

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: P592063

Luminaire Tested: **GRZ-10L-940-ASYMx40-X-UNV-STD-4F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592063
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-940-ASYMx40-X-UNV-STD-4F
Description: iO LED GRAZER WITH ASYMx40 OPTIC
1000 LUMENS PER FOOT, 4 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

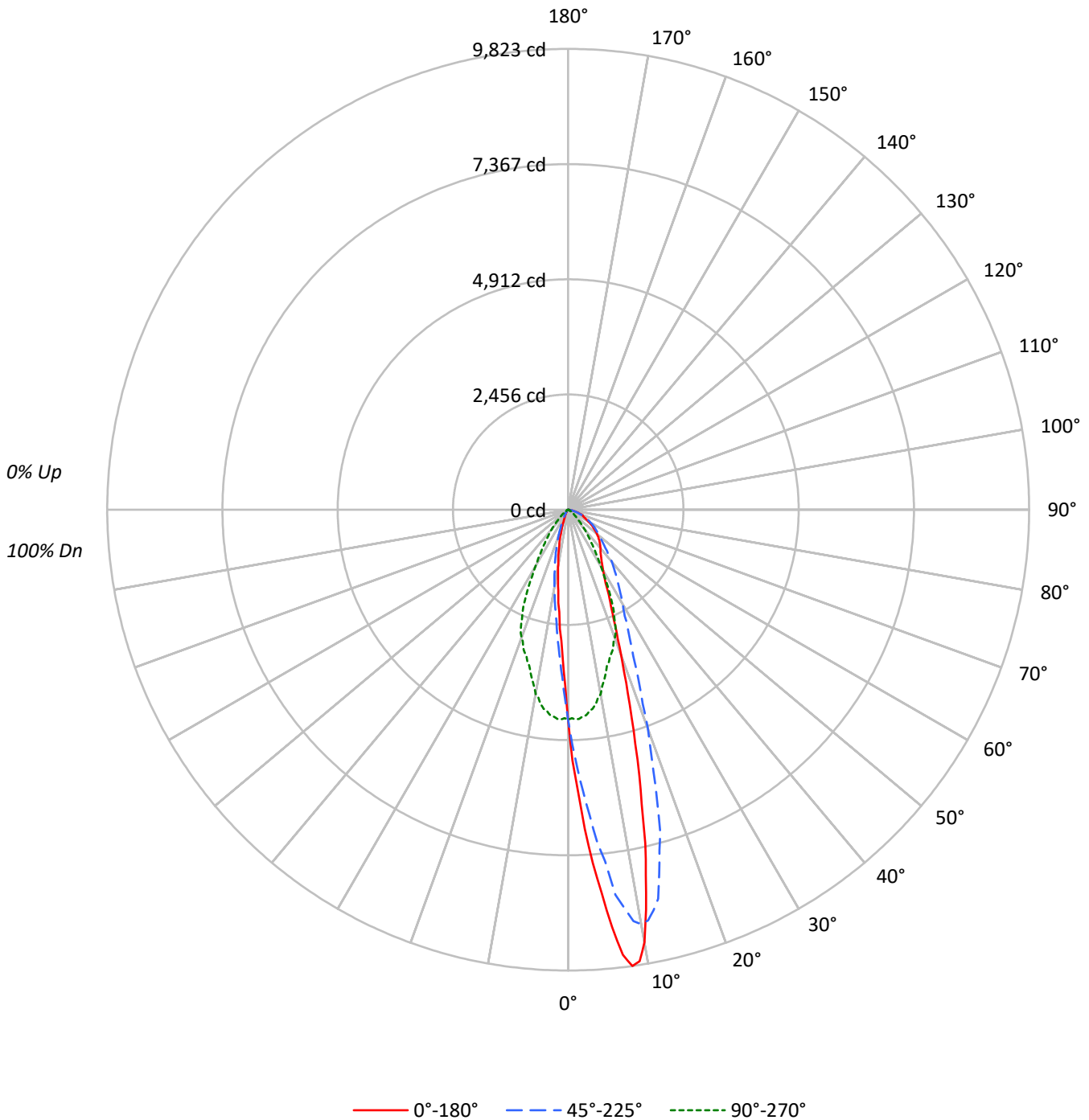
Lumens per Lamp: N/A
Luminaire Lumens: 3708.0 lumens
Efficiency: N/A
Efficacy: 97.6 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 38
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°	72264	72264	72264
5°	133072	71295	35524
10°	153427	65386	20326
15°	98103	56077	11677
20°	56522	49926	5869
25°	37199	40004	3077
30°	27695	26049	2004
35°	24059	17099	1437
40°	22571	11407	1132
45°	21473	7012	964
50°	20055	4243	771
55°	18261	2593	647
60°	15865	1611	620
65°	13933	1173	439
70°	13954	906	363
75°	10773	717	237
80°	6425	353	353
85°	2853	704	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	472.5	12.7
10°-20°	1036.9	28.0
20°-30°	792.2	21.4
30°-40°	532.1	14.3
40°-50°	382.5	10.3
50°-60°	266.0	7.2
60°-70°	152.5	4.1
70°-80°	63.0	1.7
80°-90°	10.3	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°	2301.6	62.1
0°-40°	2833.6	76.4
0°-60°	3482.1	93.9
0°-90°	3708.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3708.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	4476	4476	4476	4476	4476	
5°	8210	7128	4399	2679	2192	843
15°	5869	7520	3355	1052	699	1611
25°	2088	3155	2246	322	173	978
35°	1221	1823	868	104	73	773
45°	940	1086	307	50	42	724
55°	649	706	92	27	23	577
65°	365	407	31	19	12	377
75°	173	150	12	8	4	183
85°	15	19	4	0	0	24
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°	4475.7	4475.7	4475.7	4475.7	4475.7	4475.7	4475.7	4475.7	4475.7	4475.7	4475.7
1°	5350.9	5155.1	5216.5	5155.1	5063.0	4997.7	4890.2	4782.8	4633.1	4483.4	4445.0
2°	6022.6	5938.1	5800.0	5715.5	5550.5	5508.2	5289.4	5082.2	4867.2	4537.1	4471.8
3°	6813.3	6613.7	6548.5	6371.9	6180.0	6003.4	5696.3	5377.7	4967.0	4590.8	4464.2
4°	7550.3	7396.8	7373.7	7143.4	6798.0	6529.3	6160.8	5650.3	5151.2	4636.9	4418.1
5°	8210.5	8202.8	7987.9	7899.6	7492.7	7128.1	6602.2	5972.7	5304.8	4702.1	4398.9
6°	8947.5	8889.9	8851.6	8605.9	8126.1	7538.8	7062.8	6256.7	5554.3	4725.2	4314.5
7°	9557.8	9531.0	9458.0	9223.9	8770.9	8271.9	7473.5	6429.5	5558.1	4644.6	4276.1
8°	9822.7	9749.8	9834.2	9619.2	9281.5	8567.5	7715.4	6728.9	5661.8	4656.1	4191.6
9°	9745.9	9657.6	9884.1	9784.3	9511.8	8878.4	7918.8	6778.8	5673.3	4571.6	4061.1
10°	9358.2	9450.4	9623.1	9772.8	9557.8	8974.4	7987.9	6851.7	5604.2	4487.2	3988.2
11°	8686.5	8751.7	9078.0	9461.9	9373.6	8916.8	8103.0	6817.2	5508.2	4368.2	3823.1
12°	7964.9	8206.7	8398.6	8878.4	9070.3	8732.6	7899.6	6655.9	5419.9	4226.2	3696.5
13°	7300.8	7369.9	7680.8	8214.4	8594.4	8509.9	7715.4	6544.6	5297.1	4118.7	3566.0
14°	6464.0	6540.8	7020.6	7546.5	7926.5	8010.9	7385.2	6375.7	5182.0	3995.9	3423.9
15°	5869.0	5861.4	6310.5	6778.8	7408.3	7519.6	7043.6	6149.3	5105.2	3926.8	3354.8
16°	5193.5	5239.5	5585.0	6141.6	6782.6	7101.2	6759.6	5915.1	4990.0	3846.2	3235.8
17°	4633.1	4709.8	5039.9	5542.8	6153.1	6490.9	6172.3	5669.4	4832.7	3769.4	3178.3
18°	4111.0	4157.1	4464.2	4897.9	5515.9	5876.7	5823.0	5366.2	4717.5	3696.5	3097.7
19°	3669.6	3696.5	3907.6	4406.6	5020.7	5377.7	5347.0	5055.3	4617.7	3600.5	2971.0
20°	3289.6	3335.6	3512.2	3911.4	4456.5	4963.2	4920.9	4767.4	4460.3	3531.4	2905.7
21°	2951.8	2959.5	3166.8	3585.1	4065.0	4437.3	4540.9	4487.2	4245.4	3435.4	2821.3
22.5°	2548.8	2594.8	2713.8	3040.1	3542.9	3903.7	4068.8	4053.4	3953.6	3220.5	2621.7
23°	2429.8	2464.3	2606.3	2948.0	3351.0	3738.7	3880.7	3880.7	3846.2	3116.9	2525.7
24°	2234.0	2230.2	2345.3	2660.1	3120.7	3408.6	3654.2	3661.9	3608.2	2971.0	2395.2
25°	2088.1	2057.4	2141.9	2422.1	2844.3	3155.2	3308.8	3393.2	3347.2	2756.0	2245.5
26°	1923.1	1934.6	1988.3	2237.8	2633.2	2944.1	3055.4	3170.6	3105.3	2556.4	2057.4
27°	1758.0	1769.5	1819.4	2080.5	2487.3	2782.9	2886.5	2928.8	2886.5	2310.8	1892.4
28°	1654.4	1662.1	1700.4	1911.6	2337.6	2564.1	2690.8	2736.8	2610.2	2134.2	1708.1
29°	1562.3	1585.3	1608.3	1777.2	2176.4	2429.8	2514.2	2537.2	2406.7	1915.4	1531.6
30°	1485.5	1474.0	1523.9	1673.6	2015.2	2322.3	2372.2	2353.0	2234.0	1727.3	1397.2
32.5°	1328.1	1328.1	1358.8	1470.1	1804.1	2042.1	2088.1	2003.7	1765.7	1366.5	1097.8
35°	1220.6	1220.6	1247.5	1316.6	1554.6	1823.3	1846.3	1696.6	1443.3	1097.8	867.5
37.5°	1128.5	1140.0	1159.2	1205.3	1389.5	1616.0	1600.6	1439.4	1213.0	879.0	690.9
40°	1070.9	1070.9	1074.8	1113.2	1239.8	1443.3	1385.7	1209.1	1021.0	706.3	541.2
42.5°	1005.7	1009.5	1017.2	1032.6	1124.7	1247.5	1201.4	1074.8	879.0	568.1	410.7
45°	940.4	936.6	944.3	955.8	1017.2	1086.3	1063.3	951.9	756.2	441.4	307.1
47.5°	871.3	875.2	867.5	882.9	928.9	971.1	948.1	852.1	629.5	337.8	226.5
50°	798.4	802.2	790.7	809.9	852.1	867.5	852.1	756.2	529.7	249.5	168.9
52.5°	721.6	717.8	710.1	737.0	763.9	779.2	767.7	660.2	418.4	188.1	122.8
55°	648.7	641.0	637.2	652.5	683.3	706.3	687.1	568.1	322.4	134.3	92.1
57.5°	568.1	564.3	560.4	571.9	606.5	629.5	598.8	468.3	245.7	99.8	69.1
60°	491.3	499.0	483.6	491.3	533.5	556.6	522.0	383.8	180.4	72.9	49.9
62.5°	426.1	422.2	406.9	418.4	456.8	479.8	437.6	295.6	134.3	53.7	38.4
65°	364.7	360.8	341.6	349.3	380.0	406.9	360.8	234.1	99.8	42.2	30.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	337.8	333.9	284.0	280.2	318.6	330.1	287.9	172.7	72.9	30.7	23.0
70°	295.6	291.7	249.5	222.6	249.5	261.0	222.6	126.7	49.9	23.0	19.2
72.5°	226.5	230.3	211.1	172.7	191.9	203.4	165.1	88.3	34.5	19.2	15.4
75°	172.7	168.9	161.2	134.3	145.9	149.7	119.0	61.4	26.9	11.5	11.5
77.5°	115.2	111.3	115.2	99.8	99.8	103.6	80.6	42.2	19.2	7.7	7.7
80°	69.1	72.9	76.8	72.9	65.3	65.3	49.9	26.9	11.5	7.7	3.8
82.5°	34.5	38.4	42.2	42.2	38.4	38.4	30.7	15.4	7.7	3.8	3.8
85°	15.4	15.4	19.2	19.2	15.4	19.2	11.5	7.7	3.8	3.8	3.8
87.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
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°	4475.7	4475.7	4475.7	4475.7	4475.7	4475.7	4475.7	4475.7	4475.7	4475.7
1°	4372.0	4272.2	4272.2	4130.2	4022.7	3957.5	3842.3	3846.2	3788.6	3754.0
2°	4333.7	4118.7	3934.4	3754.0	3585.1	3500.7	3408.6	3316.5	3247.4	3228.2
3°	4279.9	3992.0	3696.5	3454.6	3243.5	3109.2	2974.8	2890.4	2859.7	2794.4
4°	4210.8	3819.3	3443.1	3178.3	2921.1	2736.8	2656.2	2537.2	2502.7	2544.9
5°	4126.4	3654.2	3251.2	2932.6	2679.3	2456.6	2341.5	2280.1	2187.9	2191.8
6°	4030.4	3447.0	3009.4	2652.4	2395.2	2230.2	2111.2	2026.7	1961.5	1996.0
7°	3907.6	3262.7	2798.3	2445.1	2199.5	2022.9	1926.9	1807.9	1735.0	1735.0
8°	3803.9	3105.3	2602.5	2260.9	2015.2	1823.3	1692.8	1612.2	1558.4	1546.9
9°	3635.0	2928.8	2445.1	2103.5	1854.0	1654.4	1508.5	1431.8	1385.7	1378.0
10°	3535.2	2771.4	2318.4	1934.6	1677.4	1508.5	1366.5	1285.9	1239.8	1239.8
11°	3374.0	2614.0	2130.4	1796.4	1539.2	1343.5	1228.3	1163.1	1109.3	1097.8
12°	3224.3	2483.5	2007.5	1685.1	1412.6	1216.8	1109.3	1040.2	1001.8	1001.8
13°	3082.3	2372.2	1900.1	1550.7	1270.5	1120.8	1001.8	925.1	886.7	882.9
14°	2967.2	2218.6	1765.7	1431.8	1163.1	1005.7	886.7	833.0	794.6	790.7
15°	2867.3	2115.0	1685.1	1301.2	1051.7	890.5	786.9	740.8	702.4	698.6
16°	2767.5	2011.4	1573.8	1197.6	955.8	813.8	706.3	641.0	618.0	618.0
17°	2686.9	1950.0	1470.1	1113.2	856.0	717.8	618.0	556.6	541.2	518.2
18°	2583.3	1827.1	1378.0	1013.4	786.9	633.4	537.4	487.5	456.8	445.3
19°	2483.5	1719.6	1289.7	909.7	698.6	552.7	472.1	414.6	387.7	387.7
20°	2368.3	1654.4	1193.8	833.0	614.2	495.2	399.2	357.0	341.6	341.6
21°	2249.4	1543.1	1086.3	740.8	545.1	422.2	357.0	310.9	291.7	284.0
22.5°	2080.5	1370.3	959.6	633.4	441.4	345.5	287.9	253.3	241.8	238.0
23°	1996.0	1308.9	890.5	598.8	414.6	318.6	268.7	234.1	222.6	218.8
24°	1865.5	1213.0	806.1	522.0	357.0	280.2	230.3	207.3	199.6	195.8
25°	1727.3	1113.2	721.6	464.5	322.4	245.7	207.3	184.2	176.6	172.7
26°	1585.3	1001.8	633.4	403.0	284.0	215.0	184.2	165.1	161.2	157.4
27°	1439.4	905.9	560.4	357.0	249.5	195.8	165.1	149.7	142.0	145.9
28°	1301.2	813.8	487.5	314.8	215.0	172.7	149.7	134.3	130.5	126.7
29°	1205.3	725.5	437.6	272.5	191.9	153.5	134.3	122.8	119.0	119.0
30°	1097.8	652.5	387.7	245.7	172.7	138.2	122.8	111.3	111.3	107.5
32.5°	867.5	495.2	284.0	184.2	134.3	107.5	96.0	92.1	88.3	88.3
35°	675.6	368.5	211.1	138.2	103.6	88.3	76.8	76.8	76.8	72.9
37.5°	518.2	272.5	161.2	107.5	84.4	72.9	65.3	65.3	61.4	61.4
40°	395.4	203.4	119.0	84.4	69.1	61.4	53.7	53.7	53.7	53.7
42.5°	295.6	153.5	96.0	69.1	57.6	49.9	46.1	46.1	46.1	46.1
45°	218.8	115.2	72.9	57.6	49.9	46.1	42.2	38.4	42.2	42.2
47.5°	161.2	88.3	57.6	46.1	42.2	38.4	38.4	34.5	34.5	34.5
50°	119.0	69.1	49.9	42.2	38.4	34.5	30.7	30.7	30.7	30.7
52.5°	88.3	53.7	42.2	34.5	30.7	30.7	26.9	26.9	26.9	26.9
55°	65.3	42.2	34.5	30.7	26.9	26.9	23.0	23.0	23.0	23.0
57.5°	49.9	34.5	30.7	26.9	26.9	23.0	23.0	19.2	19.2	19.2
60°	38.4	30.7	23.0	23.0	23.0	23.0	19.2	19.2	19.2	19.2
62.5°	30.7	23.0	19.2	19.2	19.2	19.2	15.4	15.4	15.4	15.4
65°	23.0	19.2	19.2	19.2	19.2	15.4	15.4	11.5	11.5	11.5



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	19.2	15.4	15.4	15.4	15.4	15.4	11.5	11.5	11.5	11.5
70°	15.4	11.5	11.5	11.5	11.5	11.5	11.5	7.7	7.7	7.7
72.5°	11.5	11.5	11.5	11.5	11.5	7.7	7.7	7.7	7.7	7.7
75°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	3.8	3.8	3.8
77.5°	7.7	3.8	3.8	3.8	7.7	3.8	3.8	3.8	3.8	3.8
80°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
82.5°	3.8	3.8	3.8	3.8	3.8	3.8	0.0	0.0	0.0	0.0
85°	3.8	3.8	3.8	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)