

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: P591950

Luminaire Tested: **GRZ-05L-927-ASYMx40-X-UNV-STD-2F**

Issue Date: 2/2/2022

**Test Information**

Test Method: LM-79-2019  
Report Number: P591950  
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-927-ASYMx40-X-UNV-STD-2F  
Description: iO LED GRAZER WITH ASYMx40 OPTIC  
500 LUMENS PER FOOT, 2 FOOT FIXTURE  
SUMULATED RESULTS  
Light Source: 2700K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

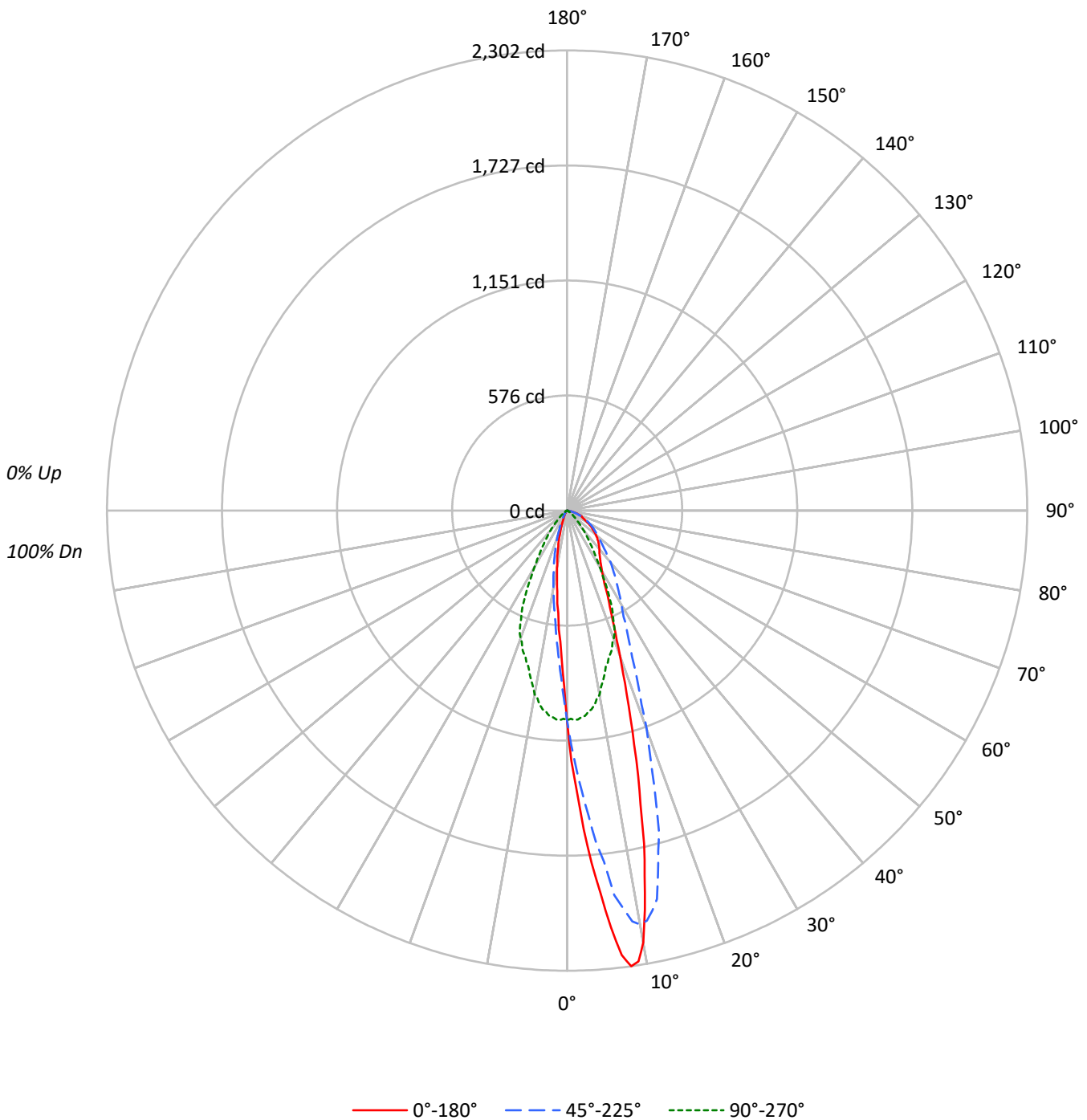
Lumens per Lamp: N/A  
Luminaire Lumens: 869.0 lumens  
Efficiency: N/A  
Efficacy: 90.5 lumens/watt  
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71  
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')  
CIE Type: Direct

Input Watts (W): 9.6  
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	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°	33871	33871	33871
5°	62373	33417	16652
10°	71915	30649	9529
15°	45984	26283	5473
20°	26491	23402	2753
25°	17437	18752	1443
30°	12980	12208	940
35°	11278	8014	674
40°	10581	5345	531
45°	10065	3288	452
50°	9399	1989	362
55°	8557	1216	304
60°	7434	756	291
65°	6533	550	206
70°	6543	425	170
75°	5053	337	112
80°	3013	167	167
85°	1334	333	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	110.7	12.7
10°-20°	243.0	28.0
20°-30°	185.7	21.4
30°-40°	124.7	14.3
40°-50°	89.6	10.3
50°-60°	62.3	7.2
60°-70°	35.8	4.1
70°-80°	14.8	1.7
80°-90°	2.4	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°	539.4	62.1
0°-40°	664.1	76.4
0°-60°	816.1	93.9
0°-90°	869.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	869.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1049	1049	1049	1049	1049	
5°	1924	1670	1031	628	514	198
15°	1376	1762	786	246	164	378
25°	489	740	526	76	40	229
35°	286	427	203	24	17	181
45°	220	255	72	12	10	170
55°	152	166	22	6	5	135
65°	86	95	7	4	3	88
75°	40	35	3	2	1	43
85°	4	4	1	0	0	6
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°	1048.9	1048.9	1048.9	1048.9	1048.9	1048.9	1048.9	1048.9	1048.9	1048.9	1048.9
1°	1254.0	1208.1	1222.5	1208.1	1186.5	1171.3	1146.1	1120.9	1085.8	1050.7	1041.7
2°	1411.4	1391.7	1359.3	1339.5	1300.8	1290.9	1239.6	1191.0	1140.7	1063.3	1048.0
3°	1596.8	1550.0	1534.7	1493.3	1448.3	1406.9	1335.0	1260.3	1164.1	1075.9	1046.2
4°	1769.5	1733.5	1728.1	1674.1	1593.2	1530.2	1443.8	1324.2	1207.2	1086.7	1035.4
5°	1924.2	1922.4	1872.0	1851.3	1756.0	1670.5	1547.3	1399.7	1243.2	1102.0	1030.9
6°	2096.9	2083.4	2074.4	2016.9	1904.4	1766.8	1655.2	1466.3	1301.7	1107.4	1011.1
7°	2240.0	2233.7	2216.6	2161.7	2055.5	1938.6	1751.5	1506.8	1302.6	1088.5	1002.1
8°	2302.0	2284.9	2304.7	2254.3	2175.2	2007.9	1808.2	1577.0	1326.9	1091.2	982.3
9°	2284.0	2263.3	2316.4	2293.0	2229.2	2080.7	1855.8	1588.7	1329.6	1071.4	951.8
10°	2193.2	2214.8	2255.2	2290.3	2240.0	2103.2	1872.0	1605.8	1313.4	1051.6	934.7
11°	2035.8	2051.0	2127.5	2217.5	2196.8	2089.7	1899.0	1597.7	1290.9	1023.7	896.0
12°	1866.6	1923.3	1968.3	2080.7	2125.7	2046.5	1851.3	1559.9	1270.2	990.4	866.3
13°	1711.0	1727.2	1800.1	1925.1	2014.2	1994.4	1808.2	1533.8	1241.4	965.3	835.7
14°	1514.9	1532.9	1645.3	1768.6	1857.6	1877.4	1730.8	1494.2	1214.4	936.5	802.4
15°	1375.5	1373.7	1478.9	1588.7	1736.2	1762.3	1650.7	1441.1	1196.4	920.3	786.2
16°	1217.1	1227.9	1308.9	1439.3	1589.6	1664.2	1584.2	1386.3	1169.5	901.4	758.3
17°	1085.8	1103.8	1181.1	1299.0	1442.0	1521.2	1446.5	1328.7	1132.6	883.4	744.9
18°	963.5	974.2	1046.2	1147.9	1292.7	1377.3	1364.7	1257.6	1105.6	866.3	726.0
19°	860.0	866.3	915.8	1032.7	1176.7	1260.3	1253.1	1184.7	1082.2	843.8	696.3
20°	770.9	781.7	823.1	916.7	1044.4	1163.2	1153.3	1117.3	1045.3	827.6	681.0
21°	691.8	693.6	742.2	840.2	952.7	1039.9	1064.2	1051.6	994.9	805.1	661.2
22.5°	597.3	608.1	636.0	712.5	830.3	914.9	953.6	950.0	926.6	754.7	614.4
23°	569.4	577.5	610.8	690.9	785.3	876.2	909.5	909.5	901.4	730.5	591.9
24°	523.6	522.7	549.6	623.4	731.4	798.8	856.4	858.2	845.6	696.3	561.3
25°	489.4	482.2	502.0	567.6	666.6	739.5	775.4	795.2	784.4	645.9	526.3
26°	450.7	453.4	466.0	524.5	617.1	690.0	716.1	743.1	727.8	599.1	482.2
27°	412.0	414.7	426.4	487.6	582.9	652.2	676.5	686.4	676.5	541.5	443.5
28°	387.7	389.5	398.5	448.0	547.8	600.9	630.6	641.4	611.7	500.2	400.3
29°	366.1	371.5	376.9	416.5	510.1	569.4	589.2	594.6	564.0	448.9	358.9
30°	348.1	345.4	357.1	392.2	472.3	544.2	555.9	551.4	523.6	404.8	327.4
32.5°	311.3	311.3	318.5	344.5	422.8	478.6	489.4	469.6	413.8	320.3	257.3
35°	286.1	286.1	292.4	308.6	364.3	427.3	432.7	397.6	338.2	257.3	203.3
37.5°	264.5	267.2	271.7	282.5	325.6	378.7	375.1	337.3	284.3	206.0	161.9
40°	251.0	251.0	251.9	260.9	290.6	338.2	324.7	283.4	239.3	165.5	126.8
42.5°	235.7	236.6	238.4	242.0	263.6	292.4	281.6	251.9	206.0	133.1	96.3
45°	220.4	219.5	221.3	224.0	238.4	254.6	249.2	223.1	177.2	103.5	72.0
47.5°	204.2	205.1	203.3	206.9	217.7	227.6	222.2	199.7	147.5	79.2	53.1
50°	187.1	188.0	185.3	189.8	199.7	203.3	199.7	177.2	124.1	58.5	39.6
52.5°	169.1	168.2	166.4	172.7	179.0	182.6	179.9	154.7	98.1	44.1	28.8
55°	152.0	150.2	149.3	152.9	160.1	165.5	161.0	133.1	75.6	31.5	21.6
57.5°	133.1	132.2	131.3	134.0	142.1	147.5	140.3	109.7	57.6	23.4	16.2
60°	115.1	116.9	113.3	115.1	125.0	130.4	122.3	90.0	42.3	17.1	11.7
62.5°	99.9	99.0	95.4	98.1	107.1	112.4	102.6	69.3	31.5	12.6	9.0
65°	85.5	84.6	80.1	81.9	89.1	95.4	84.6	54.9	23.4	9.9	7.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	79.2	78.3	66.6	65.7	74.7	77.4	67.5	40.5	17.1	7.2	5.4
70°	69.3	68.4	58.5	52.2	58.5	61.2	52.2	29.7	11.7	5.4	4.5
72.5°	53.1	54.0	49.5	40.5	45.0	47.7	38.7	20.7	8.1	4.5	3.6
75°	40.5	39.6	37.8	31.5	34.2	35.1	27.9	14.4	6.3	2.7	2.7
77.5°	27.0	26.1	27.0	23.4	23.4	24.3	18.9	9.9	4.5	1.8	1.8
80°	16.2	17.1	18.0	17.1	15.3	15.3	11.7	6.3	2.7	1.8	0.9
82.5°	8.1	9.0	9.9	9.9	9.0	9.0	7.2	3.6	1.8	0.9	0.9
85°	3.6	3.6	4.5	4.5	3.6	4.5	2.7	1.8	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



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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1048.9	1048.9	1048.9	1048.9	1048.9	1048.9	1048.9	1048.9	1048.9	1048.9
1°	1024.6	1001.2	1001.2	967.9	942.8	927.5	900.5	901.4	887.9	879.8
2°	1015.6	965.3	922.1	879.8	840.2	820.4	798.8	777.2	761.0	756.5
3°	1003.0	935.6	866.3	809.6	760.1	728.7	697.2	677.4	670.2	654.9
4°	986.8	895.1	806.9	744.9	684.6	641.4	622.5	594.6	586.5	596.4
5°	967.0	856.4	761.9	687.3	627.9	575.7	548.7	534.4	512.8	513.7
6°	944.6	807.8	705.3	621.6	561.3	522.7	494.8	475.0	459.7	467.8
7°	915.8	764.6	655.8	573.0	515.5	474.1	451.6	423.7	406.6	406.6
8°	891.5	727.8	609.9	529.9	472.3	427.3	396.7	377.8	365.2	362.5
9°	851.9	686.4	573.0	493.0	434.5	387.7	353.5	335.5	324.7	322.9
10°	828.5	649.5	543.3	453.4	393.1	353.5	320.3	301.4	290.6	290.6
11°	790.7	612.6	499.3	421.0	360.7	314.9	287.9	272.6	260.0	257.3
12°	755.6	582.0	470.5	394.9	331.0	285.2	260.0	243.8	234.8	234.8
13°	722.4	555.9	445.3	363.4	297.8	262.7	234.8	216.8	207.8	206.9
14°	695.4	520.0	413.8	335.5	272.6	235.7	207.8	195.2	186.2	185.3
15°	672.0	495.7	394.9	305.0	246.5	208.7	184.4	173.6	164.6	163.7
16°	648.6	471.4	368.8	280.7	224.0	190.7	165.5	150.2	144.8	144.8
17°	629.7	457.0	344.5	260.9	200.6	168.2	144.8	130.4	126.8	121.4
18°	605.4	428.2	322.9	237.5	184.4	148.4	125.9	114.2	107.1	104.4
19°	582.0	403.0	302.3	213.2	163.7	129.5	110.6	97.2	90.9	90.9
20°	555.0	387.7	279.8	195.2	143.9	116.0	93.6	83.7	80.1	80.1
21°	527.2	361.6	254.6	173.6	127.7	99.0	83.7	72.9	68.4	66.6
22.5°	487.6	321.2	224.9	148.4	103.5	81.0	67.5	59.4	56.7	55.8
23°	467.8	306.8	208.7	140.3	97.2	74.7	63.0	54.9	52.2	51.3
24°	437.2	284.3	188.9	122.3	83.7	65.7	54.0	48.6	46.8	45.9
25°	404.8	260.9	169.1	108.8	75.6	57.6	48.6	43.2	41.4	40.5
26°	371.5	234.8	148.4	94.5	66.6	50.4	43.2	38.7	37.8	36.9
27°	337.3	212.3	131.3	83.7	58.5	45.9	38.7	35.1	33.3	34.2
28°	305.0	190.7	114.2	73.8	50.4	40.5	35.1	31.5	30.6	29.7
29°	282.5	170.0	102.6	63.9	45.0	36.0	31.5	28.8	27.9	27.9
30°	257.3	152.9	90.9	57.6	40.5	32.4	28.8	26.1	26.1	25.2
32.5°	203.3	116.0	66.6	43.2	31.5	25.2	22.5	21.6	20.7	20.7
35°	158.3	86.4	49.5	32.4	24.3	20.7	18.0	18.0	18.0	17.1
37.5°	121.4	63.9	37.8	25.2	19.8	17.1	15.3	15.3	14.4	14.4
40°	92.7	47.7	27.9	19.8	16.2	14.4	12.6	12.6	12.6	12.6
42.5°	69.3	36.0	22.5	16.2	13.5	11.7	10.8	10.8	10.8	10.8
45°	51.3	27.0	17.1	13.5	11.7	10.8	9.9	9.0	9.9	9.9
47.5°	37.8	20.7	13.5	10.8	9.9	9.0	9.0	8.1	8.1	8.1
50°	27.9	16.2	11.7	9.9	9.0	8.1	7.2	7.2	7.2	7.2
52.5°	20.7	12.6	9.9	8.1	7.2	7.2	6.3	6.3	6.3	6.3
55°	15.3	9.9	8.1	7.2	6.3	6.3	5.4	5.4	5.4	5.4
57.5°	11.7	8.1	7.2	6.3	6.3	5.4	5.4	4.5	4.5	4.5
60°	9.0	7.2	5.4	5.4	5.4	5.4	4.5	4.5	4.5	4.5
62.5°	7.2	5.4	4.5	4.5	4.5	4.5	3.6	3.6	3.6	3.6
65°	5.4	4.5	4.5	4.5	4.5	3.6	3.6	2.7	2.7	2.7





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	4.5	3.6	3.6	3.6	3.6	3.6	2.7	2.7	2.7	2.7
70°	3.6	2.7	2.7	2.7	2.7	2.7	2.7	1.8	1.8	1.8
72.5°	2.7	2.7	2.7	2.7	2.7	1.8	1.8	1.8	1.8	1.8
75°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	0.9	0.9	0.9
77.5°	1.8	0.9	0.9	0.9	1.8	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)