

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: P591966

Luminaire Tested: **GRZ-05L-930-ASYMx40-X-UNV-STD-2F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P591966
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-2F
Description: iO LED GRAZER WITH ASYMx40 OPTIC
500 LUMENS PER FOOT, 2 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

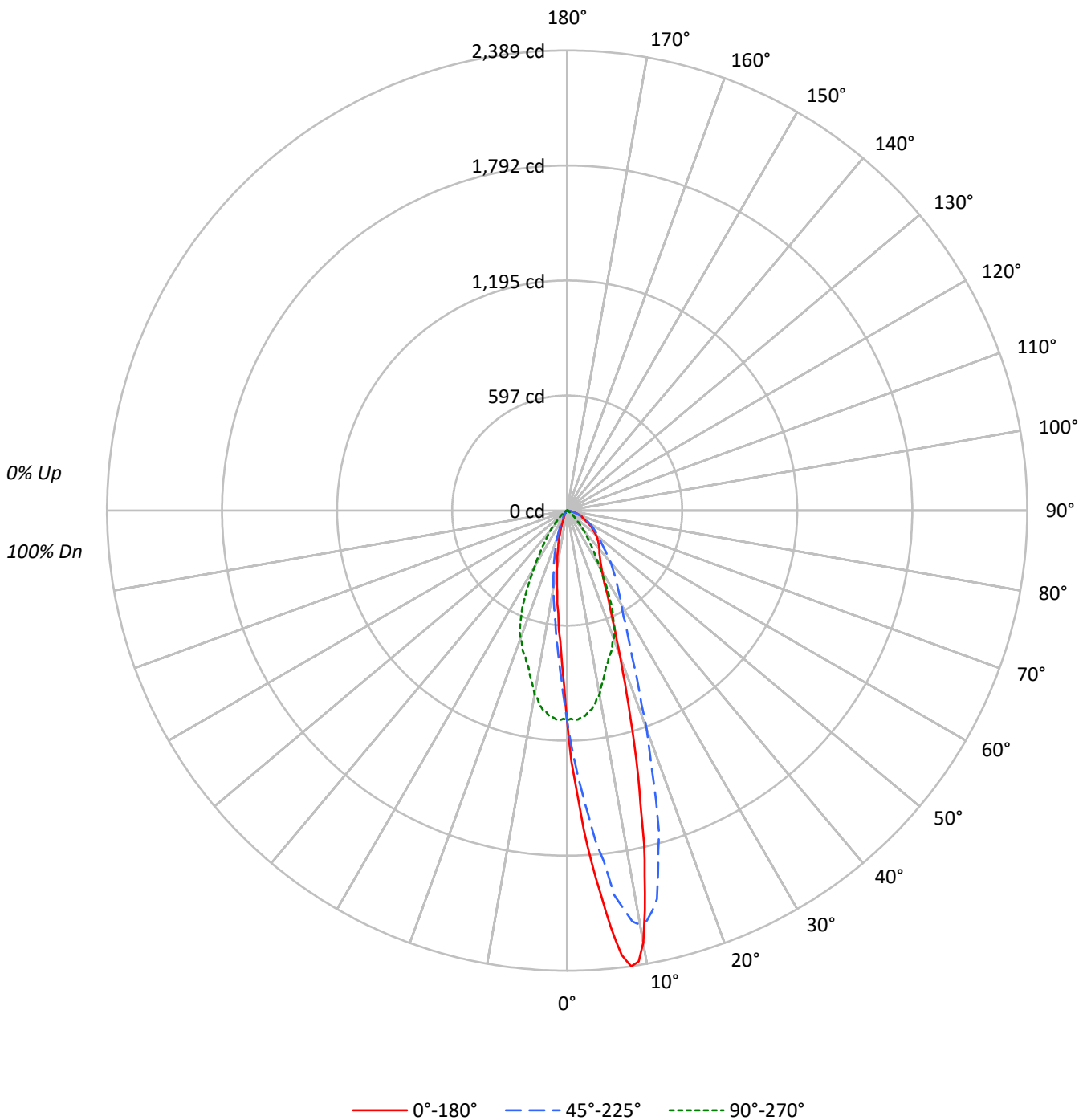
Lumens per Lamp: N/A
Luminaire Lumens: 902.0 lumens
Efficiency: N/A
Efficacy: 94.0 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 9.6
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



TEST NUMBER: P591966
CATALOG NUMBER: GRZ-05L-930-ASYMx40-X-UNV-STD-2F

Luminous Intensity Polar Plot





TEST NUMBER: P591966

CATALOG NUMBER: GRZ-05L-930-ASYMx40-X-UNV-STD-2F

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°	35156	35156	35156
5°	64743	34687	17284
10°	74646	31813	9889
15°	47729	27283	5680
20°	27498	24289	2856
25°	18100	19461	1496
30°	13476	12674	973
35°	11704	8318	698
40°	10981	5552	552
45°	10449	3411	470
50°	9756	2065	377
55°	8884	1261	315
60°	7718	781	304
65°	6777	573	214
70°	6788	444	179
75°	5240	349	112
80°	3124	167	167
85°	1371	333	0



TEST NUMBER: P591966

CATALOG NUMBER: GRZ-05L-930-ASYMx40-X-UNV-STD-2F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	114.9	12.7
10°-20°	252.2	28.0
20°-30°	192.7	21.4
30°-40°	129.4	14.3
40°-50°	93.0	10.3
50°-60°	64.7	7.2
60°-70°	37.1	4.1
70°-80°	15.3	1.7
80°-90°	2.5	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°	559.9	62.1
0°-40°	689.3	76.4
0°-60°	847.0	93.9
0°-90°	902.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	902.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1089	1089	1089	1089	1089	
5°	1997	1734	1070	652	533	205
15°	1428	1829	816	256	170	392
25°	508	768	546	78	42	238
35°	297	444	211	25	18	188
45°	229	264	75	12	10	176
55°	158	172	22	6	6	140
65°	89	99	8	5	3	92
75°	42	36	3	2	1	45
85°	4	5	1	0	0	6
90°	0	0	0	0	0	



TEST NUMBER: P591966

CATALOG NUMBER: GRZ-05L-930-ASYMx40-X-UNV-STD-2F

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1088.7	1088.7	1088.7	1088.7	1088.7	1088.7	1088.7	1088.7	1088.7	1088.7	1088.7
1°	1301.6	1254.0	1269.0	1254.0	1231.6	1215.7	1189.6	1163.4	1127.0	1090.6	1081.3
2°	1465.0	1444.5	1410.9	1390.3	1350.2	1339.9	1286.7	1236.3	1184.0	1103.7	1087.8
3°	1657.4	1608.8	1593.0	1550.0	1503.3	1460.4	1385.7	1308.2	1208.3	1116.8	1085.9
4°	1836.7	1799.3	1793.7	1737.7	1653.7	1588.3	1498.7	1374.5	1253.1	1128.0	1074.7
5°	1997.3	1995.4	1943.1	1921.6	1822.7	1734.0	1606.0	1452.9	1290.4	1143.8	1070.1
6°	2176.6	2162.5	2153.2	2093.4	1976.7	1833.9	1718.1	1522.0	1351.1	1149.4	1049.5
7°	2325.0	2318.5	2300.7	2243.8	2133.6	2012.2	1818.0	1564.0	1352.1	1129.8	1040.2
8°	2389.4	2371.7	2392.2	2340.0	2257.8	2084.1	1876.8	1636.8	1377.3	1132.6	1019.6
9°	2370.8	2349.3	2404.4	2380.1	2313.8	2159.7	1926.3	1649.0	1380.1	1112.1	987.9
10°	2276.5	2298.9	2340.9	2377.3	2325.0	2183.1	1943.1	1666.7	1363.3	1091.5	970.2
11°	2113.1	2128.9	2208.3	2301.7	2280.2	2169.1	1971.1	1658.3	1339.9	1062.6	930.0
12°	1937.5	1996.3	2043.0	2159.7	2206.4	2124.3	1921.6	1619.1	1318.4	1028.0	899.2
13°	1776.0	1792.8	1868.4	1998.2	2090.6	2070.1	1876.8	1592.0	1288.6	1001.9	867.4
14°	1572.4	1591.1	1707.8	1835.7	1928.2	1948.7	1796.5	1550.9	1260.6	972.0	832.9
15°	1427.7	1425.8	1535.1	1649.0	1802.1	1829.2	1713.4	1495.9	1241.9	955.2	816.1
16°	1263.4	1274.6	1358.6	1494.0	1649.9	1727.4	1644.3	1438.9	1213.9	935.6	787.1
17°	1127.0	1145.7	1226.0	1348.3	1496.8	1579.0	1501.5	1379.1	1175.6	916.9	773.1
18°	1000.0	1011.2	1085.9	1191.5	1341.8	1429.6	1416.5	1305.4	1147.6	899.2	753.5
19°	892.7	899.2	950.5	1071.9	1221.3	1308.2	1300.7	1229.7	1123.3	875.8	722.7
20°	800.2	811.4	854.4	951.5	1084.1	1207.3	1197.1	1159.7	1085.0	859.0	706.8
21°	718.0	719.9	770.3	872.1	988.8	1079.4	1104.6	1091.5	1032.7	835.7	686.3
22.5°	620.0	631.2	660.2	739.5	861.8	949.6	989.8	986.0	961.8	783.4	637.7
23°	591.1	599.5	634.0	717.1	815.2	909.5	944.0	944.0	935.6	758.2	614.4
24°	543.4	542.5	570.5	647.1	759.1	829.2	888.9	890.8	877.7	722.7	582.7
25°	508.0	500.5	521.0	589.2	691.9	767.5	804.9	825.4	814.2	670.4	546.2
26°	467.8	470.6	483.7	544.4	640.5	716.2	743.3	771.3	755.4	621.9	500.5
27°	427.7	430.5	442.6	506.1	605.1	677.0	702.2	712.4	702.2	562.1	460.3
28°	402.4	404.3	413.6	465.0	568.6	623.7	654.6	665.8	634.9	519.2	415.5
29°	380.0	385.6	391.2	432.3	529.4	591.1	611.6	617.2	585.5	465.9	372.6
30°	361.4	358.6	370.7	407.1	490.2	564.9	577.1	572.4	543.4	420.2	339.9
32.5°	323.1	323.1	330.5	357.6	438.9	496.8	508.0	487.4	429.5	332.4	267.1
35°	296.9	296.9	303.5	320.3	378.2	443.5	449.1	412.7	351.1	267.1	211.0
37.5°	274.5	277.3	282.0	293.2	338.0	393.1	389.4	350.2	295.1	213.8	168.1
40°	260.5	260.5	261.4	270.8	301.6	351.1	337.1	294.1	248.4	171.8	131.7
42.5°	244.6	245.6	247.4	251.2	273.6	303.5	292.3	261.4	213.8	138.2	99.9
45°	228.8	227.8	229.7	232.5	247.4	264.2	258.6	231.6	183.9	107.4	74.7
47.5°	212.0	212.9	211.0	214.8	226.0	236.2	230.6	207.3	153.1	82.2	55.1
50°	194.2	195.2	192.4	197.0	207.3	211.0	207.3	183.9	128.9	60.7	41.1
52.5°	175.5	174.6	172.7	179.3	185.8	189.5	186.7	160.6	101.8	45.8	29.9
55°	157.8	155.9	155.0	158.7	166.2	171.8	167.1	138.2	78.4	32.7	22.4
57.5°	138.2	137.3	136.3	139.1	147.5	153.1	145.7	113.9	59.8	24.3	16.8
60°	119.5	121.4	117.7	119.5	129.8	135.4	127.0	93.4	43.9	17.7	12.1
62.5°	103.6	102.7	99.0	101.8	111.1	116.7	106.4	71.9	32.7	13.1	9.3
65°	88.7	87.8	83.1	85.0	92.4	99.0	87.8	57.0	24.3	10.3	7.5



TEST NUMBER: P591966

CATALOG NUMBER: GRZ-05L-930-ASYMx40-X-UNV-STD-2F

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	82.2	81.2	69.1	68.2	77.5	80.3	70.0	42.0	17.7	7.5	5.6
70°	71.9	71.0	60.7	54.2	60.7	63.5	54.2	30.8	12.1	5.6	4.7
72.5°	55.1	56.0	51.4	42.0	46.7	49.5	40.2	21.5	8.4	4.7	3.7
75°	42.0	41.1	39.2	32.7	35.5	36.4	28.9	14.9	6.5	2.8	2.8
77.5°	28.0	27.1	28.0	24.3	24.3	25.2	19.6	10.3	4.7	1.9	1.9
80°	16.8	17.7	18.7	17.7	15.9	15.9	12.1	6.5	2.8	1.9	0.9
82.5°	8.4	9.3	10.3	10.3	9.3	9.3	7.5	3.7	1.9	0.9	0.9
85°	3.7	3.7	4.7	4.7	3.7	4.7	2.8	1.9	0.9	0.9	0.9
87.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P591966

CATALOG NUMBER: GRZ-05L-930-ASYMx40-X-UNV-STD-2F

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1088.7	1088.7	1088.7	1088.7	1088.7	1088.7	1088.7	1088.7	1088.7	1088.7
1°	1063.5	1039.3	1039.3	1004.7	978.6	962.7	934.7	935.6	921.6	913.2
2°	1054.2	1001.9	957.1	913.2	872.1	851.6	829.2	806.8	789.9	785.3
3°	1041.1	971.1	899.2	840.4	789.0	756.3	723.6	703.1	695.6	679.8
4°	1024.3	929.1	837.6	773.1	710.6	665.8	646.1	617.2	608.8	619.1
5°	1003.8	888.9	790.9	713.4	651.8	597.6	569.6	554.6	532.2	533.2
6°	980.4	838.5	732.1	645.2	582.7	542.5	513.6	493.0	477.1	485.5
7°	950.5	793.7	680.7	594.8	535.0	492.1	468.7	439.8	422.1	422.1
8°	925.3	755.4	633.1	550.0	490.2	443.5	411.8	392.2	379.1	376.3
9°	884.3	712.4	594.8	511.7	451.0	402.4	367.0	348.3	337.1	335.2
10°	860.0	674.2	564.0	470.6	408.0	367.0	332.4	312.8	301.6	301.6
11°	820.8	635.9	518.2	437.0	374.4	326.8	298.8	282.9	269.9	267.1
12°	784.3	604.1	488.3	409.9	343.6	296.0	269.9	253.0	243.7	243.7
13°	749.8	577.1	462.2	377.2	309.1	272.7	243.7	225.0	215.7	214.8
14°	721.8	539.7	429.5	348.3	282.9	244.6	215.7	202.6	193.3	192.4
15°	697.5	514.5	409.9	316.5	255.8	216.6	191.4	180.2	170.9	169.9
16°	673.2	489.3	382.8	291.3	232.5	198.0	171.8	155.9	150.3	150.3
17°	653.6	474.3	357.6	270.8	208.2	174.6	150.3	135.4	131.7	126.1
18°	628.4	444.5	335.2	246.5	191.4	154.1	130.7	118.6	111.1	108.3
19°	604.1	418.3	313.7	221.3	169.9	134.5	114.9	100.8	94.3	94.3
20°	576.1	402.4	290.4	202.6	149.4	120.5	97.1	86.8	83.1	83.1
21°	547.2	375.4	264.2	180.2	132.6	102.7	86.8	75.6	71.0	69.1
22.5°	506.1	333.3	233.4	154.1	107.4	84.0	70.0	61.6	58.8	57.9
23°	485.5	318.4	216.6	145.7	100.8	77.5	65.4	57.0	54.2	53.2
24°	453.8	295.1	196.1	127.0	86.8	68.2	56.0	50.4	48.6	47.6
25°	420.2	270.8	175.5	113.0	78.4	59.8	50.4	44.8	43.0	42.0
26°	385.6	243.7	154.1	98.0	69.1	52.3	44.8	40.2	39.2	38.3
27°	350.2	220.4	136.3	86.8	60.7	47.6	40.2	36.4	34.5	35.5
28°	316.5	198.0	118.6	76.6	52.3	42.0	36.4	32.7	31.7	30.8
29°	293.2	176.5	106.4	66.3	46.7	37.3	32.7	29.9	28.9	28.9
30°	267.1	158.7	94.3	59.8	42.0	33.6	29.9	27.1	27.1	26.1
32.5°	211.0	120.5	69.1	44.8	32.7	26.1	23.3	22.4	21.5	21.5
35°	164.3	89.6	51.4	33.6	25.2	21.5	18.7	18.7	18.7	17.7
37.5°	126.1	66.3	39.2	26.1	20.5	17.7	15.9	15.9	14.9	14.9
40°	96.2	49.5	28.9	20.5	16.8	14.9	13.1	13.1	13.1	13.1
42.5°	71.9	37.3	23.3	16.8	14.0	12.1	11.2	11.2	11.2	11.2
45°	53.2	28.0	17.7	14.0	12.1	11.2	10.3	9.3	10.3	10.3
47.5°	39.2	21.5	14.0	11.2	10.3	9.3	9.3	8.4	8.4	8.4
50°	28.9	16.8	12.1	10.3	9.3	8.4	7.5	7.5	7.5	7.5
52.5°	21.5	13.1	10.3	8.4	7.5	7.5	6.5	6.5	6.5	6.5
55°	15.9	10.3	8.4	7.5	6.5	6.5	5.6	5.6	5.6	5.6
57.5°	12.1	8.4	7.5	6.5	6.5	5.6	5.6	4.7	4.7	4.7
60°	9.3	7.5	5.6	5.6	5.6	5.6	4.7	4.7	4.7	4.7
62.5°	7.5	5.6	4.7	4.7	4.7	4.7	3.7	3.7	3.7	3.7
65°	5.6	4.7	4.7	4.7	4.7	3.7	3.7	2.8	2.8	2.8



TEST NUMBER: P591966

CATALOG NUMBER: GRZ-05L-930-ASYMx40-X-UNV-STD-2F

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	4.7	3.7	3.7	3.7	3.7	3.7	2.8	2.8	2.8	2.8
70°	3.7	2.8	2.8	2.8	2.8	2.8	2.8	1.9	1.9	1.9
72.5°	2.8	2.8	2.8	2.8	2.8	1.9	1.9	1.9	1.9	1.9
75°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	0.9	0.9	0.9
77.5°	1.9	0.9	0.9	0.9	1.9	0.9	0.9	0.9	0.9	0.9
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
82.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0
85°	0.9	0.9	0.9	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)