

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: P592015

Luminaire Tested: **GRZ-10L-927-ASYMx40-X-UNV-STD-4F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592015
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-4F
Description: iO LED GRAZER WITH ASYMx40 OPTIC
1000 LUMENS PER FOOT, 4 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

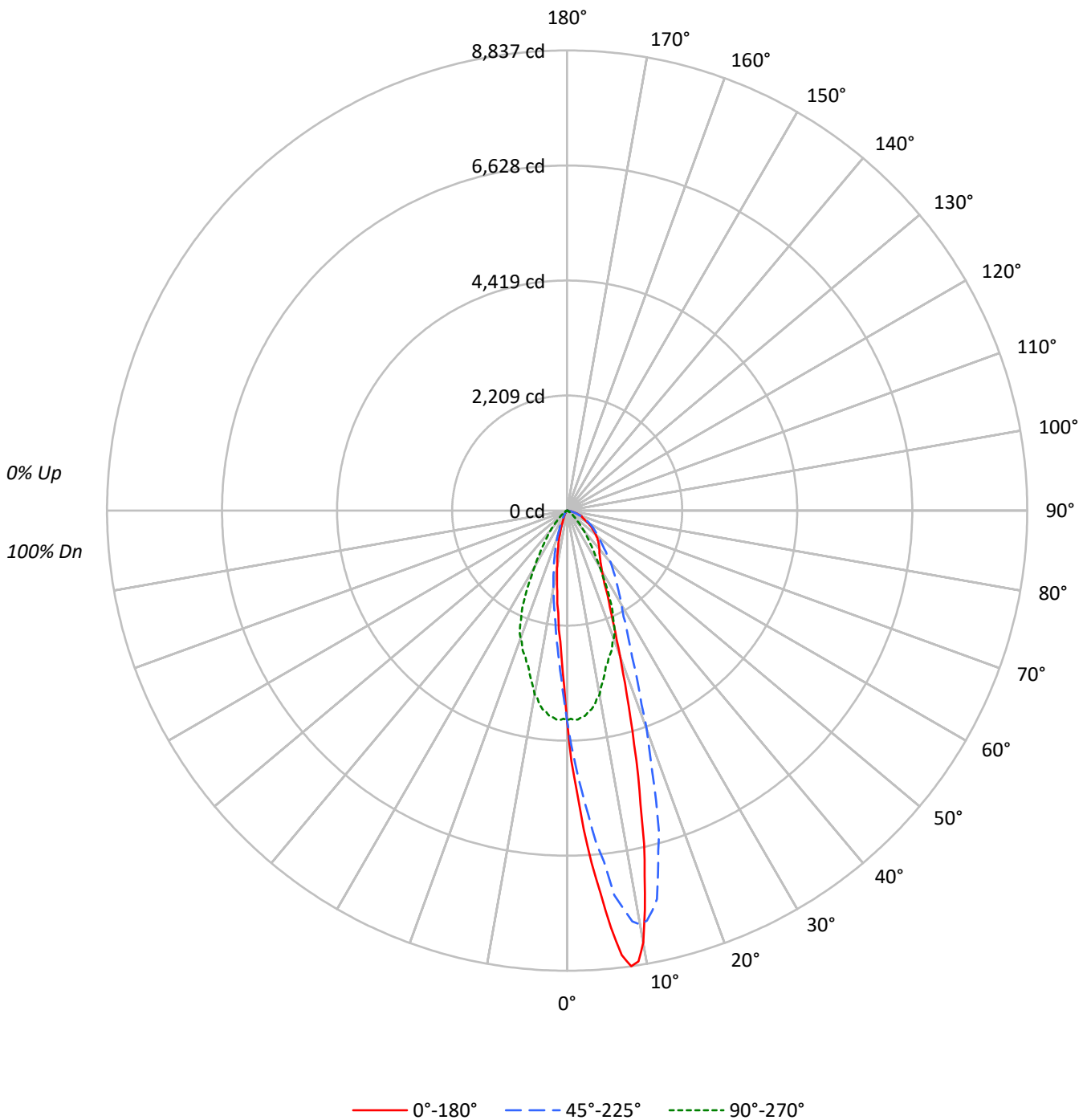
Lumens per Lamp: N/A
Luminaire Lumens: 3336.0 lumens
Efficiency: N/A
Efficacy: 87.8 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 38
Input Voltage (V): 120
Input Current (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



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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°	65014	65014	65014
5°	119722	64143	31960
10°	138035	58827	18287
15°	88261	50452	10506
20°	50852	44917	5282
25°	33467	35990	2768
30°	24917	23435	1803
35°	21646	15384	1293
40°	20308	10262	1018
45°	19320	6309	868
50°	18043	3815	693
55°	16428	2334	583
60°	14273	1450	559
65°	12535	1054	397
70°	12552	817	326
75°	9694	649	218
80°	5783	325	325
85°	2556	648	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	425.1	12.7
10°-20°	932.9	28.0
20°-30°	712.7	21.4
30°-40°	478.7	14.3
40°-50°	344.1	10.3
50°-60°	239.3	7.2
60°-70°	137.3	4.1
70°-80°	56.7	1.7
80°-90°	9.3	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°	2070.7	62.1
0°-40°	2549.4	76.4
0°-60°	3132.8	93.9
0°-90°	3336.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3336.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	4027	4027	4027	4027	4027	
5°	7387	6413	3958	2410	1972	758
15°	5280	6765	3018	946	628	1449
25°	1879	2839	2020	290	155	880
35°	1098	1640	780	93	66	696
45°	846	977	276	45	38	651
55°	584	635	83	24	21	519
65°	328	366	28	17	10	339
75°	155	135	10	7	4	165
85°	14	17	4	0	0	22
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°	4026.7	4026.7	4026.7	4026.7	4026.7	4026.7	4026.7	4026.7	4026.7	4026.7	4026.7
1°	4814.0	4637.9	4693.2	4637.9	4555.0	4496.3	4399.6	4302.9	4168.2	4033.6	3999.0
2°	5418.4	5342.4	5218.1	5142.1	4993.6	4955.6	4758.8	4572.3	4378.9	4081.9	4023.2
3°	6129.8	5950.2	5891.5	5732.6	5560.0	5401.1	5124.8	4838.2	4468.7	4130.3	4016.3
4°	6792.8	6654.7	6634.0	6426.8	6116.0	5874.2	5542.7	5083.4	4634.5	4171.7	3974.9
5°	7386.8	7379.9	7186.5	7107.1	6741.0	6413.0	5939.8	5373.5	4772.6	4230.4	3957.6
6°	8049.9	7998.1	7963.5	7742.5	7310.8	6782.5	6354.2	5629.0	4997.1	4251.1	3881.6
7°	8599.0	8574.8	8509.2	8298.5	7891.0	7442.1	6723.8	5784.4	5000.5	4178.6	3847.1
8°	8837.2	8771.6	8847.6	8654.2	8350.3	7708.0	6941.3	6053.8	5093.8	4189.0	3771.1
9°	8768.2	8688.7	8892.5	8802.7	8557.5	7987.7	7124.4	6098.7	5104.1	4113.0	3653.7
10°	8419.4	8502.3	8657.7	8792.3	8599.0	8074.0	7186.5	6164.3	5042.0	4037.0	3588.1
11°	7815.0	7873.7	8167.3	8512.6	8433.2	8022.2	7290.1	6133.2	4955.6	3930.0	3439.6
12°	7165.8	7383.4	7556.0	7987.7	8160.4	7856.5	7107.1	5988.2	4876.2	3802.2	3325.6
13°	6568.4	6630.5	6910.2	7390.3	7732.2	7656.2	6941.3	5888.0	4765.7	3705.5	3208.2
14°	5815.5	5884.6	6316.3	6789.4	7131.3	7207.2	6644.3	5736.1	4662.1	3595.0	3080.4
15°	5280.2	5273.3	5677.4	6098.7	6665.1	6765.2	6337.0	5532.3	4593.0	3532.8	3018.3
16°	4672.4	4713.9	5024.7	5525.4	6102.2	6388.8	6081.4	5321.7	4489.4	3460.3	2911.2
17°	4168.2	4237.3	4534.3	4986.7	5535.8	5839.7	5553.1	5100.7	4347.8	3391.2	2859.4
18°	3698.6	3740.0	4016.3	4406.5	4962.5	5287.1	5238.8	4827.8	4244.2	3325.6	2786.9
19°	3301.4	3325.6	3515.6	3964.5	4517.0	4838.2	4810.6	4548.1	4154.4	3239.3	2672.9
20°	2959.6	3001.0	3159.9	3519.0	4009.4	4465.2	4427.3	4289.1	4012.8	3177.1	2614.2
21°	2655.7	2662.6	2849.1	3225.5	3657.1	3992.1	4085.4	4037.0	3819.5	3090.8	2538.2
22.5°	2293.1	2334.5	2441.6	2735.1	3187.5	3512.1	3660.6	3646.8	3557.0	2897.4	2358.7
23°	2186.0	2217.1	2344.9	2652.2	3014.8	3363.6	3491.4	3491.4	3460.3	2804.2	2272.3
24°	2009.9	2006.4	2110.0	2393.2	2807.6	3066.6	3287.6	3294.5	3246.2	2672.9	2154.9
25°	1878.6	1851.0	1927.0	2179.1	2559.0	2838.7	2976.8	3052.8	3011.4	2479.5	2020.2
26°	1730.2	1740.5	1788.9	2013.3	2369.0	2648.8	2748.9	2852.5	2793.8	2300.0	1851.0
27°	1581.7	1592.0	1636.9	1871.7	2237.8	2503.7	2597.0	2634.9	2597.0	2078.9	1702.5
28°	1488.4	1495.3	1529.9	1719.8	2103.1	2306.9	2420.8	2462.3	2348.3	1920.1	1536.8
29°	1405.5	1426.3	1447.0	1598.9	1958.1	2186.0	2262.0	2282.7	2165.3	1723.2	1377.9
30°	1336.5	1326.1	1371.0	1505.7	1813.0	2089.3	2134.2	2116.9	2009.9	1554.0	1257.0
32.5°	1194.9	1194.9	1222.5	1322.7	1623.1	1837.2	1878.6	1802.7	1588.6	1229.4	987.7
35°	1098.2	1098.2	1122.4	1184.5	1398.6	1640.4	1661.1	1526.4	1298.5	987.7	780.5
37.5°	1015.3	1025.7	1042.9	1084.4	1250.1	1453.9	1440.1	1295.0	1091.3	790.8	621.6
40°	963.5	963.5	967.0	1001.5	1115.4	1298.5	1246.7	1087.8	918.6	635.4	486.9
42.5°	904.8	908.2	915.1	929.0	1011.8	1122.4	1080.9	967.0	790.8	511.1	369.5
45°	846.1	842.6	849.5	859.9	915.1	977.3	956.6	856.4	680.3	397.1	276.3
47.5°	783.9	787.4	780.5	794.3	835.7	873.7	853.0	766.7	566.4	303.9	203.8
50°	718.3	721.8	711.4	728.7	766.7	780.5	766.7	680.3	476.6	224.5	151.9
52.5°	649.2	645.8	638.9	663.1	687.2	701.0	690.7	594.0	376.4	169.2	110.5
55°	583.6	576.7	573.3	587.1	614.7	635.4	618.2	511.1	290.1	120.9	82.9
57.5°	511.1	507.6	504.2	514.6	545.6	566.4	538.7	421.3	221.0	89.8	62.2
60°	442.0	448.9	435.1	442.0	480.0	500.7	469.7	345.3	162.3	65.6	44.9
62.5°	383.3	379.9	366.1	376.4	411.0	431.7	393.7	265.9	120.9	48.3	34.5
65°	328.1	324.6	307.4	314.3	341.9	366.1	324.6	210.7	89.8	38.0	27.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	303.9	300.4	255.6	252.1	286.6	297.0	259.0	155.4	65.6	27.6	20.7
70°	265.9	262.5	224.5	200.3	224.5	234.8	200.3	114.0	44.9	20.7	17.3
72.5°	203.8	207.2	189.9	155.4	172.7	183.0	148.5	79.4	31.1	17.3	13.8
75°	155.4	151.9	145.0	120.9	131.2	134.7	107.1	55.3	24.2	10.4	10.4
77.5°	103.6	100.1	103.6	89.8	89.8	93.2	72.5	38.0	17.3	6.9	6.9
80°	62.2	65.6	69.1	65.6	58.7	58.7	44.9	24.2	10.4	6.9	3.5
82.5°	31.1	34.5	38.0	38.0	34.5	34.5	27.6	13.8	6.9	3.5	3.5
85°	13.8	13.8	17.3	17.3	13.8	17.3	10.4	6.9	3.5	3.5	3.5
87.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
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°	4026.7	4026.7	4026.7	4026.7	4026.7	4026.7	4026.7	4026.7	4026.7	4026.7
1°	3933.4	3843.6	3843.6	3715.9	3619.2	3560.5	3456.8	3460.3	3408.5	3377.4
2°	3898.9	3705.5	3539.7	3377.4	3225.5	3149.5	3066.6	2983.7	2921.6	2904.3
3°	3850.5	3591.5	3325.6	3108.1	2918.1	2797.3	2676.4	2600.4	2572.8	2514.1
4°	3788.4	3436.1	3097.7	2859.4	2628.0	2462.3	2389.7	2282.7	2251.6	2289.6
5°	3712.4	3287.6	2925.0	2638.4	2410.5	2210.2	2106.6	2051.3	1968.4	1971.9
6°	3626.1	3101.1	2707.5	2386.3	2154.9	2006.4	1899.4	1823.4	1764.7	1795.8
7°	3515.6	2935.4	2517.5	2199.8	1978.8	1819.9	1733.6	1626.5	1560.9	1560.9
8°	3422.3	2793.8	2341.4	2034.1	1813.0	1640.4	1522.9	1450.4	1402.1	1391.7
9°	3270.4	2634.9	2199.8	1892.5	1668.0	1488.4	1357.2	1288.1	1246.7	1239.8
10°	3180.6	2493.4	2085.9	1740.5	1509.1	1357.2	1229.4	1156.9	1115.4	1115.4
11°	3035.5	2351.8	1916.6	1616.2	1384.8	1208.7	1105.1	1046.4	998.0	987.7
12°	2900.9	2234.3	1806.1	1516.0	1270.8	1094.7	998.0	935.9	901.3	901.3
13°	2773.1	2134.2	1709.4	1395.2	1143.1	1008.4	901.3	832.3	797.7	794.3
14°	2669.5	1996.1	1588.6	1288.1	1046.4	904.8	797.7	749.4	714.9	711.4
15°	2579.7	1902.8	1516.0	1170.7	946.2	801.2	707.9	666.5	632.0	628.5
16°	2489.9	1809.6	1415.9	1077.5	859.9	732.1	635.4	576.7	556.0	556.0
17°	2417.4	1754.3	1322.7	1001.5	770.1	645.8	556.0	500.7	486.9	466.2
18°	2324.1	1643.8	1239.8	911.7	707.9	569.8	483.5	438.6	411.0	400.6
19°	2234.3	1547.1	1160.3	818.5	628.5	497.3	424.8	373.0	348.8	348.8
20°	2130.7	1488.4	1074.0	749.4	552.5	445.5	359.2	321.2	307.4	307.4
21°	2023.7	1388.3	977.3	666.5	490.4	379.9	321.2	279.7	262.5	255.6
22.5°	1871.7	1232.9	863.3	569.8	397.1	310.8	259.0	227.9	217.6	214.1
23°	1795.8	1177.6	801.2	538.7	373.0	286.6	241.7	210.7	200.3	196.8
24°	1678.4	1091.3	725.2	469.7	321.2	252.1	207.2	186.5	179.6	176.1
25°	1554.0	1001.5	649.2	417.9	290.1	221.0	186.5	165.8	158.9	155.4
26°	1426.3	901.3	569.8	362.6	255.6	193.4	165.8	148.5	145.0	141.6
27°	1295.0	815.0	504.2	321.2	224.5	176.1	148.5	134.7	127.8	131.2
28°	1170.7	732.1	438.6	283.2	193.4	155.4	134.7	120.9	117.4	114.0
29°	1084.4	652.7	393.7	245.2	172.7	138.1	120.9	110.5	107.1	107.1
30°	987.7	587.1	348.8	221.0	155.4	124.3	110.5	100.1	100.1	96.7
32.5°	780.5	445.5	255.6	165.8	120.9	96.7	86.3	82.9	79.4	79.4
35°	607.8	331.5	189.9	124.3	93.2	79.4	69.1	69.1	69.1	65.6
37.5°	466.2	245.2	145.0	96.7	76.0	65.6	58.7	58.7	55.3	55.3
40°	355.7	183.0	107.1	76.0	62.2	55.3	48.3	48.3	48.3	48.3
42.5°	265.9	138.1	86.3	62.2	51.8	44.9	41.4	41.4	41.4	41.4
45°	196.8	103.6	65.6	51.8	44.9	41.4	38.0	34.5	38.0	38.0
47.5°	145.0	79.4	51.8	41.4	38.0	34.5	34.5	31.1	31.1	31.1
50°	107.1	62.2	44.9	38.0	34.5	31.1	27.6	27.6	27.6	27.6
52.5°	79.4	48.3	38.0	31.1	27.6	27.6	24.2	24.2	24.2	24.2
55°	58.7	38.0	31.1	27.6	24.2	24.2	20.7	20.7	20.7	20.7
57.5°	44.9	31.1	27.6	24.2	24.2	20.7	20.7	17.3	17.3	17.3
60°	34.5	27.6	20.7	20.7	20.7	20.7	17.3	17.3	17.3	17.3
62.5°	27.6	20.7	17.3	17.3	17.3	17.3	13.8	13.8	13.8	13.8
65°	20.7	17.3	17.3	17.3	17.3	13.8	13.8	10.4	10.4	10.4



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	17.3	13.8	13.8	13.8	13.8	13.8	10.4	10.4	10.4	10.4
70°	13.8	10.4	10.4	10.4	10.4	10.4	10.4	6.9	6.9	6.9
72.5°	10.4	10.4	10.4	10.4	10.4	6.9	6.9	6.9	6.9	6.9
75°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	3.5	3.5	3.5
77.5°	6.9	3.5	3.5	3.5	6.9	3.5	3.5	3.5	3.5	3.5
80°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
82.5°	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0	0.0
85°	3.5	3.5	3.5	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)