.9
15°	5476.5	5469.3	5888.4	6325.4	6912.8	7016.7	6572.5	5738.0	4763.7	3664.1	3130.5
16°	4846.1	4889.1	5211.5	5730.8	6329.0	6626.3	6307.5	5519.5	4656.3	3588.9	3019.4
17°	4323.2	4394.8	4702.9	5172.1	5741.6	6056.8	5759.5	5290.3	4509.4	3517.3	2965.7
18°	3836.1	3879.0	4165.6	4570.3	5147.0	5483.7	5433.5	5007.3	4402.0	3449.2	2890.5
19°	3424.2	3449.2	3646.2	4111.9	4684.9	5018.0	4989.4	4717.2	4308.9	3359.7	2772.3
20°	3069.6	3112.5	3277.3	3649.8	4158.4	4631.2	4591.8	4448.5	4162.0	3295.2	2711.4
21°	2754.4	2761.5	2955.0	3345.4	3793.1	4140.5	4237.2	4187.1	3961.4	3205.7	2632.6
22.5°	2378.3	2421.3	2532.3	2836.8	3306.0	3642.6	3796.7	3782.3	3689.2	3005.1	2446.3
23°	2267.3	2299.5	2432.0	2750.8	3126.9	3488.6	3621.2	3621.2	3588.9	2908.4	2356.8
24°	2084.6	2081.0	2188.5	2482.2	2912.0	3180.6	3409.8	3417.0	3366.9	2772.3	2235.0
25°	1948.5	1919.8	1998.6	2260.1	2654.1	2944.2	3087.5	3166.3	3123.3	2571.7	2095.3
26°	1794.5	1805.2	1855.4	2088.2	2457.1	2747.2	2851.1	2958.5	2897.6	2385.5	1919.8
27°	1640.4	1651.2	1697.8	1941.3	2321.0	2596.8	2693.5	2732.9	2693.5	2156.2	1765.8
28°	1543.7	1550.9	1586.7	1783.7	2181.3	2392.6	2510.8	2553.8	2435.6	1991.5	1593.9
29°	1457.8	1479.3	1500.8	1658.4	2030.9	2267.3	2346.1	2367.5	2245.8	1787.3	1429.1
30°	1386.1	1375.4	1422.0	1561.6	1880.4	2167.0	2213.5	2195.6	2084.6	1611.8	1303.8
32.5°	1239.3	1239.3	1267.9	1371.8	1683.4	1905.5	1948.5	1869.7	1647.6	1275.1	1024.4
35°	1139.0	1139.0	1164.1	1228.5	1450.6	1701.3	1722.8	1583.1	1346.7	1024.4	809.5
37.5°	1053.0	1063.8	1081.7	1124.7	1296.6	1507.9	1493.6	1343.2	1131.8	820.2	644.7
40°	999.3	999.3	1002.9	1038.7	1156.9	1346.7	1293.0	1128.3	952.7	659.0	505.0
42.5°	938.4	942.0	949.2	963.5	1049.5	1164.1	1121.1	1002.9	820.2	530.1	383.2
45°	877.5	873.9	881.1	891.9	949.2	1013.6	992.1	888.3	705.6	411.9	286.5
47.5°	813.1	816.6	809.5	823.8	866.8	906.2	884.7	795.2	587.4	315.2	211.3
50°	745.0	748.6	737.8	755.8	795.2	809.5	795.2	705.6	494.3	232.8	157.6
52.5°	673.4	669.8	662.6	687.7	712.8	727.1	716.4	616.1	390.4	175.5	114.6
55°	605.3	598.2	594.6	608.9	637.6	659.0	641.1	530.1	300.9	125.4	86.0
57.5°	530.1	526.5	522.9	533.7	565.9	587.4	558.8	437.0	229.2	93.1	64.5
60°	458.5	465.6	451.3	458.5	497.9	519.4	487.1	358.2	168.3	68.1	46.6
62.5°	397.6	394.0	379.7	390.4	426.2	447.7	408.3	275.8	125.4	50.1	35.8
65°	340.3	336.7	318.8	325.9	354.6	379.7	336.7	218.5	93.1	39.4	28.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	315.2	311.6	265.1	261.5	297.3	308.0	268.6	161.2	68.1	28.7	21.5
70°	275.8	272.2	232.8	207.7	232.8	243.6	207.7	118.2	46.6	21.5	17.9
72.5°	211.3	214.9	197.0	161.2	179.1	189.8	154.0	82.4	32.2	17.9	14.3
75°	161.2	157.6	150.4	125.4	136.1	139.7	111.0	57.3	25.1	10.7	10.7
77.5°	107.5	103.9	107.5	93.1	93.1	96.7	75.2	39.4	17.9	7.2	7.2
80°	64.5	68.1	71.6	68.1	60.9	60.9	46.6	25.1	10.7	7.2	3.6
82.5°	32.2	35.8	39.4	39.4	35.8	35.8	28.7	14.3	7.2	3.6	3.6
85°	14.3	14.3	17.9	17.9	14.3	17.9	10.7	7.2	3.6	3.6	3.6
87.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
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°	4176.3	4176.3	4176.3	4176.3	4176.3	4176.3	4176.3	4176.3	4176.3	4176.3
1°	4079.6	3986.5	3986.5	3854.0	3753.7	3692.8	3585.3	3588.9	3535.2	3503.0
2°	4043.8	3843.2	3671.3	3503.0	3345.4	3266.6	3180.6	3094.6	3030.2	3012.3
3°	3993.7	3725.0	3449.2	3223.6	3026.6	2901.2	2775.9	2697.1	2668.4	2607.5
4°	3929.2	3563.9	3212.8	2965.7	2725.7	2553.8	2478.6	2367.5	2335.3	2374.7
5°	3850.4	3409.8	3033.8	2736.5	2500.1	2292.3	2184.9	2127.6	2041.6	2045.2
6°	3760.8	3216.4	2808.1	2475.0	2235.0	2081.0	1970.0	1891.2	1830.3	1862.5
7°	3646.2	3044.5	2611.1	2281.6	2052.3	1887.6	1798.0	1687.0	1619.0	1619.0
8°	3549.5	2897.6	2428.4	2109.7	1880.4	1701.3	1579.6	1504.3	1454.2	1443.4
9°	3391.9	2732.9	2281.6	1962.8	1730.0	1543.7	1407.6	1336.0	1293.0	1285.9
10°	3298.8	2586.0	2163.4	1805.2	1565.2	1407.6	1275.1	1199.9	1156.9	1156.9
11°	3148.4	2439.2	1987.9	1676.3	1436.3	1253.6	1146.2	1085.3	1035.1	1024.4
12°	3008.7	2317.4	1873.3	1572.4	1318.1	1135.4	1035.1	970.7	934.8	934.8
13°	2876.2	2213.5	1773.0	1447.0	1185.6	1045.9	934.8	863.2	827.4	823.8
14°	2768.7	2070.3	1647.6	1336.0	1085.3	938.4	827.4	777.2	741.4	737.8
15°	2675.6	1973.5	1572.4	1214.2	981.4	831.0	734.3	691.3	655.5	651.9
16°	2582.4	1876.8	1468.5	1117.5	891.9	759.3	659.0	598.2	576.7	576.7
17°	2507.2	1819.5	1371.8	1038.7	798.7	669.8	576.7	519.4	505.0	483.5
18°	2410.5	1704.9	1285.9	945.6	734.3	591.0	501.4	454.9	426.2	415.5
19°	2317.4	1604.6	1203.5	848.9	651.9	515.8	440.6	386.8	361.8	361.8
20°	2209.9	1543.7	1113.9	777.2	573.1	462.0	372.5	333.1	318.8	318.8
21°	2098.9	1439.9	1013.6	691.3	508.6	394.0	333.1	290.1	272.2	265.1
22.5°	1941.3	1278.7	895.4	591.0	411.9	322.4	268.6	236.4	225.7	222.1
23°	1862.5	1221.4	831.0	558.8	386.8	297.3	250.7	218.5	207.7	204.2
24°	1740.7	1131.8	752.2	487.1	333.1	261.5	214.9	193.4	186.3	182.7
25°	1611.8	1038.7	673.4	433.4	300.9	229.2	193.4	171.9	164.8	161.2
26°	1479.3	934.8	591.0	376.1	265.1	200.6	171.9	154.0	150.4	146.9
27°	1343.2	845.3	522.9	333.1	232.8	182.7	154.0	139.7	132.5	136.1
28°	1214.2	759.3	454.9	293.7	200.6	161.2	139.7	125.4	121.8	118.2
29°	1124.7	677.0	408.3	254.3	179.1	143.3	125.4	114.6	111.0	111.0
30°	1024.4	608.9	361.8	229.2	161.2	128.9	114.6	103.9	103.9	100.3
32.5°	809.5	462.0	265.1	171.9	125.4	100.3	89.5	86.0	82.4	82.4
35°	630.4	343.8	197.0	128.9	96.7	82.4	71.6	71.6	71.6	68.1
37.5°	483.5	254.3	150.4	100.3	78.8	68.1	60.9	60.9	57.3	57.3
40°	368.9	189.8	111.0	78.8	64.5	57.3	50.1	50.1	50.1	50.1
42.5°	275.8	143.3	89.5	64.5	53.7	46.6	43.0	43.0	43.0	43.0
45°	204.2	107.5	68.1	53.7	46.6	43.0	39.4	35.8	39.4	39.4
47.5°	150.4	82.4	53.7	43.0	39.4	35.8	35.8	32.2	32.2	32.2
50°	111.0	64.5	46.6	39.4	35.8	32.2	28.7	28.7	28.7	28.7
52.5°	82.4	50.1	39.4	32.2	28.7	28.7	25.1	25.1	25.1	25.1
55°	60.9	39.4	32.2	28.7	25.1	25.1	21.5	21.5	21.5	21.5
57.5°	46.6	32.2	28.7	25.1	25.1	21.5	21.5	17.9	17.9	17.9
60°	35.8	28.7	21.5	21.5	21.5	21.5	17.9	17.9	17.9	17.9
62.5°	28.7	21.5	17.9	17.9	17.9	17.9	14.3	14.3	14.3	14.3
65°	21.5	17.9	17.9	17.9	17.9	14.3	14.3	10.7	10.7	10.7



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	17.9	14.3	14.3	14.3	14.3	14.3	10.7	10.7	10.7	10.7
70°	14.3	10.7	10.7	10.7	10.7	10.7	10.7	7.2	7.2	7.2
72.5°	10.7	10.7	10.7	10.7	10.7	7.2	7.2	7.2	7.2	7.2
75°	7.2	7.2	7.2	7.2	7.2	7.2	7.2	3.6	3.6	3.6
77.5°	7.2	3.6	3.6	3.6	7.2	3.6	3.6	3.6	3.6	3.6
80°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
82.5°	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0	0.0
85°	3.6	3.6	3.6	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)