

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: P592014

Luminaire Tested: **GRZ-10L-927-ASYMx40-X-UNV-STD-2F**

Issue Date: 2/2/2022

**Test Information**

Test Method: LM-79-2019  
Report Number: P592014  
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-927-ASYMx40-X-UNV-STD-2F  
Description: iO LED GRAZER WITH ASYMx40 OPTIC  
1000 LUMENS PER FOOT, 2 FOOT FIXTURE  
SUMULATED RESULTS  
Light Source: 2700K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

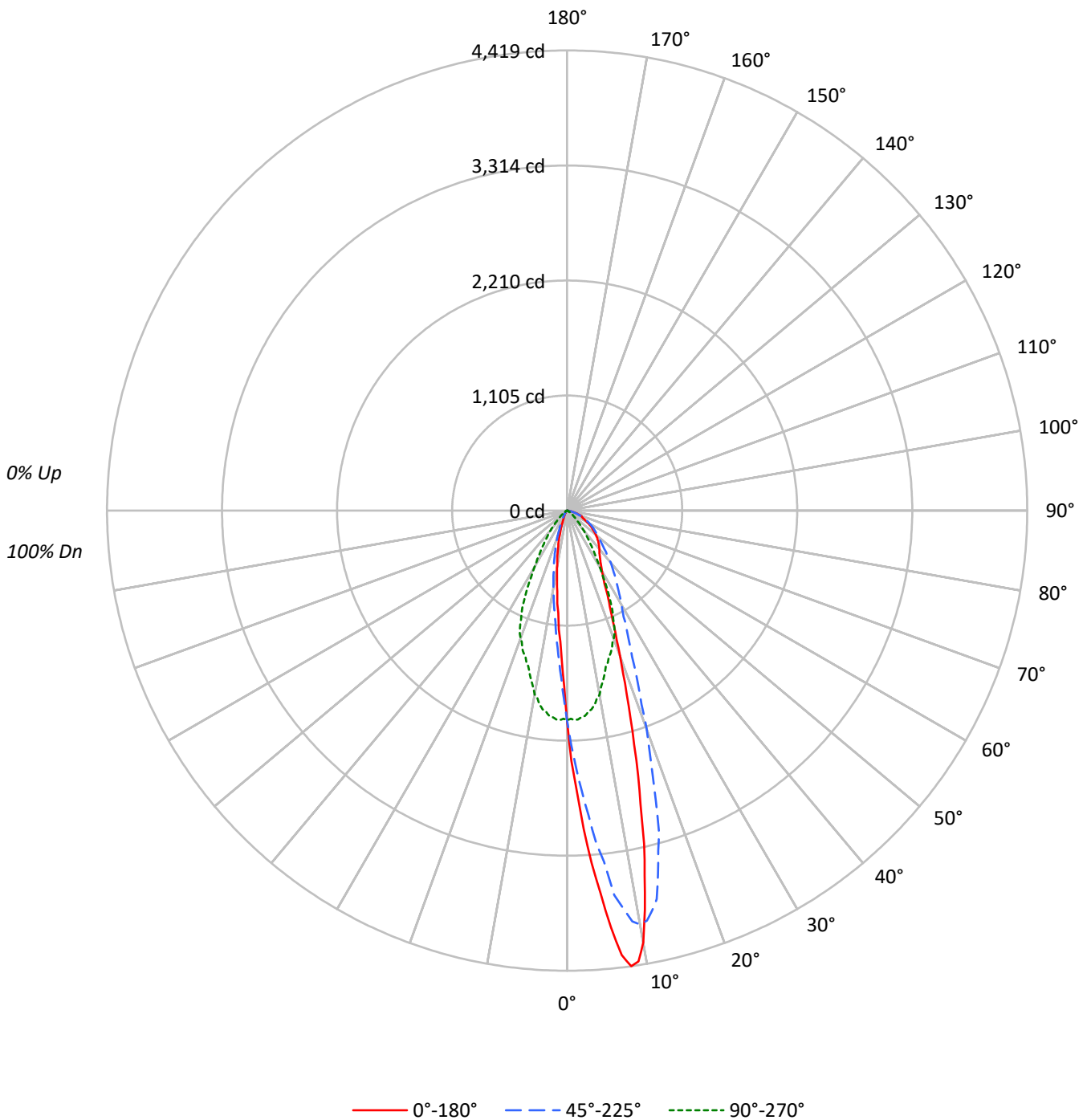
Lumens per Lamp: N/A  
Luminaire Lumens: 1668.0 lumens  
Efficiency: N/A  
Efficacy: 87.3 lumens/watt  
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71  
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')  
CIE Type: Direct

Input Watts (W): 19.1  
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°	65013	65013	65013
5°	119722	64143	31958
10°	138035	58825	18287
15°	88261	50450	10507
20°	50852	44917	5282
25°	33467	35990	2768
30°	24915	23435	1801
35°	21646	15382	1293
40°	20305	10264	1020
45°	19317	6307	868
50°	18045	3818	693
55°	16428	2331	586
60°	14273	1447	555
65°	12531	1054	397
70°	12557	812	330
75°	9694	649	212
80°	5783	316	316
85°	2556	630	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	212.6	12.7
10°-20°	466.4	28.0
20°-30°	356.3	21.4
30°-40°	239.3	14.3
40°-50°	172.1	10.3
50°-60°	119.7	7.2
60°-70°	68.6	4.1
70°-80°	28.3	1.7
80°-90°	4.6	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°	1035.3	62.1
0°-40°	1274.7	76.4
0°-60°	1566.4	93.9
0°-90°	1668.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1668.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2013	2013	2013	2013	2013	
5°	3693	3206	1979	1205	986	379
15°	2640	3383	1509	473	314	725
25°	939	1419	1010	145	78	440
35°	549	820	390	47	33	348
45°	423	489	138	22	19	326
55°	292	318	41	12	10	259
65°	164	183	14	9	5	169
75°	78	67	5	4	2	83
85°	7	9	2	0	0	11
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°	2013.3	2013.3	2013.3	2013.3	2013.3	2013.3	2013.3	2013.3	2013.3	2013.3	2013.3
1°	2407.0	2319.0	2346.6	2319.0	2277.5	2248.2	2199.8	2151.5	2084.1	2016.8	1999.5
2°	2709.2	2671.2	2609.0	2571.1	2496.8	2477.8	2379.4	2286.1	2189.5	2041.0	2011.6
3°	3064.9	2975.1	2945.7	2866.3	2780.0	2700.6	2562.4	2419.1	2234.3	2065.1	2008.1
4°	3396.4	3327.3	3317.0	3213.4	3058.0	2937.1	2771.4	2541.7	2317.2	2085.9	1987.4
5°	3693.4	3690.0	3593.3	3553.5	3370.5	3206.5	2969.9	2686.7	2386.3	2115.2	1978.8
6°	4024.9	3999.0	3981.8	3871.3	3655.4	3391.2	3177.1	2814.5	2498.5	2125.6	1940.8
7°	4299.5	4287.4	4254.6	4149.3	3945.5	3721.0	3361.9	2892.2	2500.3	2089.3	1923.5
8°	4418.6	4385.8	4423.8	4327.1	4175.2	3854.0	3470.7	3026.9	2546.9	2094.5	1885.6
9°	4384.1	4344.4	4446.2	4401.4	4278.8	3993.9	3562.2	3049.3	2552.1	2056.5	1826.8
10°	4209.7	4251.1	4328.8	4396.2	4299.5	4037.0	3593.3	3082.2	2521.0	2018.5	1794.0
11°	3907.5	3936.9	4083.6	4256.3	4216.6	4011.1	3645.1	3066.6	2477.8	1965.0	1719.8
12°	3582.9	3691.7	3778.0	3993.9	4080.2	3928.2	3553.5	2994.1	2438.1	1901.1	1662.8
13°	3284.2	3315.3	3455.1	3695.1	3866.1	3828.1	3470.7	2944.0	2382.8	1852.7	1604.1
14°	2907.8	2942.3	3158.1	3394.7	3565.6	3603.6	3322.2	2868.0	2331.0	1797.5	1540.2
15°	2640.1	2636.7	2838.7	3049.3	3332.5	3382.6	3168.5	2766.2	2296.5	1766.4	1509.1
16°	2336.2	2356.9	2512.3	2762.7	3051.1	3194.4	3040.7	2660.8	2244.7	1730.2	1455.6
17°	2084.1	2118.7	2267.2	2493.4	2767.9	2919.8	2776.5	2550.3	2173.9	1695.6	1429.7
18°	1849.3	1870.0	2008.1	2203.3	2481.3	2643.6	2619.4	2413.9	2122.1	1662.8	1393.4
19°	1650.7	1662.8	1757.8	1982.2	2258.5	2419.1	2405.3	2274.1	2077.2	1619.6	1336.5
20°	1479.8	1500.5	1579.9	1759.5	2004.7	2232.6	2213.6	2144.6	2006.4	1588.6	1307.1
21°	1327.8	1331.3	1424.5	1612.7	1828.6	1996.1	2042.7	2018.5	1909.7	1545.4	1269.1
22.5°	1146.5	1167.2	1220.8	1367.5	1593.7	1756.1	1830.3	1823.4	1778.5	1448.7	1179.3
23°	1093.0	1108.5	1172.4	1326.1	1507.4	1681.8	1745.7	1745.7	1730.2	1402.1	1136.2
24°	1004.9	1003.2	1055.0	1196.6	1403.8	1533.3	1643.8	1647.3	1623.1	1336.5	1077.5
25°	939.3	925.5	963.5	1089.5	1279.5	1419.3	1488.4	1526.4	1505.7	1239.8	1010.1
26°	865.1	870.3	894.4	1006.7	1184.5	1324.4	1374.5	1426.3	1396.9	1150.0	925.5
27°	790.8	796.0	818.5	935.9	1118.9	1251.9	1298.5	1317.5	1298.5	1039.5	851.3
28°	744.2	747.7	764.9	859.9	1051.6	1153.4	1210.4	1231.1	1174.2	960.0	768.4
29°	702.8	713.1	723.5	799.5	979.0	1093.0	1131.0	1141.3	1082.6	861.6	689.0
30°	668.2	663.1	685.5	752.8	906.5	1044.7	1067.1	1058.5	1004.9	777.0	628.5
32.5°	597.4	597.4	611.3	661.3	811.5	918.6	939.3	901.3	794.3	614.7	493.8
35°	549.1	549.1	561.2	592.3	699.3	820.2	830.5	763.2	649.2	493.8	390.2
37.5°	507.6	512.8	521.5	542.2	625.1	726.9	720.0	647.5	545.6	395.4	310.8
40°	481.7	481.7	483.5	500.7	557.7	649.2	623.3	543.9	459.3	317.7	243.5
42.5°	452.4	454.1	457.6	464.5	505.9	561.2	540.5	483.5	395.4	255.6	184.8
45°	423.0	421.3	424.8	429.9	457.6	488.7	478.3	428.2	340.2	198.6	138.1
47.5°	392.0	393.7	390.2	397.1	417.9	436.9	426.5	383.3	283.2	151.9	101.9
50°	359.2	360.9	355.7	364.3	383.3	390.2	383.3	340.2	238.3	112.2	76.0
52.5°	324.6	322.9	319.4	331.5	343.6	350.5	345.3	297.0	188.2	84.6	55.3
55°	291.8	288.4	286.6	293.5	307.4	317.7	309.1	255.6	145.0	60.4	41.4
57.5°	255.6	253.8	252.1	257.3	272.8	283.2	269.4	210.7	110.5	44.9	31.1
60°	221.0	224.5	217.6	221.0	240.0	250.4	234.8	172.7	81.2	32.8	22.4
62.5°	191.7	189.9	183.0	188.2	205.5	215.8	196.8	133.0	60.4	24.2	17.3
65°	164.0	162.3	153.7	157.1	170.9	183.0	162.3	105.3	44.9	19.0	13.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	151.9	150.2	127.8	126.0	143.3	148.5	129.5	77.7	32.8	13.8	10.4
70°	133.0	131.2	112.2	100.1	112.2	117.4	100.1	57.0	22.4	10.4	8.6
72.5°	101.9	103.6	95.0	77.7	86.3	91.5	74.2	39.7	15.5	8.6	6.9
75°	77.7	76.0	72.5	60.4	65.6	67.3	53.5	27.6	12.1	5.2	5.2
77.5°	51.8	50.1	51.8	44.9	44.9	46.6	36.3	19.0	8.6	3.5	3.5
80°	31.1	32.8	34.5	32.8	29.4	29.4	22.4	12.1	5.2	3.5	1.7
82.5°	15.5	17.3	19.0	19.0	17.3	17.3	13.8	6.9	3.5	1.7	1.7
85°	6.9	6.9	8.6	8.6	6.9	8.6	5.2	3.5	1.7	1.7	1.7
87.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
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°	2013.3	2013.3	2013.3	2013.3	2013.3	2013.3	2013.3	2013.3	2013.3	2013.3
1°	1966.7	1921.8	1921.8	1857.9	1809.6	1780.2	1728.4	1730.2	1704.3	1688.7
2°	1949.4	1852.7	1769.9	1688.7	1612.7	1574.7	1533.3	1491.9	1460.8	1452.2
3°	1925.3	1795.8	1662.8	1554.0	1459.1	1398.6	1338.2	1300.2	1286.4	1257.0
4°	1894.2	1718.1	1548.8	1429.7	1314.0	1231.1	1194.9	1141.3	1125.8	1144.8
5°	1856.2	1643.8	1462.5	1319.2	1205.2	1105.1	1053.3	1025.7	984.2	985.9
6°	1813.0	1550.6	1353.7	1193.1	1077.5	1003.2	949.7	911.7	882.3	897.9
7°	1757.8	1467.7	1258.8	1099.9	989.4	910.0	866.8	813.3	780.5	780.5
8°	1711.2	1396.9	1170.7	1017.0	906.5	820.2	761.5	725.2	701.0	695.9
9°	1635.2	1317.5	1099.9	946.2	834.0	744.2	678.6	644.1	623.3	619.9
10°	1590.3	1246.7	1042.9	870.3	754.6	678.6	614.7	578.4	557.7	557.7
11°	1517.8	1175.9	958.3	808.1	692.4	604.3	552.5	523.2	499.0	493.8
12°	1450.4	1117.2	903.1	758.0	635.4	547.4	499.0	467.9	450.7	450.7
13°	1386.5	1067.1	854.7	697.6	571.5	504.2	450.7	416.1	398.9	397.1
14°	1334.7	998.0	794.3	644.1	523.2	452.4	398.9	374.7	357.4	355.7
15°	1289.8	951.4	758.0	585.4	473.1	400.6	354.0	333.3	316.0	314.3
16°	1244.9	904.8	707.9	538.7	429.9	366.1	317.7	288.4	278.0	278.0
17°	1208.7	877.2	661.3	500.7	385.1	322.9	278.0	250.4	243.5	233.1
18°	1162.1	821.9	619.9	455.8	354.0	284.9	241.7	219.3	205.5	200.3
19°	1117.2	773.6	580.2	409.2	314.3	248.6	212.4	186.5	174.4	174.4
20°	1065.4	744.2	537.0	374.7	276.3	222.7	179.6	160.6	153.7	153.7
21°	1011.8	694.1	488.7	333.3	245.2	189.9	160.6	139.9	131.2	127.8
22.5°	935.9	616.4	431.7	284.9	198.6	155.4	129.5	114.0	108.8	107.1
23°	897.9	588.8	400.6	269.4	186.5	143.3	120.9	105.3	100.1	98.4
24°	839.2	545.6	362.6	234.8	160.6	126.0	103.6	93.2	89.8	88.1
25°	777.0	500.7	324.6	208.9	145.0	110.5	93.2	82.9	79.4	77.7
26°	713.1	450.7	284.9	181.3	127.8	96.7	82.9	74.2	72.5	70.8
27°	647.5	407.5	252.1	160.6	112.2	88.1	74.2	67.3	63.9	65.6
28°	585.4	366.1	219.3	141.6	96.7	77.7	67.3	60.4	58.7	57.0
29°	542.2	326.3	196.8	122.6	86.3	69.1	60.4	55.3	53.5	53.5
30°	493.8	293.5	174.4	110.5	77.7	62.2	55.3	50.1	50.1	48.3
32.5°	390.2	222.7	127.8	82.9	60.4	48.3	43.2	41.4	39.7	39.7
35°	303.9	165.8	95.0	62.2	46.6	39.7	34.5	34.5	34.5	32.8
37.5°	233.1	122.6	72.5	48.3	38.0	32.8	29.4	29.4	27.6	27.6
40°	177.8	91.5	53.5	38.0	31.1	27.6	24.2	24.2	24.2	24.2
42.5°	133.0	69.1	43.2	31.1	25.9	22.4	20.7	20.7	20.7	20.7
45°	98.4	51.8	32.8	25.9	22.4	20.7	19.0	17.3	19.0	19.0
47.5°	72.5	39.7	25.9	20.7	19.0	17.3	17.3	15.5	15.5	15.5
50°	53.5	31.1	22.4	19.0	17.3	15.5	13.8	13.8	13.8	13.8
52.5°	39.7	24.2	19.0	15.5	13.8	13.8	12.1	12.1	12.1	12.1
55°	29.4	19.0	15.5	13.8	12.1	12.1	10.4	10.4	10.4	10.4
57.5°	22.4	15.5	13.8	12.1	12.1	10.4	10.4	8.6	8.6	8.6
60°	17.3	13.8	10.4	10.4	10.4	10.4	8.6	8.6	8.6	8.6
62.5°	13.8	10.4	8.6	8.6	8.6	8.6	6.9	6.9	6.9	6.9
65°	10.4	8.6	8.6	8.6	8.6	6.9	6.9	5.2	5.2	5.2





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	8.6	6.9	6.9	6.9	6.9	6.9	5.2	5.2	5.2	5.2
70°	6.9	5.2	5.2	5.2	5.2	5.2	5.2	3.5	3.5	3.5
72.5°	5.2	5.2	5.2	5.2	5.2	3.5	3.5	3.5	3.5	3.5
75°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	1.7	1.7	1.7
77.5°	3.5	1.7	1.7	1.7	3.5	1.7	1.7	1.7	1.7	1.7
80°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	1.7	1.7	1.7	1.7	1.7	1.7	0.0	0.0	0.0	0.0
85°	1.7	1.7	1.7	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)