

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: P592062

Luminaire Tested: **GRZ-10L-940-ASYMx40-X-UNV-STD-2F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592062
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-940-ASYMx40-X-UNV-STD-2F
Description: iO LED GRAZER WITH ASYMx40 OPTIC
1000 LUMENS PER FOOT, 2 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

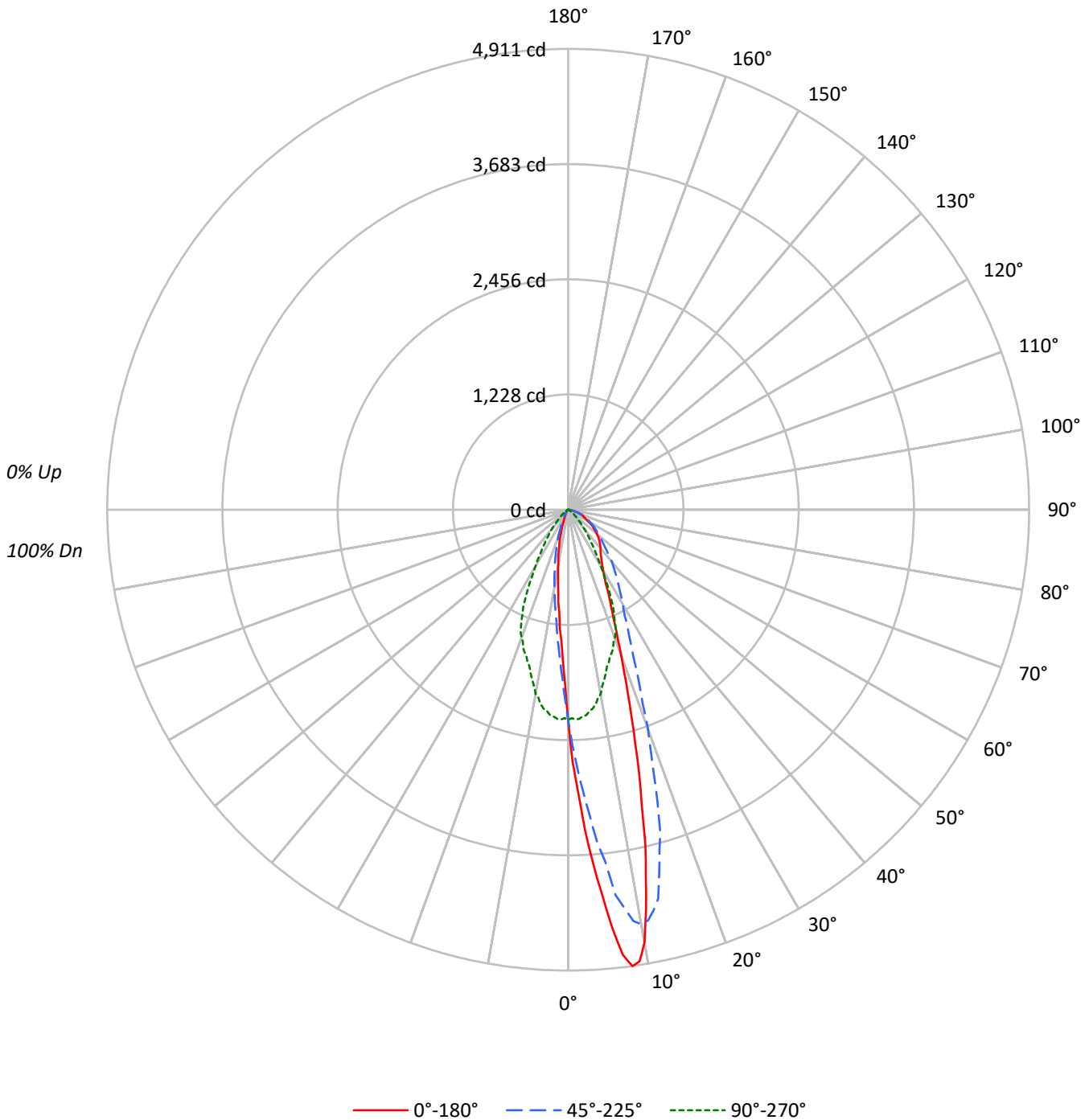
Lumens per Lamp: N/A
Luminaire Lumens: 1854.0 lumens
Efficiency: N/A
Efficacy: 97.1 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 19.1
Input Voltage (V): 120
Input Current (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°	72262	72262	72262
5°	133073	71297	35524
10°	153427	65386	20326
15°	98103	56077	11677
20°	56522	49928	5869
25°	37201	40005	3078
30°	27693	26049	2002
35°	24059	17097	1439
40°	22573	11407	1134
45°	21473	7010	964
50°	20055	4240	774
55°	18263	2595	647
60°	15868	1615	620
65°	13929	1177	443
70°	13954	906	359
75°	10780	724	237
80°	6416	353	353
85°	2853	704	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	236.3	12.7
10°-20°	518.5	28.0
20°-30°	396.1	21.4
30°-40°	266.0	14.3
40°-50°	191.3	10.3
50°-60°	133.0	7.2
60°-70°	76.3	4.1
70°-80°	31.5	1.7
80°-90°	5.1	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°	1150.8	62.1
0°-40°	1416.8	76.4
0°-60°	1741.1	93.9
0°-90°	1854.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1854.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2238	2238	2238	2238	2238	
5°	4105	3564	2200	1340	1096	421
15°	2934	3760	1677	526	349	806
25°	1044	1578	1123	161	86	489
35°	610	912	434	52	36	387
45°	470	543	154	25	21	362
55°	324	353	46	13	12	288
65°	182	203	15	10	6	188
75°	86	75	6	4	2	92
85°	8	10	2	0	0	12
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°	2237.8	2237.8	2237.8	2237.8	2237.8	2237.8	2237.8	2237.8	2237.8	2237.8	2237.8
1°	2675.4	2577.5	2608.3	2577.5	2531.5	2498.9	2445.1	2391.4	2316.5	2241.7	2222.5
2°	3011.3	2969.1	2900.0	2857.8	2775.2	2754.1	2644.7	2541.1	2433.6	2268.5	2235.9
3°	3406.7	3306.9	3274.2	3185.9	3090.0	3001.7	2848.2	2688.9	2483.5	2295.4	2232.1
4°	3775.2	3698.4	3686.9	3571.7	3399.0	3264.6	3080.4	2825.1	2575.6	2318.4	2209.0
5°	4105.3	4101.4	3993.9	3949.8	3746.4	3564.0	3301.1	2986.3	2652.4	2351.1	2199.5
6°	4473.8	4445.0	4425.8	4302.9	4063.0	3769.4	3531.4	3128.4	2777.1	2362.6	2157.2
7°	4778.9	4765.5	4729.0	4611.9	4385.5	4136.0	3736.8	3214.7	2779.1	2322.3	2138.0
8°	4911.3	4874.9	4917.1	4809.6	4640.7	4283.8	3857.7	3364.4	2830.9	2328.0	2095.8
9°	4873.0	4828.8	4942.1	4892.2	4755.9	4439.2	3959.4	3389.4	2836.6	2285.8	2030.6
10°	4679.1	4725.2	4811.5	4886.4	4778.9	4487.2	3993.9	3425.8	2802.1	2243.6	1994.1
11°	4343.2	4375.9	4539.0	4730.9	4686.8	4458.4	4051.5	3408.6	2754.1	2184.1	1911.6
12°	3982.4	4103.3	4199.3	4439.2	4535.2	4366.3	3949.8	3328.0	2710.0	2113.1	1848.2
13°	3650.4	3684.9	3840.4	4107.2	4297.2	4255.0	3857.7	3272.3	2648.6	2059.3	1783.0
14°	3232.0	3270.4	3510.3	3773.2	3963.2	4005.5	3692.6	3187.9	2591.0	1997.9	1712.0
15°	2934.5	2930.7	3155.2	3389.4	3704.1	3759.8	3521.8	3074.6	2552.6	1963.4	1677.4
16°	2596.7	2619.8	2792.5	3070.8	3391.3	3550.6	3379.8	2957.6	2495.0	1923.1	1617.9
17°	2316.5	2354.9	2520.0	2771.4	3076.5	3245.4	3086.1	2834.7	2416.3	1884.7	1589.1
18°	2055.5	2078.5	2232.1	2449.0	2758.0	2938.4	2911.5	2683.1	2358.8	1848.2	1548.8
19°	1834.8	1848.2	1953.8	2203.3	2510.4	2688.9	2673.5	2527.6	2308.8	1800.3	1485.5
20°	1644.8	1667.8	1756.1	1955.7	2228.2	2481.6	2460.5	2383.7	2230.2	1765.7	1452.9
21°	1475.9	1479.7	1583.4	1792.6	2032.5	2218.6	2270.5	2243.6	2122.7	1717.7	1410.6
22.5°	1274.4	1297.4	1356.9	1520.0	1771.5	1951.9	2034.4	2026.7	1976.8	1610.2	1310.8
23°	1214.9	1232.2	1303.2	1474.0	1675.5	1869.3	1940.4	1940.4	1923.1	1558.4	1262.9
24°	1117.0	1115.1	1172.7	1330.0	1560.3	1704.3	1827.1	1831.0	1804.1	1485.5	1197.6
25°	1044.1	1028.7	1070.9	1211.0	1422.2	1577.6	1654.4	1696.6	1673.6	1378.0	1122.8
26°	961.5	967.3	994.2	1118.9	1316.6	1472.1	1527.7	1585.3	1552.7	1278.2	1028.7
27°	879.0	884.8	909.7	1040.2	1243.7	1391.5	1443.3	1464.4	1443.3	1155.4	946.2
28°	827.2	831.0	850.2	955.8	1168.8	1282.1	1345.4	1368.4	1305.1	1067.1	854.1
29°	781.1	792.6	804.2	888.6	1088.2	1214.9	1257.1	1268.6	1203.4	957.7	765.8
30°	742.7	737.0	761.9	836.8	1007.6	1161.1	1186.1	1176.5	1117.0	863.7	698.6
32.5°	664.1	664.1	679.4	735.1	902.0	1021.0	1044.1	1001.8	882.9	683.3	548.9
35°	610.3	610.3	623.8	658.3	777.3	911.6	923.2	848.3	721.6	548.9	433.7
37.5°	564.3	570.0	579.6	602.6	694.8	808.0	800.3	719.7	606.5	439.5	345.5
40°	535.5	535.5	537.4	556.6	619.9	721.6	692.8	604.6	510.5	353.1	270.6
42.5°	502.8	504.8	508.6	516.3	562.3	623.8	600.7	537.4	439.5	284.0	205.4
45°	470.2	468.3	472.1	477.9	508.6	543.1	531.6	476.0	378.1	220.7	153.5
47.5°	435.7	437.6	433.7	441.4	464.5	485.6	474.1	426.1	314.8	168.9	113.2
50°	399.2	401.1	395.4	405.0	426.1	433.7	426.1	378.1	264.9	124.8	84.4
52.5°	360.8	358.9	355.1	368.5	381.9	389.6	383.8	330.1	209.2	94.0	61.4
55°	324.4	320.5	318.6	326.3	341.6	353.1	343.5	284.0	161.2	67.2	46.1
57.5°	284.0	282.1	280.2	286.0	303.2	314.8	299.4	234.1	122.8	49.9	34.5
60°	245.7	249.5	241.8	245.7	266.8	278.3	261.0	191.9	90.2	36.5	25.0
62.5°	213.0	211.1	203.4	209.2	228.4	239.9	218.8	147.8	67.2	26.9	19.2
65°	182.3	180.4	170.8	174.7	190.0	203.4	180.4	117.1	49.9	21.1	15.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	168.9	167.0	142.0	140.1	159.3	165.1	143.9	86.4	36.5	15.4	11.5
70°	147.8	145.9	124.8	111.3	124.8	130.5	111.3	63.3	25.0	11.5	9.6
72.5°	113.2	115.2	105.6	86.4	96.0	101.7	82.5	44.1	17.3	9.6	7.7
75°	86.4	84.4	80.6	67.2	72.9	74.9	59.5	30.7	13.4	5.8	5.8
77.5°	57.6	55.7	57.6	49.9	49.9	51.8	40.3	21.1	9.6	3.8	3.8
80°	34.5	36.5	38.4	36.5	32.6	32.6	25.0	13.4	5.8	3.8	1.9
82.5°	17.3	19.2	21.1	21.1	19.2	19.2	15.4	7.7	3.8	1.9	1.9
85°	7.7	7.7	9.6	9.6	7.7	9.6	5.8	3.8	1.9	1.9	1.9
87.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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°	2237.8	2237.8	2237.8	2237.8	2237.8	2237.8	2237.8	2237.8	2237.8	2237.8
1°	2186.0	2136.1	2136.1	2065.1	2011.4	1978.7	1921.2	1923.1	1894.3	1877.0
2°	2166.8	2059.3	1967.2	1877.0	1792.6	1750.3	1704.3	1658.2	1623.7	1614.1
3°	2140.0	1996.0	1848.2	1727.3	1621.8	1554.6	1487.4	1445.2	1429.8	1397.2
4°	2105.4	1909.6	1721.6	1589.1	1460.5	1368.4	1328.1	1268.6	1251.3	1272.5
5°	2063.2	1827.1	1625.6	1466.3	1339.6	1228.3	1170.7	1140.0	1094.0	1095.9
6°	2015.2	1723.5	1504.7	1326.2	1197.6	1115.1	1055.6	1013.4	980.7	998.0
7°	1953.8	1631.4	1399.1	1222.6	1099.7	1011.4	963.5	904.0	867.5	867.5
8°	1902.0	1552.7	1301.2	1130.4	1007.6	911.6	846.4	806.1	779.2	773.5
9°	1817.5	1464.4	1222.6	1051.7	927.0	827.2	754.3	715.9	692.8	689.0
10°	1767.6	1385.7	1159.2	967.3	838.7	754.3	683.3	642.9	619.9	619.9
11°	1687.0	1307.0	1065.2	898.2	769.6	671.7	614.2	581.5	554.7	548.9
12°	1612.2	1241.8	1003.8	842.5	706.3	608.4	554.7	520.1	500.9	500.9
13°	1541.2	1186.1	950.0	775.4	635.3	560.4	500.9	462.5	443.3	441.4
14°	1483.6	1109.3	882.9	715.9	581.5	502.8	443.3	416.5	397.3	395.4
15°	1433.7	1057.5	842.5	650.6	525.9	445.3	393.4	370.4	351.2	349.3
16°	1383.8	1005.7	786.9	598.8	477.9	406.9	353.1	320.5	309.0	309.0
17°	1343.5	975.0	735.1	556.6	428.0	358.9	309.0	278.3	270.6	259.1
18°	1291.7	913.6	689.0	506.7	393.4	316.7	268.7	243.7	228.4	222.6
19°	1241.8	859.8	644.9	454.9	349.3	276.4	236.1	207.3	193.8	193.8
20°	1184.2	827.2	596.9	416.5	307.1	247.6	199.6	178.5	170.8	170.8
21°	1124.7	771.5	543.1	370.4	272.5	211.1	178.5	155.5	145.9	142.0
22.5°	1040.2	685.2	479.8	316.7	220.7	172.7	143.9	126.7	120.9	119.0
23°	998.0	654.5	445.3	299.4	207.3	159.3	134.3	117.1	111.3	109.4
24°	932.8	606.5	403.0	261.0	178.5	140.1	115.2	103.6	99.8	97.9
25°	863.7	556.6	360.8	232.2	161.2	122.8	103.6	92.1	88.3	86.4
26°	792.6	500.9	316.7	201.5	142.0	107.5	92.1	82.5	80.6	78.7
27°	719.7	452.9	280.2	178.5	124.8	97.9	82.5	74.9	71.0	72.9
28°	650.6	406.9	243.7	157.4	107.5	86.4	74.9	67.2	65.3	63.3
29°	602.6	362.7	218.8	136.3	96.0	76.8	67.2	61.4	59.5	59.5
30°	548.9	326.3	193.8	122.8	86.4	69.1	61.4	55.7	55.7	53.7
32.5°	433.7	247.6	142.0	92.1	67.2	53.7	48.0	46.1	44.1	44.1
35°	337.8	184.2	105.6	69.1	51.8	44.1	38.4	38.4	38.4	36.5
37.5°	259.1	136.3	80.6	53.7	42.2	36.5	32.6	32.6	30.7	30.7
40°	197.7	101.7	59.5	42.2	34.5	30.7	26.9	26.9	26.9	26.9
42.5°	147.8	76.8	48.0	34.5	28.8	25.0	23.0	23.0	23.0	23.0
45°	109.4	57.6	36.5	28.8	25.0	23.0	21.1	19.2	21.1	21.1
47.5°	80.6	44.1	28.8	23.0	21.1	19.2	19.2	17.3	17.3	17.3
50°	59.5	34.5	25.0	21.1	19.2	17.3	15.4	15.4	15.4	15.4
52.5°	44.1	26.9	21.1	17.3	15.4	15.4	13.4	13.4	13.4	13.4
55°	32.6	21.1	17.3	15.4	13.4	13.4	11.5	11.5	11.5	11.5
57.5°	25.0	17.3	15.4	13.4	13.4	11.5	11.5	9.6	9.6	9.6
60°	19.2	15.4	11.5	11.5	11.5	11.5	9.6	9.6	9.6	9.6
62.5°	15.4	11.5	9.6	9.6	9.6	9.6	7.7	7.7	7.7	7.7
65°	11.5	9.6	9.6	9.6	9.6	7.7	7.7	5.8	5.8	5.8



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	9.6	7.7	7.7	7.7	7.7	7.7	5.8	5.8	5.8	5.8
70°	7.7	5.8	5.8	5.8	5.8	5.8	5.8	3.8	3.8	3.8
72.5°	5.8	5.8	5.8	5.8	5.8	3.8	3.8	3.8	3.8	3.8
75°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	1.9	1.9	1.9
77.5°	3.8	1.9	1.9	1.9	3.8	1.9	1.9	1.9	1.9	1.9
80°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
82.5°	1.9	1.9	1.9	1.9	1.9	1.9	0.0	0.0	0.0	0.0
85°	1.9	1.9	1.9	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)