

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: P592047

Luminaire Tested: **GRZ-10L-935-ASYMx40-X-UNV-STD-4F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592047
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-935-ASYMx40-X-UNV-STD-4F
Description: iO LED GRAZER WITH ASYMx40 OPTIC
1000 LUMENS PER FOOT, 4 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

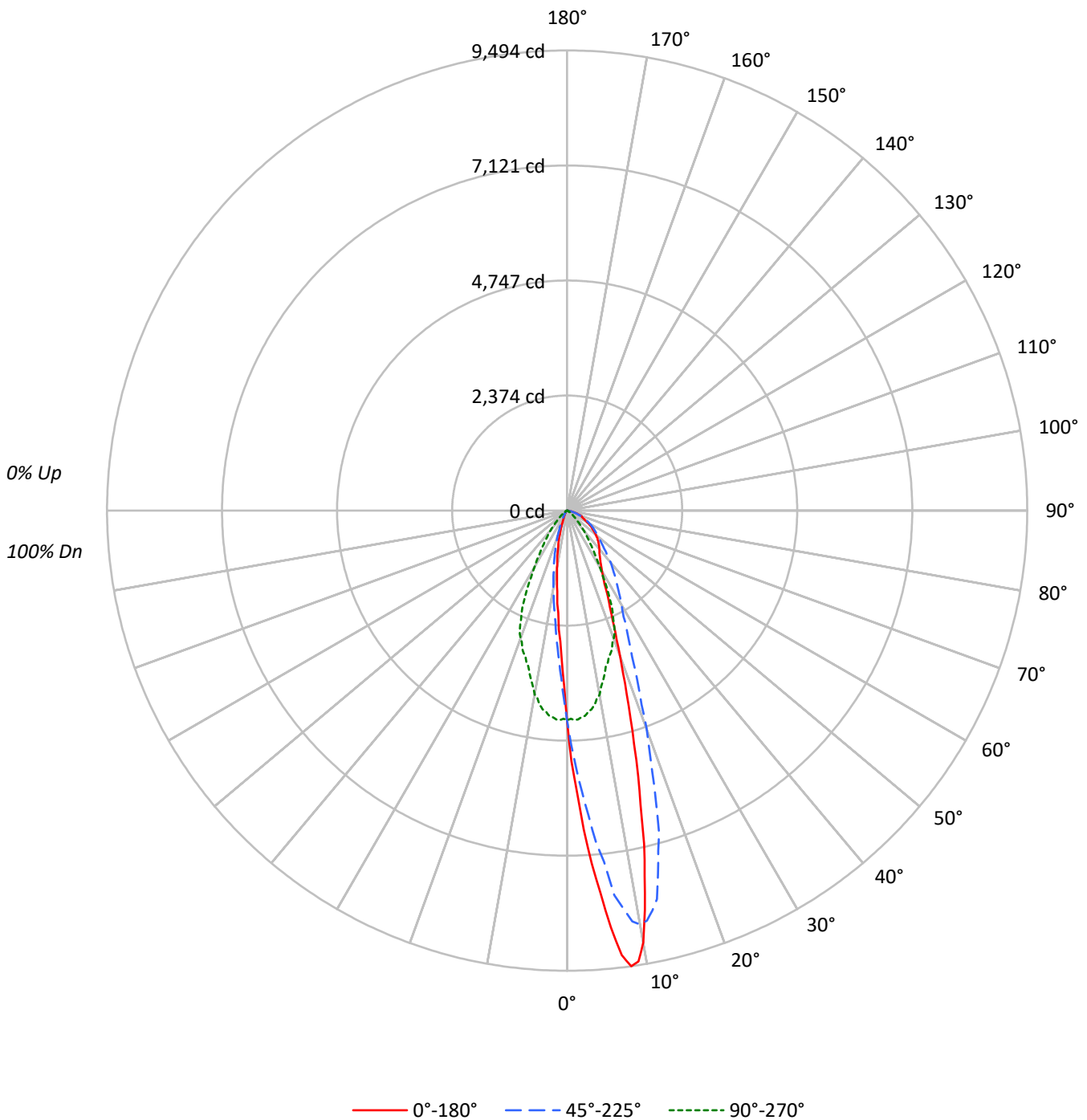
Lumens per Lamp: N/A
Luminaire Lumens: 3584.0 lumens
Efficiency: N/A
Efficacy: 94.3 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')
CIE Type: Direct

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



TEST NUMBER: P592047
CATALOG NUMBER: GRZ-10L-935-ASYMx40-X-UNV-STD-4F

Luminous Intensity Polar Plot





TEST NUMBER: P592047

CATALOG NUMBER: GRZ-10L-935-ASYMx40-X-UNV-STD-4F

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°	69847	69847	69847
5°	128623	68911	34336
10°	148297	63199	19648
15°	94823	54201	11286
20°	54632	48257	5674
25°	35956	38666	2975
30°	26768	25178	1937
35°	23254	16527	1390
40°	21817	11025	1094
45°	20756	6777	932
50°	19384	4099	746
55°	17650	2505	628
60°	15335	1556	601
65°	13467	1135	424
70°	13487	878	349
75°	10418	692	231
80°	6211	344	344
85°	2742	685	0



TEST NUMBER: P592047

CATALOG NUMBER: GRZ-10L-935-ASYMx40-X-UNV-STD-4F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	456.7	12.7
10°-20°	1002.2	28.0
20°-30°	765.7	21.4
30°-40°	514.3	14.3
40°-50°	369.7	10.3
50°-60°	257.1	7.2
60°-70°	147.5	4.1
70°-80°	60.9	1.7
80°-90°	10.0	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°	2224.6	62.1
0°-40°	2738.9	76.4
0°-60°	3365.7	93.9
0°-90°	3584.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3584.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	4326	4326	4326	4326	4326	
5°	7936	6890	4252	2590	2118	815
15°	5673	7268	3243	1017	675	1557
25°	2018	3050	2170	312	167	945
35°	1180	1762	838	100	70	747
45°	909	1050	297	48	41	699
55°	627	683	89	26	22	557
65°	352	393	30	19	11	364
75°	167	145	11	7	4	177
85°	15	19	4	0	0	23
90°	0	0	0	0	0	



TEST NUMBER: P592047

CATALOG NUMBER: GRZ-10L-935-ASYMx40-X-UNV-STD-4F

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	4326.0	4326.0	4326.0	4326.0	4326.0	4326.0	4326.0	4326.0	4326.0	4326.0	4326.0
1°	5171.9	4982.7	5042.1	4982.7	4893.7	4830.6	4726.7	4622.8	4478.1	4333.4	4296.3
2°	5821.2	5739.6	5606.0	5524.4	5364.8	5324.0	5112.5	4912.2	4704.4	4385.4	4322.3
3°	6585.5	6392.5	6329.5	6158.8	5973.3	5802.6	5505.8	5197.9	4800.9	4437.3	4314.9
4°	7297.8	7149.4	7127.1	6904.5	6570.6	6310.9	5954.7	5461.3	4979.0	4481.8	4270.4
5°	7936.0	7928.5	7720.8	7635.4	7242.2	6889.7	6381.4	5773.0	5127.4	4544.9	4251.8
6°	8648.3	8592.6	8555.5	8318.1	7854.3	7286.7	6826.6	6047.5	5368.5	4567.2	4170.2
7°	9238.2	9212.2	9141.7	8915.4	8477.6	7995.3	7223.6	6214.5	5372.3	4489.2	4133.1
8°	9494.2	9423.7	9505.3	9297.6	8971.1	8281.0	7457.3	6503.8	5472.4	4500.4	4051.5
9°	9420.0	9334.7	9553.6	9457.1	9193.7	8581.5	7654.0	6552.1	5483.6	4418.8	3925.3
10°	9045.3	9134.3	9301.3	9446.0	9238.2	8674.3	7720.8	6622.6	5416.8	4337.1	3854.8
11°	8396.0	8459.1	8774.4	9145.5	9060.1	8618.6	7832.1	6589.2	5324.0	4222.1	3695.3
12°	7698.5	7932.2	8117.7	8581.5	8767.0	8440.5	7635.4	6433.4	5238.7	4084.8	3572.8
13°	7056.7	7123.4	7424.0	7939.7	8307.0	8225.3	7457.3	6325.8	5120.0	3981.0	3446.7
14°	6247.8	6322.0	6785.8	7294.1	7661.4	7743.0	7138.3	6162.5	5008.7	3862.2	3309.4
15°	5672.8	5665.4	6099.4	6552.1	7160.5	7268.1	6808.1	5943.6	4934.5	3795.5	3242.6
16°	5019.8	5064.3	5398.2	5936.2	6555.8	6863.7	6533.5	5717.3	4823.2	3717.5	3127.6
17°	4478.1	4552.3	4871.4	5357.4	5947.3	6273.8	5965.9	5479.9	4671.0	3643.3	3072.0
18°	3973.5	4018.1	4314.9	4734.1	5331.4	5680.2	5628.3	5186.8	4559.7	3572.8	2994.1
19°	3546.9	3572.8	3776.9	4259.2	4852.8	5197.9	5168.2	4886.2	4463.3	3480.1	2871.6
20°	3179.6	3224.1	3394.8	3780.6	4307.5	4797.2	4756.4	4608.0	4311.2	3413.3	2808.6
21°	2853.1	2860.5	3060.9	3465.3	3929.0	4288.9	4389.1	4337.1	4103.4	3320.6	2726.9
22.5°	2463.5	2508.0	2623.1	2938.4	3424.4	3773.2	3932.7	3917.9	3821.4	3112.8	2534.0
23°	2348.5	2381.9	2519.2	2849.4	3238.9	3613.7	3750.9	3750.9	3717.5	3012.6	2441.3
24°	2159.3	2155.6	2266.9	2571.1	3016.3	3294.6	3532.0	3539.5	3487.5	2871.6	2315.1
25°	2018.3	1988.6	2070.2	2341.1	2749.2	3049.7	3198.1	3279.7	3235.2	2663.9	2170.4
26°	1858.8	1869.9	1921.8	2163.0	2545.1	2845.7	2953.3	3064.6	3001.5	2470.9	1988.6
27°	1699.2	1710.4	1758.6	2010.9	2404.2	2689.8	2790.0	2830.8	2790.0	2233.5	1829.1
28°	1599.1	1606.5	1643.6	1847.6	2259.5	2478.4	2600.8	2645.3	2522.9	2062.8	1651.0
29°	1510.0	1532.3	1554.5	1717.8	2103.6	2348.5	2430.1	2452.4	2326.2	1851.4	1480.3
30°	1435.8	1424.7	1472.9	1617.6	1947.8	2244.6	2292.9	2274.3	2159.3	1669.6	1350.5
32.5°	1283.7	1283.7	1313.4	1421.0	1743.8	1973.8	2018.3	1936.7	1706.7	1320.8	1061.1
35°	1179.8	1179.8	1205.8	1272.6	1502.6	1762.3	1784.6	1639.9	1395.0	1061.1	838.5
37.5°	1090.8	1101.9	1120.5	1165.0	1343.1	1562.0	1547.1	1391.3	1172.4	849.6	667.8
40°	1035.1	1035.1	1038.8	1075.9	1198.4	1395.0	1339.4	1168.7	986.9	682.7	523.1
42.5°	972.1	975.8	983.2	998.0	1087.1	1205.8	1161.3	1038.8	849.6	549.1	397.0
45°	909.0	905.3	912.7	923.8	983.2	1050.0	1027.7	920.1	730.9	426.7	296.8
47.5°	842.2	845.9	838.5	853.3	897.8	938.7	916.4	823.6	608.5	326.5	218.9
50°	771.7	775.4	764.3	782.8	823.6	838.5	823.6	730.9	512.0	241.2	163.2
52.5°	697.5	693.8	686.4	712.3	738.3	753.2	742.0	638.1	404.4	181.8	118.7
55°	627.0	619.6	615.9	630.7	660.4	682.7	664.1	549.1	311.7	129.9	89.0
57.5°	549.1	545.4	541.7	552.8	586.2	608.5	578.8	452.6	237.4	96.5	66.8
60°	474.9	482.3	467.5	474.9	515.7	538.0	504.6	371.0	174.4	70.5	48.2
62.5°	411.8	408.1	393.3	404.4	441.5	463.8	423.0	285.7	129.9	51.9	37.1
65°	352.5	348.8	330.2	337.6	367.3	393.3	348.8	226.3	96.5	40.8	29.7



TEST NUMBER: P592047

CATALOG NUMBER: GRZ-10L-935-ASYMx40-X-UNV-STD-4F

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	326.5	322.8	274.5	270.8	307.9	319.1	278.3	167.0	70.5	29.7	22.3
70°	285.7	282.0	241.2	215.2	241.2	252.3	215.2	122.4	48.2	22.3	18.6
72.5°	218.9	222.6	204.1	167.0	185.5	196.6	159.5	85.3	33.4	18.6	14.8
75°	167.0	163.2	155.8	129.9	141.0	144.7	115.0	59.4	26.0	11.1	11.1
77.5°	111.3	107.6	111.3	96.5	96.5	100.2	77.9	40.8	18.6	7.4	7.4
80°	66.8	70.5	74.2	70.5	63.1	63.1	48.2	26.0	11.1	7.4	3.7
82.5°	33.4	37.1	40.8	40.8	37.1	37.1	29.7	14.8	7.4	3.7	3.7
85°	14.8	14.8	18.6	18.6	14.8	18.6	11.1	7.4	3.7	3.7	3.7
87.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
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: P592047

CATALOG NUMBER: GRZ-10L-935-ASYMx40-X-UNV-STD-4F

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	4326.0	4326.0	4326.0	4326.0	4326.0	4326.0	4326.0	4326.0	4326.0	4326.0
1°	4225.8	4129.4	4129.4	3992.1	3888.2	3825.1	3713.8	3717.5	3661.9	3628.5
2°	4188.7	3981.0	3802.9	3628.5	3465.3	3383.6	3294.6	3205.5	3138.8	3120.2
3°	4136.8	3858.5	3572.8	3339.1	3135.1	3005.2	2875.3	2793.7	2764.0	2701.0
4°	4070.0	3691.6	3328.0	3072.0	2823.4	2645.3	2567.4	2452.4	2419.0	2459.8
5°	3988.4	3532.0	3142.5	2834.5	2589.7	2374.5	2263.2	2203.8	2114.8	2118.5
6°	3895.6	3331.7	2908.7	2563.7	2315.1	2155.6	2040.6	1958.9	1895.9	1929.3
7°	3776.9	3153.6	2704.7	2363.3	2125.9	1955.2	1862.5	1747.5	1677.0	1677.0
8°	3676.7	3001.5	2515.5	2185.3	1947.8	1762.3	1636.2	1558.3	1506.3	1495.2
9°	3513.5	2830.8	2363.3	2033.1	1792.0	1599.1	1458.1	1383.9	1339.4	1331.9
10°	3417.0	2678.7	2240.9	1869.9	1621.3	1458.1	1320.8	1242.9	1198.4	1198.4
11°	3261.2	2526.6	2059.1	1736.3	1487.8	1298.5	1187.2	1124.2	1072.2	1061.1
12°	3116.5	2400.4	1940.4	1628.7	1365.3	1176.1	1072.2	1005.4	968.3	968.3
13°	2979.2	2292.9	1836.5	1498.9	1228.1	1083.4	968.3	894.1	857.0	853.3
14°	2867.9	2144.5	1706.7	1383.9	1124.2	972.1	857.0	805.1	768.0	764.3
15°	2771.5	2044.3	1628.7	1257.7	1016.6	860.7	760.6	716.1	679.0	675.2
16°	2675.0	1944.1	1521.2	1157.6	923.8	786.5	682.7	619.6	597.3	597.3
17°	2597.1	1884.7	1421.0	1075.9	827.4	693.8	597.3	538.0	523.1	500.9
18°	2496.9	1766.0	1331.9	979.5	760.6	612.2	519.4	471.2	441.5	430.4
19°	2400.4	1662.1	1246.6	879.3	675.2	534.3	456.3	400.7	374.7	374.7
20°	2289.1	1599.1	1153.8	805.1	593.6	478.6	385.9	345.0	330.2	330.2
21°	2174.1	1491.5	1050.0	716.1	526.8	408.1	345.0	300.5	282.0	274.5
22.5°	2010.9	1324.5	927.5	612.2	426.7	333.9	278.3	244.9	233.7	230.0
23°	1929.3	1265.2	860.7	578.8	400.7	307.9	259.7	226.3	215.2	211.5
24°	1803.1	1172.4	779.1	504.6	345.0	270.8	222.6	200.3	192.9	189.2
25°	1669.6	1075.9	697.5	448.9	311.7	237.4	200.3	178.1	170.7	167.0
26°	1532.3	968.3	612.2	389.6	274.5	207.8	178.1	159.5	155.8	152.1
27°	1391.3	875.6	541.7	345.0	241.2	189.2	159.5	144.7	137.3	141.0
28°	1257.7	786.5	471.2	304.2	207.8	167.0	144.7	129.9	126.1	122.4
29°	1165.0	701.2	423.0	263.4	185.5	148.4	129.9	118.7	115.0	115.0
30°	1061.1	630.7	374.7	237.4	167.0	133.6	118.7	107.6	107.6	103.9
32.5°	838.5	478.6	274.5	178.1	129.9	103.9	92.8	89.0	85.3	85.3
35°	653.0	356.2	204.1	133.6	100.2	85.3	74.2	74.2	74.2	70.5
37.5°	500.9	263.4	155.8	103.9	81.6	70.5	63.1	63.1	59.4	59.4
40°	382.1	196.6	115.0	81.6	66.8	59.4	51.9	51.9	51.9	51.9
42.5°	285.7	148.4	92.8	66.8	55.7	48.2	44.5	44.5	44.5	44.5
45°	211.5	111.3	70.5	55.7	48.2	44.5	40.8	37.1	40.8	40.8
47.5°	155.8	85.3	55.7	44.5	40.8	37.1	37.1	33.4	33.4	33.4
50°	115.0	66.8	48.2	40.8	37.1	33.4	29.7	29.7	29.7	29.7
52.5°	85.3	51.9	40.8	33.4	29.7	29.7	26.0	26.0	26.0	26.0
55°	63.1	40.8	33.4	29.7	26.0	26.0	22.3	22.3	22.3	22.3
57.5°	48.2	33.4	29.7	26.0	26.0	22.3	22.3	18.6	18.6	18.6
60°	37.1	29.7	22.3	22.3	22.3	22.3	18.6	18.6	18.6	18.6
62.5°	29.7	22.3	18.6	18.6	18.6	18.6	14.8	14.8	14.8	14.8
65°	22.3	18.6	18.6	18.6	18.6	14.8	14.8	11.1	11.1	11.1



TEST NUMBER: P592047

CATALOG NUMBER: GRZ-10L-935-ASYMx40-X-UNV-STD-4F

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	18.6	14.8	14.8	14.8	14.8	14.8	11.1	11.1	11.1	11.1
70°	14.8	11.1	11.1	11.1	11.1	11.1	11.1	7.4	7.4	7.4
72.5°	11.1	11.1	11.1	11.1	11.1	7.4	7.4	7.4	7.4	7.4
75°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	3.7	3.7	3.7
77.5°	7.4	3.7	3.7	3.7	7.4	3.7	3.7	3.7	3.7	3.7
80°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
82.5°	3.7	3.7	3.7	3.7	3.7	3.7	0.0	0.0	0.0	0.0
85°	3.7	3.7	3.7	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)