

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: P592046

Luminaire Tested: **GRZ-10L-935-ASYMx40-X-UNV-STD-2F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592046
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-935-ASYMx40-X-UNV-STD-2F
Description: iO LED GRAZER WITH ASYMx40 OPTIC
1000 LUMENS PER FOOT, 2 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

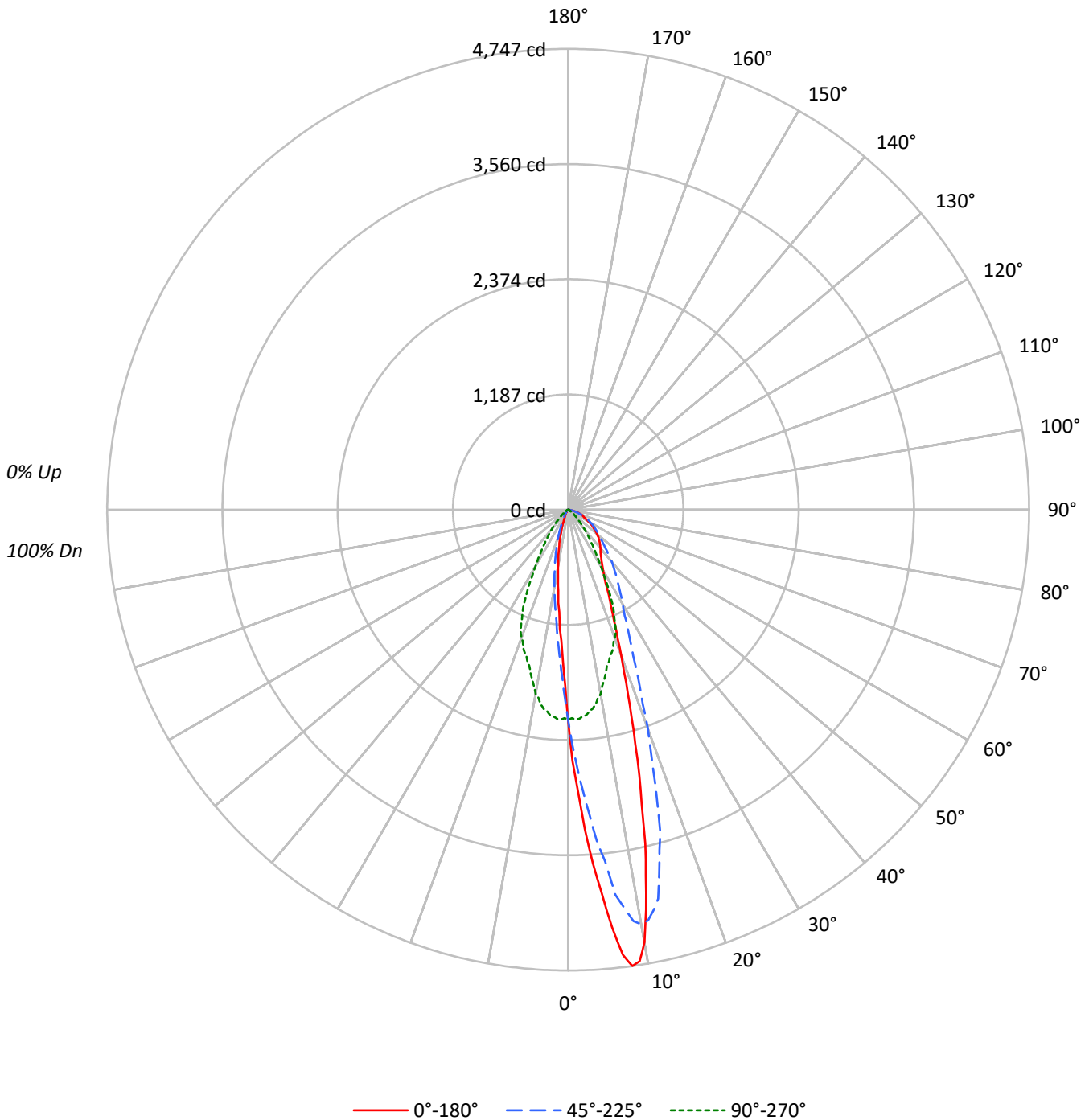
Lumens per Lamp: N/A
Luminaire Lumens: 1792.0 lumens
Efficiency: N/A
Efficacy: 93.8 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 19.1
Input Voltage (V): 120
Input Current (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°	69847	69847	69847
5°	128623	68911	34334
10°	148295	63199	19648
15°	94823	54201	11286
20°	54632	48257	5674
25°	35958	38666	2975
30°	26768	25176	1935
35°	23254	16525	1388
40°	21819	11027	1096
45°	20756	6777	932
50°	19386	4099	744
55°	17650	2505	625
60°	15332	1556	601
65°	13463	1131	428
70°	13482	878	349
75°	10418	699	237
80°	6211	353	353
85°	2742	704	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	228.4	12.7
10°-20°	501.1	28.0
20°-30°	382.8	21.4
30°-40°	257.1	14.3
40°-50°	184.9	10.3
50°-60°	128.5	7.2
60°-70°	73.7	4.1
70°-80°	30.5	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°	1112.3	62.1
0°-40°	1369.4	76.4
0°-60°	1682.8	93.9
0°-90°	1792.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1792.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2163	2163	2163	2163	2163	
5°	3968	3445	2126	1295	1059	407
15°	2836	3634	1621	508	338	779
25°	1009	1525	1085	156	84	473
35°	590	881	419	50	35	374
45°	454	525	148	24	20	350
55°	314	341	44	13	11	279
65°	176	197	15	9	6	182
75°	84	72	6	4	2	89
85°	7	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°	2163.0	2163.0	2163.0	2163.0	2163.0	2163.0	2163.0	2163.0	2163.0	2163.0	2163.0
1°	2586.0	2491.3	2521.0	2491.3	2446.8	2415.3	2363.3	2311.4	2239.1	2166.7	2148.2
2°	2910.6	2869.8	2803.0	2762.2	2682.4	2662.0	2556.3	2456.1	2352.2	2192.7	2161.1
3°	3292.7	3196.3	3164.7	3079.4	2986.6	2901.3	2752.9	2598.9	2400.4	2218.7	2157.4
4°	3648.9	3574.7	3563.6	3452.3	3285.3	3155.5	2977.4	2730.7	2489.5	2240.9	2135.2
5°	3968.0	3964.3	3860.4	3817.7	3621.1	3444.8	3190.7	2886.5	2563.7	2272.5	2125.9
6°	4324.1	4296.3	4277.8	4159.0	3927.2	3643.3	3413.3	3023.8	2684.3	2283.6	2085.1
7°	4619.1	4606.1	4570.9	4457.7	4238.8	3997.7	3611.8	3107.2	2686.1	2244.6	2066.5
8°	4747.1	4711.9	4752.7	4648.8	4485.5	4140.5	3728.7	3251.9	2736.2	2250.2	2025.7
9°	4710.0	4667.3	4776.8	4728.6	4596.8	4290.8	3827.0	3276.0	2741.8	2209.4	1962.7
10°	4522.6	4567.2	4650.6	4723.0	4619.1	4337.1	3860.4	3311.3	2708.4	2168.6	1927.4
11°	4198.0	4229.5	4387.2	4572.7	4530.1	4309.3	3916.0	3294.6	2662.0	2111.1	1847.6
12°	3849.3	3966.1	4058.9	4290.8	4383.5	4220.3	3817.7	3216.7	2619.3	2042.4	1786.4
13°	3528.3	3561.7	3712.0	3969.8	4153.5	4112.7	3728.7	3162.9	2560.0	1990.5	1723.4
14°	3123.9	3161.0	3392.9	3647.1	3830.7	3871.5	3569.1	3081.3	2504.3	1931.1	1654.7
15°	2836.4	2832.7	3049.7	3276.0	3580.3	3634.1	3404.0	2971.8	2467.2	1897.7	1621.3
16°	2509.9	2532.2	2699.1	2968.1	3277.9	3431.9	3266.8	2858.6	2411.6	1858.8	1563.8
17°	2239.1	2276.2	2435.7	2678.7	2973.7	3136.9	2982.9	2739.9	2335.5	1821.7	1536.0
18°	1986.8	2009.0	2157.4	2367.1	2665.7	2840.1	2814.1	2593.4	2279.9	1786.4	1497.0
19°	1773.4	1786.4	1888.5	2129.6	2426.4	2598.9	2584.1	2443.1	2231.6	1740.0	1435.8
20°	1589.8	1612.0	1697.4	1890.3	2153.7	2398.6	2378.2	2304.0	2155.6	1706.7	1404.3
21°	1426.5	1430.3	1530.4	1732.6	1964.5	2144.5	2194.5	2168.6	2051.7	1660.3	1363.5
22.5°	1231.8	1254.0	1311.5	1469.2	1712.2	1886.6	1966.4	1958.9	1910.7	1556.4	1267.0
23°	1174.3	1190.9	1259.6	1424.7	1619.5	1806.8	1875.5	1875.5	1858.8	1506.3	1220.6
24°	1079.6	1077.8	1133.4	1285.6	1508.2	1647.3	1766.0	1769.7	1743.8	1435.8	1157.6
25°	1009.2	994.3	1035.1	1170.5	1374.6	1524.9	1599.1	1639.9	1617.6	1331.9	1085.2
26°	929.4	935.0	960.9	1081.5	1272.6	1422.8	1476.6	1532.3	1500.7	1235.5	994.3
27°	849.6	855.2	879.3	1005.4	1202.1	1344.9	1395.0	1415.4	1395.0	1116.7	914.5
28°	799.5	803.2	821.8	923.8	1129.7	1239.2	1300.4	1322.7	1261.4	1031.4	825.5
29°	755.0	766.1	777.3	858.9	1051.8	1174.3	1215.1	1226.2	1163.1	925.7	740.2
30°	717.9	712.3	736.5	808.8	973.9	1122.3	1146.4	1137.2	1079.6	834.8	675.2
32.5°	641.9	641.9	656.7	710.5	871.9	986.9	1009.2	968.3	853.3	660.4	530.5
35°	589.9	589.9	602.9	636.3	751.3	881.2	892.3	819.9	697.5	530.5	419.2
37.5°	545.4	551.0	560.2	582.5	671.5	781.0	773.6	695.6	586.2	424.8	333.9
40°	517.6	517.6	519.4	538.0	599.2	697.5	669.7	584.3	493.4	341.3	261.6
42.5°	486.0	487.9	491.6	499.0	543.5	602.9	580.6	519.4	424.8	274.5	198.5
45°	454.5	452.6	456.3	461.9	491.6	525.0	513.9	460.1	365.4	213.3	148.4
47.5°	421.1	423.0	419.2	426.7	448.9	469.3	458.2	411.8	304.2	163.2	109.4
50°	385.9	387.7	382.1	391.4	411.8	419.2	411.8	365.4	256.0	120.6	81.6
52.5°	348.8	346.9	343.2	356.2	369.2	376.6	371.0	319.1	202.2	90.9	59.4
55°	313.5	309.8	307.9	315.4	330.2	341.3	332.1	274.5	155.8	64.9	44.5
57.5°	274.5	272.7	270.8	276.4	293.1	304.2	289.4	226.3	118.7	48.2	33.4
60°	237.4	241.2	233.7	237.4	257.9	269.0	252.3	185.5	87.2	35.2	24.1
62.5°	205.9	204.1	196.6	202.2	220.8	231.9	211.5	142.8	64.9	26.0	18.6
65°	176.2	174.4	165.1	168.8	183.7	196.6	174.4	113.2	48.2	20.4	14.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	163.2	161.4	137.3	135.4	154.0	159.5	139.1	83.5	35.2	14.8	11.1
70°	142.8	141.0	120.6	107.6	120.6	126.1	107.6	61.2	24.1	11.1	9.3
72.5°	109.4	111.3	102.0	83.5	92.8	98.3	79.8	42.7	16.7	9.3	7.4
75°	83.5	81.6	77.9	64.9	70.5	72.3	57.5	29.7	13.0	5.6	5.6
77.5°	55.7	53.8	55.7	48.2	48.2	50.1	39.0	20.4	9.3	3.7	3.7
80°	33.4	35.2	37.1	35.2	31.5	31.5	24.1	13.0	5.6	3.7	1.9
82.5°	16.7	18.6	20.4	20.4	18.6	18.6	14.8	7.4	3.7	1.9	1.9
85°	7.4	7.4	9.3	9.3	7.4	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°	2163.0	2163.0	2163.0	2163.0	2163.0	2163.0	2163.0	2163.0	2163.0	2163.0
1°	2112.9	2064.7	2064.7	1996.0	1944.1	1912.6	1856.9	1858.8	1830.9	1814.3
2°	2094.4	1990.5	1901.4	1814.3	1732.6	1691.8	1647.3	1602.8	1569.4	1560.1
3°	2068.4	1929.3	1786.4	1669.6	1567.5	1502.6	1437.7	1396.9	1382.0	1350.5
4°	2035.0	1845.8	1664.0	1536.0	1411.7	1322.7	1283.7	1226.2	1209.5	1229.9
5°	1994.2	1766.0	1571.2	1417.3	1294.8	1187.2	1131.6	1101.9	1057.4	1059.2
6°	1947.8	1665.8	1454.4	1281.8	1157.6	1077.8	1020.3	979.5	947.9	964.6
7°	1888.5	1576.8	1352.3	1181.7	1063.0	977.6	931.2	873.7	838.5	838.5
8°	1838.4	1500.7	1257.7	1092.6	973.9	881.2	818.1	779.1	753.2	747.6
9°	1756.7	1415.4	1181.7	1016.6	896.0	799.5	729.0	691.9	669.7	666.0
10°	1708.5	1339.4	1120.5	935.0	810.7	729.0	660.4	621.4	599.2	599.2
11°	1630.6	1263.3	1029.6	868.2	743.9	649.3	593.6	562.1	536.1	530.5
12°	1558.3	1200.2	970.2	814.4	682.7	588.1	536.1	502.7	484.2	484.2
13°	1489.6	1146.4	918.3	749.4	614.0	541.7	484.2	447.1	428.5	426.7
14°	1434.0	1072.2	853.3	691.9	562.1	486.0	428.5	402.5	384.0	382.1
15°	1385.7	1022.1	814.4	628.9	508.3	430.4	380.3	358.0	339.5	337.6
16°	1337.5	972.1	760.6	578.8	461.9	393.3	341.3	309.8	298.7	298.7
17°	1298.5	942.4	710.5	538.0	413.7	346.9	298.7	269.0	261.6	250.4
18°	1248.5	883.0	666.0	489.7	380.3	306.1	259.7	235.6	220.8	215.2
19°	1200.2	831.1	623.3	439.6	337.6	267.1	228.2	200.3	187.4	187.4
20°	1144.6	799.5	576.9	402.5	296.8	239.3	192.9	172.5	165.1	165.1
21°	1087.1	745.7	525.0	358.0	263.4	204.1	172.5	150.3	141.0	137.3
22.5°	1005.4	662.3	463.8	306.1	213.3	167.0	139.1	122.4	116.9	115.0
23°	964.6	632.6	430.4	289.4	200.3	154.0	129.9	113.2	107.6	105.7
24°	901.6	586.2	389.6	252.3	172.5	135.4	111.3	100.2	96.5	94.6
25°	834.8	538.0	348.8	224.5	155.8	118.7	100.2	89.0	85.3	83.5
26°	766.1	484.2	306.1	194.8	137.3	103.9	89.0	79.8	77.9	76.1
27°	695.6	437.8	270.8	172.5	120.6	94.6	79.8	72.3	68.6	70.5
28°	628.9	393.3	235.6	152.1	103.9	83.5	72.3	64.9	63.1	61.2
29°	582.5	350.6	211.5	131.7	92.8	74.2	64.9	59.4	57.5	57.5
30°	530.5	315.4	187.4	118.7	83.5	66.8	59.4	53.8	53.8	51.9
32.5°	419.2	239.3	137.3	89.0	64.9	51.9	46.4	44.5	42.7	42.7
35°	326.5	178.1	102.0	66.8	50.1	42.7	37.1	37.1	37.1	35.2
37.5°	250.4	131.7	77.9	51.9	40.8	35.2	31.5	31.5	29.7	29.7
40°	191.1	98.3	57.5	40.8	33.4	29.7	26.0	26.0	26.0	26.0
42.5°	142.8	74.2	46.4	33.4	27.8	24.1	22.3	22.3	22.3	22.3
45°	105.7	55.7	35.2	27.8	24.1	22.3	20.4	18.6	20.4	20.4
47.5°	77.9	42.7	27.8	22.3	20.4	18.6	18.6	16.7	16.7	16.7
50°	57.5	33.4	24.1	20.4	18.6	16.7	14.8	14.8	14.8	14.8
52.5°	42.7	26.0	20.4	16.7	14.8	14.8	13.0	13.0	13.0	13.0
55°	31.5	20.4	16.7	14.8	13.0	13.0	11.1	11.1	11.1	11.1
57.5°	24.1	16.7	14.8	13.0	13.0	11.1	11.1	9.3	9.3	9.3
60°	18.6	14.8	11.1	11.1	11.1	11.1	9.3	9.3	9.3	9.3
62.5°	14.8	11.1	9.3	9.3	9.3	9.3	7.4	7.4	7.4	7.4
65°	11.1	9.3	9.3	9.3	9.3	7.4	7.4	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	7.4	7.4	7.4	7.4	7.4	5.6	5.6	5.6	5.6
70°	7.4	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)