

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: P591967

Luminaire Tested: **GRZ-05L-930-ASYMx40-X-UNV-STD-4F**

Issue Date: 2/2/2022

**Test Information**

Test Method: LM-79-2019  
Report Number: P591967  
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-930-ASYMx40-X-UNV-STD-4F  
Description: iO LED GRAZER WITH ASYMx40 OPTIC  
500 LUMENS PER FOOT, 4 FOOT FIXTURE  
SUMULATED RESULTS  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

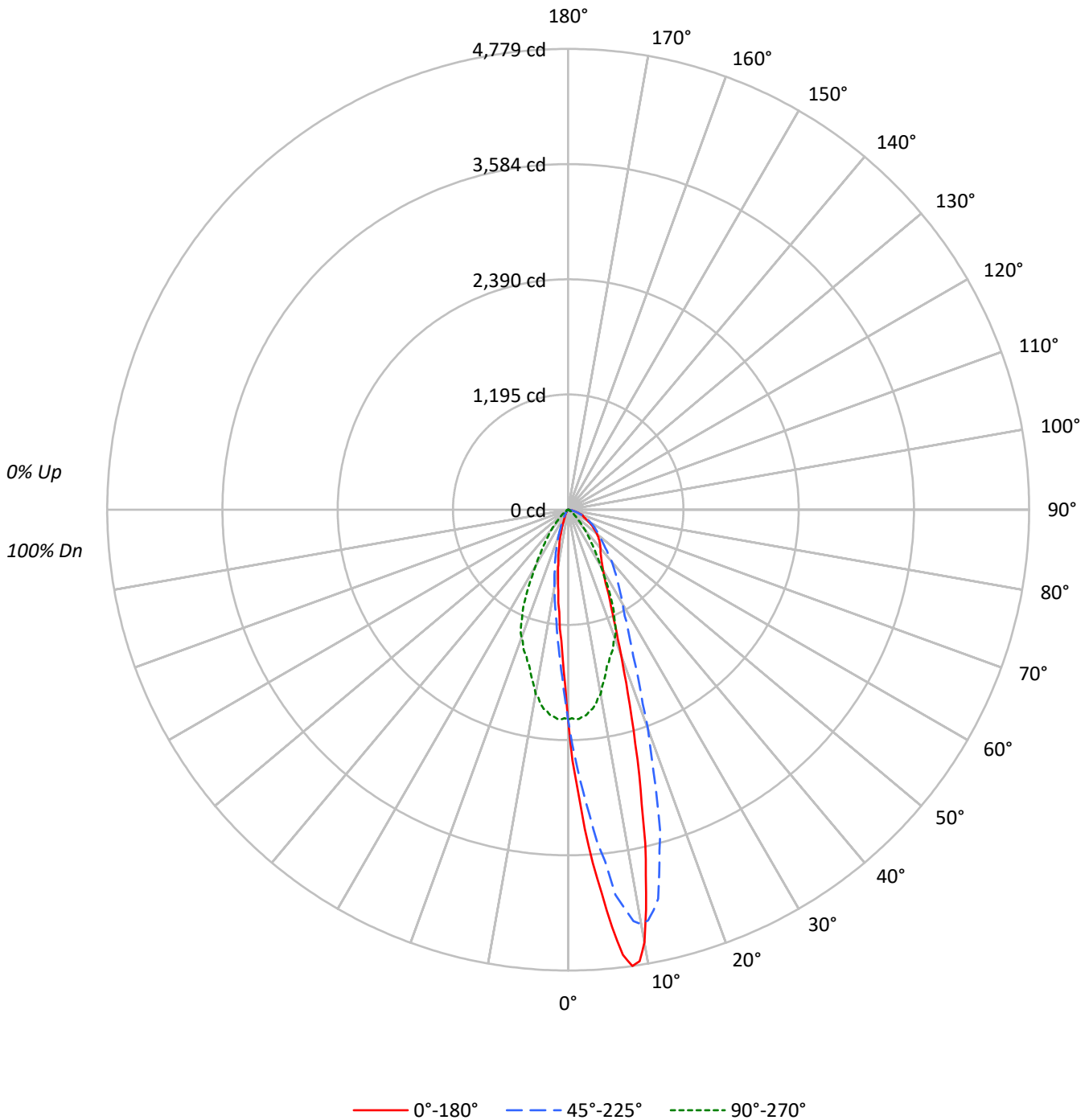
Lumens per Lamp: N/A  
Luminaire Lumens: 1804.0 lumens  
Efficiency: N/A  
Efficacy: 93.5 lumens/watt  
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71  
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')  
CIE Type: Direct

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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				
1	112	109	106	104	110	107	104	102	103	101	99	99	98	96	96	94	93	91				
2	106	100	96	92	104	98	94	91	95	92	89	92	89	87	89	87	85	83				
3	100	92	87	82	98	91	86	81	88	84	80	86	82	79	83	80	78	76				
4	94	86	79	75	92	84	79	74	82	77	73	80	76	72	78	74	71	70				
5	89	80	73	68	87	79	73	68	77	71	67	75	70	67	73	69	66	65				
6	84	74	68	63	83	74	67	63	72	67	62	71	66	62	69	65	62	60				
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	65	61	58	56				
8	76	66	59	55	75	65	59	55	64	59	55	63	58	54	62	57	54	53				
9	72	62	56	52	71	62	56	52	61	55	51	60	55	51	59	54	51	50				
10	69	59	53	49	68	59	53	49	58	52	49	57	52	48	56	52	48	47				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	35158	35158	35158
5°	64741	34686	17282
10°	74644	31811	9889
15°	47729	27283	5682
20°	27498	24290	2856
25°	18098	19463	1496
30°	13474	12674	975
35°	11706	8320	700
40°	10981	5550	550
45°	10446	3411	468
50°	9756	2065	374
55°	8884	1261	315
60°	7718	785	300
65°	6777	569	214
70°	6788	439	175
75°	5240	349	119
80°	3124	177	177
85°	1389	352	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	229.9	12.7
10°-20°	504.5	28.0
20°-30°	385.4	21.4
30°-40°	258.9	14.3
40°-50°	186.1	10.3
50°-60°	129.4	7.2
60°-70°	74.2	4.1
70°-80°	30.7	1.7
80°-90°	5.0	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°	1119.8	62.1
0°-40°	1378.6	76.4
0°-60°	1694.1	93.9
0°-90°	1804.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1804.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2178	2178	2178	2178	2178	
5°	3994	3468	2140	1304	1066	410
15°	2855	3658	1632	512	340	784
25°	1016	1535	1092	157	84	476
35°	594	887	422	50	36	376
45°	458	528	149	24	20	352
55°	316	344	45	13	11	281
65°	177	198	15	9	6	183
75°	84	73	6	4	2	89
85°	8	9	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°	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5
1°	2603.3	2508.0	2537.9	2508.0	2463.2	2431.5	2379.2	2326.9	2254.1	2181.2	2162.5
2°	2930.1	2889.0	2821.8	2780.7	2700.4	2679.8	2573.4	2472.5	2368.0	2207.4	2175.6
3°	3314.8	3217.7	3185.9	3100.0	3006.6	2920.7	2771.3	2616.3	2416.5	2233.5	2171.9
4°	3673.3	3598.6	3587.4	3475.4	3307.3	3176.6	2997.3	2748.9	2506.2	2255.9	2149.5
5°	3994.5	3990.8	3886.2	3843.3	3645.3	3467.9	3212.1	2905.8	2580.9	2287.7	2140.1
6°	4353.1	4325.1	4306.4	4186.9	3953.5	3667.7	3436.2	3044.0	2702.2	2298.9	2099.1
7°	4650.0	4637.0	4601.5	4487.6	4267.2	4024.4	3636.0	3128.0	2704.1	2259.7	2080.4
8°	4778.9	4743.4	4784.5	4679.9	4515.6	4168.2	3753.6	3273.7	2754.5	2265.3	2039.3
9°	4741.5	4698.6	4808.8	4760.2	4627.6	4319.5	3852.6	3298.0	2760.1	2224.2	1975.8
10°	4552.9	4597.7	4681.8	4754.6	4650.0	4366.2	3886.2	3333.5	2726.5	2183.1	1940.3
11°	4226.1	4257.9	4416.6	4603.3	4560.4	4338.2	3942.3	3316.7	2679.8	2125.2	1860.0
12°	3875.0	3992.7	4086.1	4319.5	4412.9	4248.5	3843.3	3238.2	2636.9	2056.1	1798.4
13°	3552.0	3585.6	3736.8	3996.4	4181.3	4140.2	3753.6	3184.1	2577.1	2003.8	1734.9
14°	3144.8	3182.2	3415.6	3671.5	3856.4	3897.4	3593.0	3101.9	2521.1	1944.1	1665.8
15°	2855.4	2851.6	3070.1	3298.0	3604.2	3658.4	3426.8	2991.7	2483.8	1910.4	1632.2
16°	2526.7	2549.1	2717.2	2988.0	3299.8	3454.8	3288.6	2877.8	2427.7	1871.2	1574.3
17°	2254.1	2291.4	2452.0	2696.6	2993.6	3157.9	3002.9	2758.3	2351.2	1833.9	1546.3
18°	2000.1	2022.5	2171.9	2382.9	2683.6	2859.1	2833.0	2610.7	2295.1	1798.4	1507.1
19°	1785.3	1798.4	1901.1	2143.9	2442.7	2616.3	2601.4	2459.5	2246.6	1751.7	1445.4
20°	1600.4	1622.8	1708.7	1903.0	2168.1	2414.7	2394.1	2319.4	2170.0	1718.1	1413.7
21°	1436.1	1439.8	1540.7	1744.2	1977.7	2158.8	2209.2	2183.1	2065.4	1671.4	1372.6
22.5°	1240.0	1262.4	1320.3	1479.0	1723.7	1899.2	1979.5	1972.1	1923.5	1566.8	1275.5
23°	1182.1	1198.9	1268.0	1434.2	1630.3	1818.9	1888.0	1888.0	1871.2	1516.4	1228.8
24°	1086.9	1085.0	1141.0	1294.2	1518.3	1658.3	1777.8	1781.6	1755.4	1445.4	1165.3
25°	1015.9	1001.0	1042.1	1178.4	1383.8	1535.1	1609.8	1650.9	1628.4	1340.9	1092.5
26°	935.6	941.2	967.4	1088.7	1281.1	1432.4	1486.5	1542.5	1510.8	1243.7	1001.0
27°	855.3	860.9	885.2	1012.2	1210.1	1353.9	1404.3	1424.9	1404.3	1124.2	920.7
28°	804.9	808.6	827.3	930.0	1137.3	1247.5	1309.1	1331.5	1269.9	1038.3	831.0
29°	760.1	771.3	782.5	864.6	1058.9	1182.1	1223.2	1234.4	1170.9	931.9	745.1
30°	722.7	717.1	741.4	814.2	980.4	1129.8	1154.1	1144.8	1086.9	840.4	679.8
32.5°	646.1	646.1	661.1	715.2	877.7	993.5	1015.9	974.8	859.0	664.8	534.1
35°	593.9	593.9	606.9	640.5	756.3	887.1	898.3	825.4	702.2	534.1	422.1
37.5°	549.0	554.6	564.0	586.4	676.0	786.2	778.7	700.3	590.1	427.7	336.1
40°	521.0	521.0	522.9	541.6	603.2	702.2	674.2	588.3	496.8	343.6	263.3
42.5°	489.3	491.1	494.9	502.4	547.2	606.9	584.5	522.9	427.7	276.4	199.8
45°	457.5	455.7	459.4	465.0	494.9	528.5	517.3	463.1	367.9	214.8	149.4
47.5°	423.9	425.8	422.1	429.5	451.9	472.5	461.3	414.6	306.3	164.3	110.2
50°	388.4	390.3	384.7	394.0	414.6	422.1	414.6	367.9	257.7	121.4	82.2
52.5°	351.1	349.2	345.5	358.6	371.6	379.1	373.5	321.2	203.6	91.5	59.8
55°	315.6	311.9	310.0	317.5	332.4	343.6	334.3	276.4	156.9	65.4	44.8
57.5°	276.4	274.5	272.7	278.3	295.1	306.3	291.3	227.8	119.5	48.6	33.6
60°	239.0	242.8	235.3	239.0	259.6	270.8	254.0	186.7	87.8	35.5	24.3
62.5°	207.3	205.4	198.0	203.6	222.2	233.4	212.9	143.8	65.4	26.1	18.7
65°	177.4	175.5	166.2	169.9	184.9	198.0	175.5	113.9	48.6	20.5	14.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	164.3	162.5	138.2	136.3	155.0	160.6	140.1	84.0	35.5	14.9	11.2
70°	143.8	141.9	121.4	108.3	121.4	127.0	108.3	61.6	24.3	11.2	9.3
72.5°	110.2	112.0	102.7	84.0	93.4	99.0	80.3	43.0	16.8	9.3	7.5
75°	84.0	82.2	78.4	65.4	71.0	72.8	57.9	29.9	13.1	5.6	5.6
77.5°	56.0	54.2	56.0	48.6	48.6	50.4	39.2	20.5	9.3	3.7	3.7
80°	33.6	35.5	37.3	35.5	31.7	31.7	24.3	13.1	5.6	3.7	1.9
82.5°	16.8	18.7	20.5	20.5	18.7	18.7	14.9	7.5	3.7	1.9	1.9
85°	7.5	7.5	9.3	9.3	7.5	9.3	5.6	3.7	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°	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5
1°	2127.1	2078.5	2078.5	2009.4	1957.1	1925.4	1869.4	1871.2	1843.2	1826.4
2°	2108.4	2003.8	1914.2	1826.4	1744.2	1703.1	1658.3	1613.5	1579.9	1570.6
3°	2082.2	1942.2	1798.4	1680.7	1578.0	1512.7	1447.3	1406.2	1391.3	1359.5
4°	2048.6	1858.1	1675.1	1546.3	1421.2	1331.5	1292.3	1234.4	1217.6	1238.1
5°	2007.5	1777.8	1581.8	1426.8	1303.5	1195.2	1139.2	1109.3	1064.5	1066.3
6°	1960.9	1677.0	1464.1	1290.4	1165.3	1085.0	1027.1	986.0	954.3	971.1
7°	1901.1	1587.4	1361.4	1189.6	1070.1	984.2	937.5	879.6	844.1	844.1
8°	1850.7	1510.8	1266.2	1099.9	980.4	887.1	823.6	784.3	758.2	752.6
9°	1768.5	1424.9	1189.6	1023.4	902.0	804.9	733.9	696.6	674.2	670.4
10°	1720.0	1348.3	1128.0	941.2	816.1	733.9	664.8	625.6	603.2	603.2
11°	1641.5	1271.8	1036.5	874.0	748.9	653.6	597.6	565.8	539.7	534.1
12°	1568.7	1208.3	976.7	819.8	687.2	592.0	539.7	506.1	487.4	487.4
13°	1499.6	1154.1	924.4	754.5	618.1	545.3	487.4	450.1	431.4	429.5
14°	1443.6	1079.4	859.0	696.6	565.8	489.3	431.4	405.2	386.6	384.7
15°	1395.0	1029.0	819.8	633.1	511.7	433.3	382.8	360.4	341.7	339.9
16°	1346.5	978.6	765.7	582.7	465.0	395.9	343.6	311.9	300.7	300.7
17°	1307.2	948.7	715.2	541.6	416.4	349.2	300.7	270.8	263.3	252.1
18°	1256.8	888.9	670.4	493.0	382.8	308.1	261.4	237.2	222.2	216.6
19°	1208.3	836.6	627.5	442.6	339.9	268.9	229.7	201.7	188.6	188.6
20°	1152.2	804.9	580.8	405.2	298.8	240.9	194.2	173.7	166.2	166.2
21°	1094.3	750.7	528.5	360.4	265.2	205.4	173.7	151.3	141.9	138.2
22.5°	1012.2	666.7	466.9	308.1	214.8	168.1	140.1	123.3	117.7	115.8
23°	971.1	636.8	433.3	291.3	201.7	155.0	130.7	113.9	108.3	106.4
24°	907.6	590.1	392.2	254.0	173.7	136.3	112.0	100.8	97.1	95.2
25°	840.4	541.6	351.1	226.0	156.9	119.5	100.8	89.6	85.9	84.0
26°	771.3	487.4	308.1	196.1	138.2	104.6	89.6	80.3	78.4	76.6
27°	700.3	440.7	272.7	173.7	121.4	95.2	80.3	72.8	69.1	71.0
28°	633.1	395.9	237.2	153.1	104.6	84.0	72.8	65.4	63.5	61.6
29°	586.4	353.0	212.9	132.6	93.4	74.7	65.4	59.8	57.9	57.9
30°	534.1	317.5	188.6	119.5	84.0	67.2	59.8	54.2	54.2	52.3
32.5°	422.1	240.9	138.2	89.6	65.4	52.3	46.7	44.8	43.0	43.0
35°	328.7	179.3	102.7	67.2	50.4	43.0	37.3	37.3	37.3	35.5
37.5°	252.1	132.6	78.4	52.3	41.1	35.5	31.7	31.7	29.9	29.9
40°	192.4	99.0	57.9	41.1	33.6	29.9	26.1	26.1	26.1	26.1
42.5°	143.8	74.7	46.7	33.6	28.0	24.3	22.4	22.4	22.4	22.4
45°	106.4	56.0	35.5	28.0	24.3	22.4	20.5	18.7	20.5	20.5
47.5°	78.4	43.0	28.0	22.4	20.5	18.7	18.7	16.8	16.8	16.8
50°	57.9	33.6	24.3	20.5	18.7	16.8	14.9	14.9	14.9	14.9
52.5°	43.0	26.1	20.5	16.8	14.9	14.9	13.1	13.1	13.1	13.1
55°	31.7	20.5	16.8	14.9	13.1	13.1	11.2	11.2	11.2	11.2
57.5°	24.3	16.8	14.9	13.1	13.1	11.2	11.2	9.3	9.3	9.3
60°	18.7	14.9	11.2	11.2	11.2	11.2	9.3	9.3	9.3	9.3
62.5°	14.9	11.2	9.3	9.3	9.3	9.3	7.5	7.5	7.5	7.5
65°	11.2	9.3	9.3	9.3	9.3	7.5	7.5	5.6	5.6	5.6





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	9.3	7.5	7.5	7.5	7.5	7.5	5.6	5.6	5.6	5.6
70°	7.5	5.6	5.6	5.6	5.6	5.6	5.6	3.7	3.7	3.7
72.5°	5.6	5.6	5.6	5.6	5.6	3.7	3.7	3.7	3.7	3.7
75°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	1.9	1.9	1.9
77.5°	3.7	1.9	1.9	1.9	3.7	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)