

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: P592110

Luminaire Tested: **GRZ-15L-935-ASYMx40-X-UNV-STD-2F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592110
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-15L-935-ASYMx40-X-UNV-STD-2F
Description: iO LED GRAZER WITH ASYMx40 OPTIC
1500 LUMENS PER FOOT, 2 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

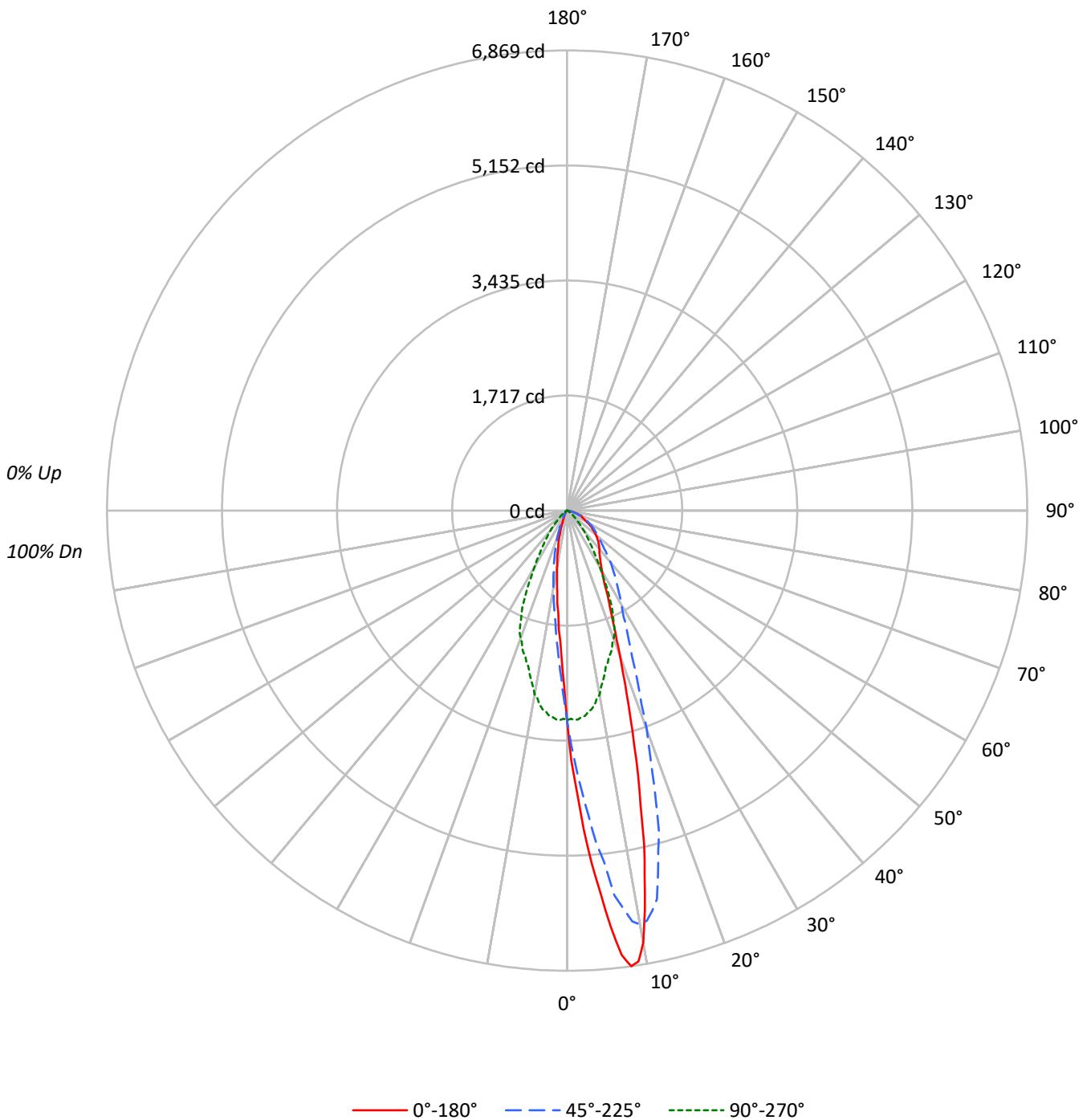
Lumens per Lamp: N/A
Luminaire Lumens: 2593.0 lumens
Efficiency: N/A
Efficacy: 89.4 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 29
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



TEST NUMBER: P592110
CATALOG NUMBER: GRZ-15L-935-ASYMx40-X-UNV-STD-2F

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°	101067	101067	101067
5°	186114	99712	49683
10°	214583	91448	28429
15°	137207	78429	16331
20°	79051	69828	8210
25°	52027	55950	4304
30°	38734	36433	2804
35°	33650	23913	2010
40°	31569	15955	1585
45°	30031	9805	1347
50°	28047	5933	1080
55°	25537	3626	906
60°	22191	2254	865
65°	19484	1643	619
70°	19515	1265	510
75°	15072	1011	337
80°	8982	502	502
85°	3964	1000	0



TEST NUMBER: P592110

CATALOG NUMBER: GRZ-15L-935-ASYMx40-X-UNV-STD-2F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	330.4	12.7
10°-20°	725.1	28.0
20°-30°	554.0	21.4
30°-40°	372.1	14.3
40°-50°	267.5	10.3
50°-60°	186.0	7.2
60°-70°	106.7	4.1
70°-80°	44.1	1.7
80°-90°	7.2	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°	1609.5	62.1
0°-40°	1981.6	76.4
0°-60°	2435.1	93.9
0°-90°	2593.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2593.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3130	3130	3130	3130	3130	
5°	5742	4985	3076	1874	1533	589
15°	4104	5258	2346	736	488	1127
25°	1460	2206	1570	226	121	684
35°	854	1275	607	72	51	541
45°	658	760	215	35	30	506
55°	454	494	64	19	16	403
65°	255	284	22	13	8	263
75°	121	105	8	5	3	128
85°	11	13	3	0	0	17
90°	0	0	0	0	0	



TEST NUMBER: P592110

CATALOG NUMBER: GRZ-15L-935-ASYMx40-X-UNV-STD-2F

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	3129.8	3129.8	3129.8	3129.8	3129.8	3129.8	3129.8	3129.8	3129.8	3129.8	3129.8
1°	3741.8	3604.9	3647.9	3604.9	3540.5	3494.9	3419.7	3344.6	3239.9	3135.2	3108.4
2°	4211.6	4152.5	4055.9	3996.8	3881.4	3851.9	3698.9	3553.9	3403.6	3172.8	3127.2
3°	4764.5	4625.0	4579.3	4455.9	4321.6	4198.2	3983.4	3760.6	3473.4	3210.4	3121.8
4°	5279.9	5172.5	5156.4	4995.4	4753.8	4565.9	4308.2	3951.2	3602.3	3242.6	3089.6
5°	5741.6	5736.2	5585.9	5524.2	5239.7	4984.7	4616.9	4176.7	3709.6	3288.2	3076.1
6°	6257.0	6216.7	6189.9	6018.1	5682.6	5271.9	4939.0	4375.3	3884.1	3304.3	3017.1
7°	6683.8	6665.0	6614.0	6450.3	6133.5	5784.6	5226.2	4496.1	3886.8	3247.9	2990.3
8°	6869.0	6818.0	6877.0	6726.7	6490.5	5991.2	5395.3	4705.5	3959.3	3256.0	2931.2
9°	6815.3	6753.6	6911.9	6842.2	6651.6	6208.7	5537.6	4740.4	3967.3	3196.9	2839.9
10°	6544.2	6608.6	6729.4	6834.1	6683.8	6275.8	5585.9	4791.4	3919.0	3137.9	2788.9
11°	6074.5	6120.1	6348.2	6616.7	6554.9	6235.5	5666.5	4767.2	3851.9	3054.7	2673.5
12°	5569.8	5738.9	5873.1	6208.7	6342.9	6106.7	5524.2	4654.5	3790.2	2955.4	2584.9
13°	5105.4	5153.8	5371.2	5744.3	6010.0	5951.0	5395.3	4576.6	3704.3	2880.2	2493.7
14°	4520.3	4574.0	4909.5	5277.2	5543.0	5602.0	5164.5	4458.5	3623.7	2794.3	2394.4
15°	4104.2	4098.8	4412.9	4740.4	5180.6	5258.4	4925.6	4300.2	3570.1	2746.0	2346.0
16°	3631.8	3664.0	3905.6	4294.8	4743.1	4965.9	4727.0	4136.4	3489.5	2689.6	2262.8
17°	3239.9	3293.6	3524.4	3876.1	4302.9	4539.1	4316.3	3964.6	3379.5	2635.9	2222.6
18°	2874.8	2907.0	3121.8	3425.1	3857.3	4109.6	4072.0	3752.6	3298.9	2584.9	2166.2
19°	2566.1	2584.9	2732.6	3081.5	3511.0	3760.6	3739.2	3535.2	3229.2	2517.8	2077.6
20°	2300.4	2332.6	2456.1	2735.2	3116.4	3470.7	3441.2	3333.8	3119.1	2469.5	2032.0
21°	2064.2	2069.6	2214.5	2507.1	2842.6	3103.0	3175.5	3137.9	2968.8	2402.4	1972.9
22.5°	1782.3	1814.6	1897.8	2125.9	2477.6	2729.9	2845.3	2834.6	2764.8	2252.1	1833.3
23°	1699.1	1723.3	1822.6	2061.5	2343.3	2614.5	2713.8	2713.8	2689.6	2179.6	1766.2
24°	1562.2	1559.5	1640.1	1860.2	2182.3	2383.6	2555.4	2560.8	2523.2	2077.6	1675.0
25°	1460.2	1438.8	1497.8	1693.8	1989.0	2206.5	2313.8	2372.9	2340.7	1927.3	1570.3
26°	1344.8	1352.9	1390.4	1564.9	1841.4	2058.8	2136.7	2217.2	2171.6	1787.7	1438.8
27°	1229.4	1237.4	1272.3	1454.9	1739.4	1946.1	2018.6	2048.1	2018.6	1615.9	1323.3
28°	1156.9	1162.3	1189.1	1336.8	1634.7	1793.1	1881.7	1913.9	1825.3	1492.4	1194.5
29°	1092.5	1108.6	1124.7	1242.8	1522.0	1699.1	1758.2	1774.3	1683.0	1339.4	1071.0
30°	1038.8	1030.8	1065.6	1170.3	1409.2	1624.0	1658.9	1645.4	1562.2	1207.9	977.1
32.5°	928.8	928.8	950.2	1028.1	1261.6	1428.0	1460.2	1401.2	1234.8	955.6	767.7
35°	853.6	853.6	872.4	920.7	1087.1	1275.0	1291.1	1186.4	1009.3	767.7	606.6
37.5°	789.2	797.2	810.6	842.9	971.7	1130.1	1119.3	1006.6	848.2	614.7	483.2
40°	748.9	748.9	751.6	778.4	867.0	1009.3	969.0	845.5	714.0	493.9	378.5
42.5°	703.3	706.0	711.3	722.1	786.5	872.4	840.2	751.6	614.7	397.3	287.2
45°	657.6	655.0	660.3	668.4	711.3	759.6	743.5	665.7	528.8	308.7	214.7
47.5°	609.3	612.0	606.6	617.4	649.6	679.1	663.0	595.9	440.2	236.2	158.4
50°	558.3	561.0	553.0	566.4	595.9	606.6	595.9	528.8	370.4	174.5	118.1
52.5°	504.6	502.0	496.6	515.4	534.2	544.9	536.8	461.7	292.6	131.5	85.9
55°	453.6	448.3	445.6	456.3	477.8	493.9	480.5	397.3	225.5	93.9	64.4
57.5°	397.3	394.6	391.9	400.0	424.1	440.2	418.7	327.5	171.8	69.8	48.3
60°	343.6	349.0	338.2	343.6	373.1	389.2	365.1	268.4	126.2	51.0	34.9
62.5°	298.0	295.3	284.5	292.6	319.4	335.5	306.0	206.7	93.9	37.6	26.8
65°	255.0	252.3	238.9	244.3	265.7	284.5	252.3	163.7	69.8	29.5	21.5



TEST NUMBER: P592110

CATALOG NUMBER: GRZ-15L-935-ASYMx40-X-UNV-STD-2F

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	236.2	233.5	198.6	196.0	222.8	230.8	201.3	120.8	51.0	21.5	16.1
70°	206.7	204.0	174.5	155.7	174.5	182.5	155.7	88.6	34.9	16.1	13.4
72.5°	158.4	161.1	147.6	120.8	134.2	142.3	115.4	61.7	24.2	13.4	10.7
75°	120.8	118.1	112.7	93.9	102.0	104.7	83.2	42.9	18.8	8.1	8.1
77.5°	80.5	77.8	80.5	69.8	69.8	72.5	56.4	29.5	13.4	5.4	5.4
80°	48.3	51.0	53.7	51.0	45.6	45.6	34.9	18.8	8.1	5.4	2.7
82.5°	24.2	26.8	29.5	29.5	26.8	26.8	21.5	10.7	5.4	2.7	2.7
85°	10.7	10.7	13.4	13.4	10.7	13.4	8.1	5.4	2.7	2.7	2.7
87.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
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°	3129.8	3129.8	3129.8	3129.8	3129.8	3129.8	3129.8	3129.8	3129.8	3129.8
1°	3057.4	2987.6	2987.6	2888.3	2813.1	2767.5	2686.9	2689.6	2649.4	2625.2
2°	3030.5	2880.2	2751.4	2625.2	2507.1	2448.0	2383.6	2319.2	2270.9	2257.5
3°	2992.9	2791.6	2584.9	2415.8	2268.2	2174.2	2080.3	2021.2	1999.8	1954.1
4°	2944.6	2670.8	2407.8	2222.6	2042.7	1913.9	1857.5	1774.3	1750.1	1779.7
5°	2885.6	2555.4	2273.6	2050.8	1873.6	1717.9	1637.4	1594.4	1530.0	1532.7
6°	2818.5	2410.5	2104.5	1854.8	1675.0	1559.5	1476.3	1417.3	1371.7	1395.8
7°	2732.6	2281.6	1956.8	1709.9	1538.1	1414.6	1347.5	1264.3	1213.3	1213.3
8°	2660.1	2171.6	1819.9	1581.0	1409.2	1275.0	1183.8	1127.4	1089.8	1081.8
9°	2542.0	2048.1	1709.9	1471.0	1296.5	1156.9	1054.9	1001.2	969.0	963.6
10°	2472.2	1938.0	1621.3	1352.9	1173.0	1054.9	955.6	899.2	867.0	867.0
11°	2359.5	1828.0	1489.8	1256.2	1076.4	939.5	859.0	813.3	775.7	767.7
12°	2254.8	1736.7	1403.9	1178.4	987.8	850.9	775.7	727.4	700.6	700.6
13°	2155.5	1658.9	1328.7	1084.4	888.5	783.8	700.6	646.9	620.1	617.4
14°	2074.9	1551.5	1234.8	1001.2	813.3	703.3	620.1	582.5	555.6	553.0
15°	2005.1	1479.0	1178.4	910.0	735.5	622.7	550.3	518.1	491.2	488.5
16°	1935.3	1406.5	1100.5	837.5	668.4	569.1	493.9	448.3	432.2	432.2
17°	1879.0	1363.6	1028.1	778.4	598.6	502.0	432.2	389.2	378.5	362.4
18°	1806.5	1277.7	963.6	708.6	550.3	442.9	375.8	340.9	319.4	311.4
19°	1736.7	1202.5	901.9	636.2	488.5	386.5	330.2	289.9	271.1	271.1
20°	1656.2	1156.9	834.8	582.5	429.5	346.3	279.2	249.6	238.9	238.9
21°	1573.0	1079.1	759.6	518.1	381.2	295.3	249.6	217.4	204.0	198.6
22.5°	1454.9	958.3	671.1	442.9	308.7	241.6	201.3	177.2	169.1	166.4
23°	1395.8	915.3	622.7	418.7	289.9	222.8	187.9	163.7	155.7	153.0
24°	1304.5	848.2	563.7	365.1	249.6	196.0	161.1	144.9	139.6	136.9
25°	1207.9	778.4	504.6	324.8	225.5	171.8	144.9	128.8	123.5	120.8
26°	1108.6	700.6	442.9	281.8	198.6	150.3	128.8	115.4	112.7	110.1
27°	1006.6	633.5	391.9	249.6	174.5	136.9	115.4	104.7	99.3	102.0
28°	910.0	569.1	340.9	220.1	150.3	120.8	104.7	93.9	91.3	88.6
29°	842.9	507.3	306.0	190.6	134.2	107.4	93.9	85.9	83.2	83.2
30°	767.7	456.3	271.1	171.8	120.8	96.6	85.9	77.8	77.8	75.2
32.5°	606.6	346.3	198.6	128.8	93.9	75.2	67.1	64.4	61.7	61.7
35°	472.4	257.7	147.6	96.6	72.5	61.7	53.7	53.7	53.7	51.0
37.5°	362.4	190.6	112.7	75.2	59.1	51.0	45.6	45.6	42.9	42.9
40°	276.5	142.3	83.2	59.1	48.3	42.9	37.6	37.6	37.6	37.6
42.5°	206.7	107.4	67.1	48.3	40.3	34.9	32.2	32.2	32.2	32.2
45°	153.0	80.5	51.0	40.3	34.9	32.2	29.5	26.8	29.5	29.5
47.5°	112.7	61.7	40.3	32.2	29.5	26.8	26.8	24.2	24.2	24.2
50°	83.2	48.3	34.9	29.5	26.8	24.2	21.5	21.5	21.5	21.5
52.5°	61.7	37.6	29.5	24.2	21.5	21.5	18.8	18.8	18.8	18.8
55°	45.6	29.5	24.2	21.5	18.8	18.8	16.1	16.1	16.1	16.1
57.5°	34.9	24.2	21.5	18.8	18.8	16.1	16.1	13.4	13.4	13.4
60°	26.8	21.5	16.1	16.1	16.1	16.1	13.4	13.4	13.4	13.4
62.5°	21.5	16.1	13.4	13.4	13.4	13.4	10.7	10.7	10.7	10.7
65°	16.1	13.4	13.4	13.4	13.4	10.7	10.7	8.1	8.1	8.1



TEST NUMBER: P592110

CATALOG NUMBER: GRZ-15L-935-ASYMx40-X-UNV-STD-2F

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	13.4	10.7	10.7	10.7	10.7	10.7	8.1	8.1	8.1	8.1
70°	10.7	8.1	8.1	8.1	8.1	8.1	8.1	5.4	5.4	5.4
72.5°	8.1	8.1	8.1	8.1	8.1	5.4	5.4	5.4	5.4	5.4
75°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	2.7	2.7	2.7
77.5°	5.4	2.7	2.7	2.7	5.4	2.7	2.7	2.7	2.7	2.7
80°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
82.5°	2.7	2.7	2.7	2.7	2.7	2.7	0.0	0.0	0.0	0.0
85°	2.7	2.7	2.7	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)