

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: P592094

Luminaire Tested: **GRZ-15L-930-ASYMx40-X-UNV-STD-2F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592094
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-930-ASYMx40-X-UNV-STD-2F
Description: iO LED GRAZER WITH ASYMx40 OPTIC
1500 LUMENS PER FOOT, 2 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

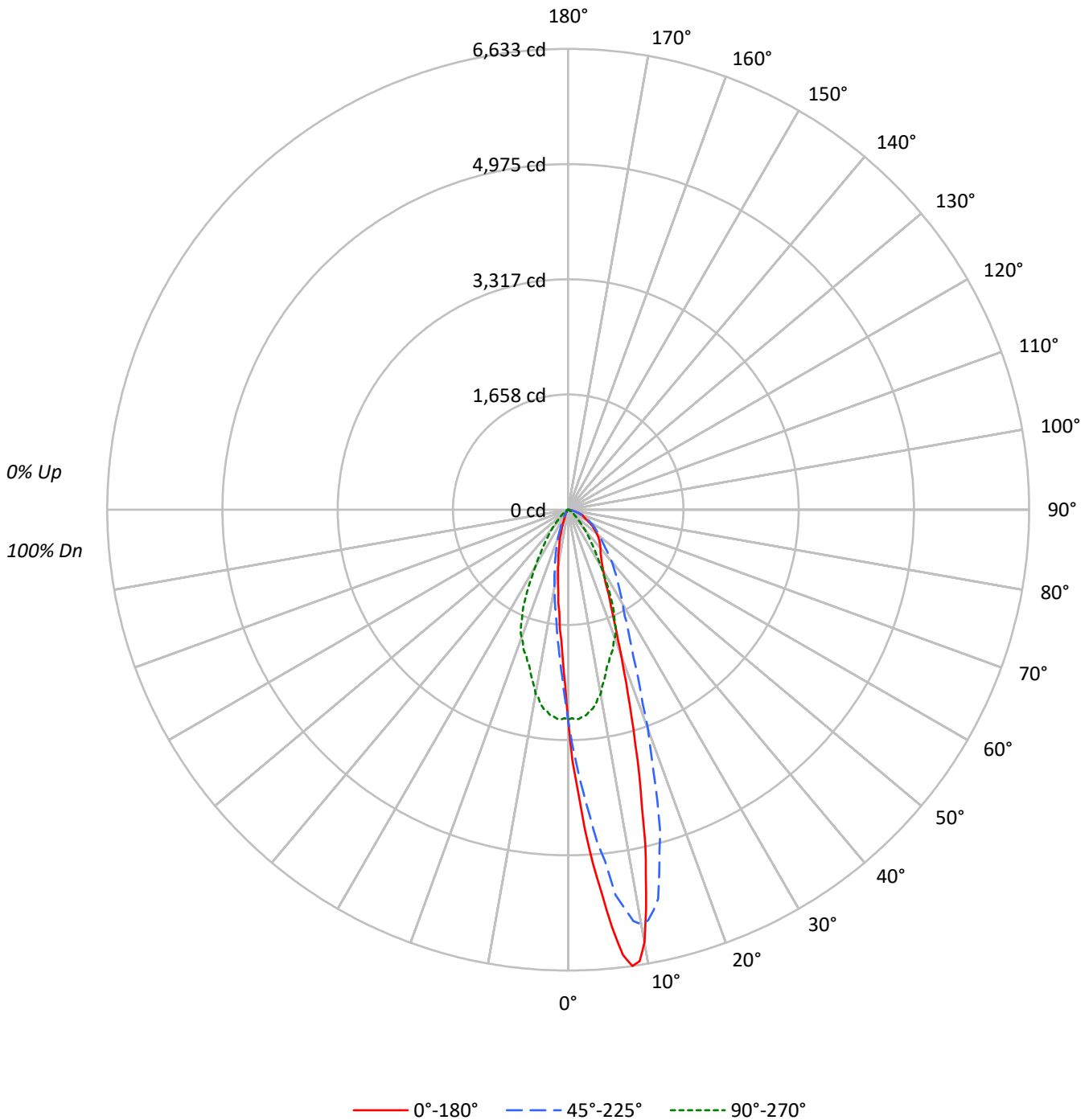
Lumens per Lamp: N/A
Luminaire Lumens: 2504.0 lumens
Efficiency: N/A
Efficacy: 86.3 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 29
Input Voltage (V): 120
Input Current (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: P592094
CATALOG NUMBER: GRZ-15L-930-ASYMx40-X-UNV-STD-2F

Luminous Intensity Polar Plot





TEST NUMBER: P592094

CATALOG NUMBER: GRZ-15L-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°	97598	97598	97598
5°	179725	96292	47977
10°	207219	88310	27455
15°	132496	75737	15773
20°	76336	67429	7928
25°	50242	54029	4154
30°	37403	35180	2707
35°	32495	23093	1943
40°	30486	15407	1530
45°	29003	9471	1302
50°	27088	5732	1040
55°	24665	3502	878
60°	21429	2176	840
65°	18819	1582	596
70°	18845	1227	491
75°	14548	973	324
80°	8684	483	483
85°	3853	963	0



TEST NUMBER: P592094

CATALOG NUMBER: GRZ-15L-930-ASYMx40-X-UNV-STD-2F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	319.1	12.7
10°-20°	700.2	28.0
20°-30°	534.9	21.4
30°-40°	359.3	14.3
40°-50°	258.3	10.3
50°-60°	179.6	7.2
60°-70°	103.0	4.1
70°-80°	42.6	1.7
80°-90°	7.0	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°	1554.2	62.1
0°-40°	1913.6	76.4
0°-60°	2351.5	93.9
0°-90°	2504.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2504.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3022	3022	3022	3022	3022	
5°	5544	4814	2971	1809	1480	569
15°	3963	5078	2266	710	472	1088
25°	1410	2131	1516	218	117	661
35°	824	1231	586	70	49	522
45°	635	734	207	34	28	489
55°	438	477	62	18	16	389
65°	246	275	21	13	8	254
75°	117	101	8	5	3	124
85°	10	13	3	0	0	16
90°	0	0	0	0	0	



TEST NUMBER: P592094

CATALOG NUMBER: GRZ-15L-930-ASYMx40-X-UNV-STD-2F

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	3022.4	3022.4	3022.4	3022.4	3022.4	3022.4	3022.4	3022.4	3022.4	3022.4	3022.4
1°	3613.4	3481.2	3522.7	3481.2	3419.0	3374.9	3302.4	3229.8	3128.7	3027.6	3001.7
2°	4067.0	4010.0	3916.7	3859.7	3748.2	3719.7	3571.9	3432.0	3286.8	3063.9	3019.8
3°	4601.0	4466.2	4422.2	4302.9	4173.3	4054.1	3846.7	3631.6	3354.2	3100.2	3014.6
4°	5098.7	4995.0	4979.5	4823.9	4590.6	4409.2	4160.3	3815.6	3478.6	3131.3	2983.5
5°	5544.5	5539.4	5394.2	5334.6	5059.8	4813.6	4458.4	4033.3	3582.3	3175.3	2970.6
6°	6042.2	6003.3	5977.4	5811.5	5487.5	5090.9	4769.5	4225.2	3750.8	3190.9	2913.5
7°	6454.4	6436.2	6387.0	6228.9	5923.0	5586.0	5046.9	4341.8	3753.4	3136.5	2887.6
8°	6633.2	6584.0	6641.0	6495.8	6267.7	5785.6	5210.2	4544.0	3823.4	3144.2	2830.6
9°	6581.4	6521.8	6674.7	6607.3	6423.3	5995.6	5347.5	4577.7	3831.1	3087.2	2742.5
10°	6319.6	6381.8	6498.4	6599.5	6454.4	6060.4	5394.2	4626.9	3784.5	3030.2	2693.2
11°	5866.0	5910.0	6130.4	6389.6	6330.0	6021.5	5472.0	4603.6	3719.7	2949.8	2581.7
12°	5378.6	5541.9	5671.6	5995.6	6125.2	5897.1	5334.6	4494.7	3660.1	2853.9	2496.2
13°	4930.2	4976.9	5186.8	5547.1	5803.8	5746.7	5210.2	4419.6	3577.1	2781.3	2408.1
14°	4365.1	4417.0	4741.0	5096.1	5352.7	5409.7	4987.2	4305.5	3499.4	2698.4	2312.2
15°	3963.3	3958.2	4261.4	4577.7	5002.8	5078.0	4756.5	4152.6	3447.5	2651.7	2265.5
16°	3507.1	3538.2	3771.5	4147.4	4580.3	4795.4	4564.7	3994.5	3369.8	2597.3	2185.2
17°	3128.7	3180.5	3403.4	3743.0	4155.2	4383.3	4168.1	3828.6	3263.5	2545.5	2146.3
18°	2776.2	2807.3	3014.6	3307.5	3724.9	3968.5	3932.2	3623.8	3185.7	2496.2	2091.8
19°	2478.1	2496.2	2638.8	2975.8	3390.5	3631.6	3610.8	3413.8	3118.3	2431.4	2006.3
20°	2221.4	2252.5	2371.8	2641.4	3009.4	3351.6	3323.1	3219.4	3012.0	2384.7	1962.2
21°	1993.3	1998.5	2138.5	2421.0	2745.1	2996.5	3066.5	3030.2	2866.9	2319.9	1905.2
22.5°	1721.2	1752.3	1832.6	2053.0	2392.5	2636.2	2747.6	2737.3	2669.9	2174.8	1770.4
23°	1640.8	1664.1	1760.0	1990.7	2262.9	2524.7	2620.6	2620.6	2597.3	2104.8	1705.6
24°	1508.6	1506.0	1583.8	1796.3	2107.4	2301.8	2467.7	2472.9	2436.6	2006.3	1617.5
25°	1410.1	1389.4	1446.4	1635.6	1920.8	2130.7	2234.4	2291.4	2260.3	1861.1	1516.4
26°	1298.7	1306.4	1342.7	1511.2	1778.2	1988.2	2063.3	2141.1	2097.0	1726.4	1389.4
27°	1187.2	1195.0	1228.7	1404.9	1679.7	1879.3	1949.3	1977.8	1949.3	1560.5	1277.9
28°	1117.2	1122.4	1148.3	1290.9	1578.6	1731.5	1817.1	1848.2	1762.6	1441.2	1153.5
29°	1055.0	1070.5	1086.1	1200.2	1469.7	1640.8	1697.8	1713.4	1625.3	1293.5	1034.3
30°	1003.1	995.4	1029.1	1130.2	1360.9	1568.2	1601.9	1589.0	1508.6	1166.5	943.5
32.5°	896.9	896.9	917.6	992.8	1218.3	1379.0	1410.1	1353.1	1192.4	922.8	741.3
35°	824.3	824.3	842.4	889.1	1049.8	1231.3	1246.8	1145.7	974.6	741.3	585.8
37.5°	762.1	769.9	782.8	813.9	938.3	1091.3	1080.9	972.0	819.1	593.6	466.6
40°	723.2	723.2	725.8	751.7	837.3	974.6	935.8	816.5	689.5	476.9	365.5
42.5°	679.1	681.7	686.9	697.3	759.5	842.4	811.3	725.8	593.6	383.6	277.4
45°	635.1	632.5	637.7	645.4	686.9	733.6	718.0	642.8	510.6	298.1	207.4
47.5°	588.4	591.0	585.8	596.2	627.3	655.8	640.3	575.5	425.1	228.1	152.9
50°	539.2	541.8	534.0	546.9	575.5	585.8	575.5	510.6	357.7	168.5	114.1
52.5°	487.3	484.7	479.5	497.7	515.8	526.2	518.4	445.8	282.5	127.0	82.9
55°	438.1	432.9	430.3	440.7	461.4	476.9	464.0	383.6	217.7	90.7	62.2
57.5°	383.6	381.0	378.4	386.2	409.6	425.1	404.4	316.2	165.9	67.4	46.7
60°	331.8	337.0	326.6	331.8	360.3	375.9	352.5	259.2	121.8	49.3	33.7
62.5°	287.7	285.1	274.8	282.5	308.5	324.0	295.5	199.6	90.7	36.3	25.9
65°	246.3	243.7	230.7	235.9	256.6	274.8	243.7	158.1	67.4	28.5	20.7



TEST NUMBER: P592094

CATALOG NUMBER: GRZ-15L-930-ASYMx40-X-UNV-STD-2F

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	228.1	225.5	191.8	189.2	215.1	222.9	194.4	116.6	49.3	20.7	15.6
70°	199.6	197.0	168.5	150.3	168.5	176.3	150.3	85.5	33.7	15.6	13.0
72.5°	152.9	155.5	142.6	116.6	129.6	137.4	111.5	59.6	23.3	13.0	10.4
75°	116.6	114.1	108.9	90.7	98.5	101.1	80.4	41.5	18.1	7.8	7.8
77.5°	77.8	75.2	77.8	67.4	67.4	70.0	54.4	28.5	13.0	5.2	5.2
80°	46.7	49.3	51.8	49.3	44.1	44.1	33.7	18.1	7.8	5.2	2.6
82.5°	23.3	25.9	28.5	28.5	25.9	25.9	20.7	10.4	5.2	2.6	2.6
85°	10.4	10.4	13.0	13.0	10.4	13.0	7.8	5.2	2.6	2.6	2.6
87.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
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: P592094

CATALOG NUMBER: GRZ-15L-930-ASYMx40-X-UNV-STD-2F

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	3022.4	3022.4	3022.4	3022.4	3022.4	3022.4	3022.4	3022.4	3022.4	3022.4
1°	2952.4	2885.0	2885.0	2789.1	2716.5	2672.5	2594.7	2597.3	2558.4	2535.1
2°	2926.5	2781.3	2656.9	2535.1	2421.0	2364.0	2301.8	2239.6	2192.9	2180.0
3°	2890.2	2695.8	2496.2	2332.9	2190.3	2099.6	2008.9	1951.9	1931.1	1887.1
4°	2843.6	2579.2	2325.1	2146.3	1972.6	1848.2	1793.7	1713.4	1690.1	1718.6
5°	2786.5	2467.7	2195.5	1980.4	1809.3	1659.0	1581.2	1539.7	1477.5	1480.1
6°	2721.7	2327.7	2032.2	1791.2	1617.5	1506.0	1425.7	1368.6	1324.6	1347.9
7°	2638.8	2203.3	1889.7	1651.2	1485.3	1366.0	1301.2	1220.9	1171.6	1171.6
8°	2568.8	2097.0	1757.5	1526.8	1360.9	1231.3	1143.1	1088.7	1052.4	1044.6
9°	2454.7	1977.8	1651.2	1420.5	1252.0	1117.2	1018.7	966.9	935.8	930.6
10°	2387.3	1871.5	1565.6	1306.4	1132.8	1018.7	922.8	868.4	837.3	837.3
11°	2278.5	1765.2	1438.6	1213.1	1039.4	907.2	829.5	785.4	749.1	741.3
12°	2177.4	1677.1	1355.7	1137.9	953.9	821.7	749.1	702.5	676.5	676.5
13°	2081.5	1601.9	1283.1	1047.2	858.0	756.9	676.5	624.7	598.8	596.2
14°	2003.7	1498.2	1192.4	966.9	785.4	679.1	598.8	562.5	536.6	534.0
15°	1936.3	1428.3	1137.9	878.7	710.2	601.4	531.4	500.3	474.4	471.8
16°	1868.9	1358.3	1062.8	808.7	645.4	549.5	476.9	432.9	417.3	417.3
17°	1814.5	1316.8	992.8	751.7	578.0	484.7	417.3	375.9	365.5	349.9
18°	1744.5	1233.8	930.6	684.3	531.4	427.7	362.9	329.2	308.5	300.7
19°	1677.1	1161.3	871.0	614.3	471.8	373.3	318.8	279.9	261.8	261.8
20°	1599.3	1117.2	806.1	562.5	414.7	334.4	269.6	241.1	230.7	230.7
21°	1519.0	1042.0	733.6	500.3	368.1	285.1	241.1	210.0	197.0	191.8
22.5°	1404.9	925.4	648.0	427.7	298.1	233.3	194.4	171.1	163.3	160.7
23°	1347.9	883.9	601.4	404.4	279.9	215.1	181.4	158.1	150.3	147.8
24°	1259.8	819.1	544.3	352.5	241.1	189.2	155.5	140.0	134.8	132.2
25°	1166.5	751.7	487.3	313.6	217.7	165.9	140.0	124.4	119.2	116.6
26°	1070.5	676.5	427.7	272.2	191.8	145.2	124.4	111.5	108.9	106.3
27°	972.0	611.7	378.4	241.1	168.5	132.2	111.5	101.1	95.9	98.5
28°	878.7	549.5	329.2	212.6	145.2	116.6	101.1	90.7	88.1	85.5
29°	813.9	489.9	295.5	184.0	129.6	103.7	90.7	82.9	80.4	80.4
30°	741.3	440.7	261.8	165.9	116.6	93.3	82.9	75.2	75.2	72.6
32.5°	585.8	334.4	191.8	124.4	90.7	72.6	64.8	62.2	59.6	59.6
35°	456.2	248.8	142.6	93.3	70.0	59.6	51.8	51.8	51.8	49.3
37.5°	349.9	184.0	108.9	72.6	57.0	49.3	44.1	44.1	41.5	41.5
40°	267.0	137.4	80.4	57.0	46.7	41.5	36.3	36.3	36.3	36.3
42.5°	199.6	103.7	64.8	46.7	38.9	33.7	31.1	31.1	31.1	31.1
45°	147.8	77.8	49.3	38.9	33.7	31.1	28.5	25.9	28.5	28.5
47.5°	108.9	59.6	38.9	31.1	28.5	25.9	25.9	23.3	23.3	23.3
50°	80.4	46.7	33.7	28.5	25.9	23.3	20.7	20.7	20.7	20.7
52.5°	59.6	36.3	28.5	23.3	20.7	20.7	18.1	18.1	18.1	18.1
55°	44.1	28.5	23.3	20.7	18.1	18.1	15.6	15.6	15.6	15.6
57.5°	33.7	23.3	20.7	18.1	18.1	15.6	15.6	13.0	13.0	13.0
60°	25.9	20.7	15.6	15.6	15.6	15.6	13.0	13.0	13.0	13.0
62.5°	20.7	15.6	13.0	13.0	13.0	13.0	10.4	10.4	10.4	10.4
65°	15.6	13.0	13.0	13.0	13.0	10.4	10.4	7.8	7.8	7.8



TEST NUMBER: P592094

CATALOG NUMBER: GRZ-15L-930-ASYMx40-X-UNV-STD-2F

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	13.0	10.4	10.4	10.4	10.4	10.4	7.8	7.8	7.8	7.8
70°	10.4	7.8	7.8	7.8	7.8	7.8	7.8	5.2	5.2	5.2
72.5°	7.8	7.8	7.8	7.8	7.8	5.2	5.2	5.2	5.2	5.2
75°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	2.6	2.6	2.6
77.5°	5.2	2.6	2.6	2.6	5.2	2.6	2.6	2.6	2.6	2.6
80°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
82.5°	2.6	2.6	2.6	2.6	2.6	2.6	0.0	0.0	0.0	0.0
85°	2.6	2.6	2.6	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)