

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P

Luminaire Tested: **4APN-32L830-X-UNV-NP**

Issue Date: 06/06/2024



Test Information

Test Method: LM-79-08
Report Number: P
Test Lab: INNOVATION CENTER(G2)
Issue Date: 06/06/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-32L830-X-UNV-NP
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light w/ Nature Pattern Lens
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

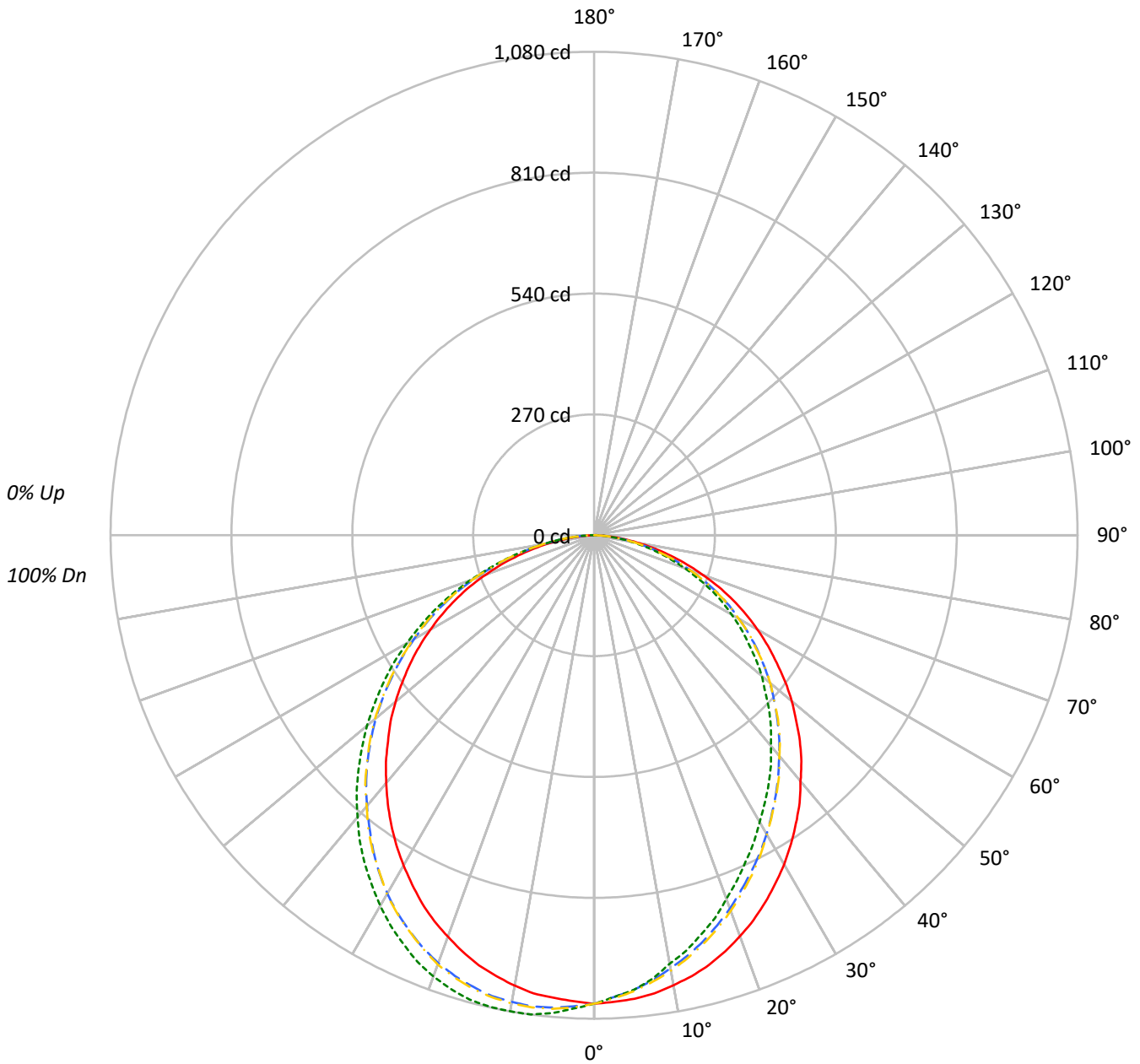
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2806.9 lumens
Efficiency: N/A
Efficacy: 77.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.33
Luminous Opening: Rectangular (W 0.29' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 36.4
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: 25 FT

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Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - · - 90°-270° - · - 135°-315°



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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	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	109	104	100	96	106	102	98	95	98	94	92	94	91	89	90	88	86	86	86	86	84
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	76	72	72	72	72	70
3	90	80	72	65	88	78	71	65	75	69	64	73	67	62	70	65	61	61	61	61	59
4	83	71	62	55	81	70	61	55	67	60	54	65	59	54	63	57	53	53	53	53	51
5	76	63	54	48	74	62	54	48	60	53	47	58	52	47	56	51	46	46	46	46	44
6	70	57	48	42	68	56	48	42	54	47	41	53	46	41	51	45	41	41	41	41	38
7	65	52	43	37	64	51	43	37	49	42	37	48	41	36	47	41	36	36	36	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	33	43	37	32	32	32	32	30
9	57	43	35	30	55	43	35	30	42	35	30	41	34	29	40	34	29	29	29	29	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	27	27	27	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	9656	9656	9656	9656
5°	9627	9441	9606	9924
10°	9562	9106	9573	10116
15°	9489	8821	9499	10258
20°	9358	8486	9370	10299
25°	9208	8171	9244	10257
30°	9044	7884	9069	10179
35°	8854	7654	8894	10068
40°	8642	7400	8698	9897
45°	8481	7214	8495	9717
50°	8276	7017	8309	9499
55°	8017	6761	8075	9236
60°	7776	6554	7798	8913
65°	7471	6281	7471	8529
70°	6962	5813	6930	7952
75°	6331	5276	6245	7133
80°	5473	4532	5287	6105
85°	4266	3387	4012	5018



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	98.9	3.5
10°-20°	280.7	10.0
20°-30°	417.3	14.9
30°-40°	491.8	17.5
40°-50°	500.7	17.8
50°-60°	446.1	15.9
60°-70°	336.1	12.0
70°-80°	186.9	6.7
80°-90°	48.6	1.7
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°	796.8	28.4
0°-40°	1288.6	45.9
0°-60°	2235.4	79.6
0°-90°	2806.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2806.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1047	1047	1047	1047	1047	
5°	1040	1019	1037	1072	1040	99
15°	993	924	994	1074	993	280
25°	904	803	908	1008	904	417
35°	786	680	790	894	786	492
45°	650	553	651	745	650	501
55°	498	420	502	574	498	446
65°	342	288	342	391	342	338
75°	178	148	175	200	178	189
85°	40	32	38	47	40	48
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6
2.5°	1043.1	1043.1	1044.3	1039.5	1033.6	1031.2	1030.1	1028.9	1031.2	1032.4	1031.2
5°	1039.5	1037.2	1034.8	1028.9	1021.8	1017.0	1014.7	1013.5	1015.8	1019.4	1015.8
7.5°	1032.4	1027.7	1023.0	1014.7	1006.4	999.3	995.7	993.4	995.7	999.3	996.9
10°	1020.6	1014.7	1007.6	998.1	986.2	978.0	974.4	970.9	972.0	972.0	972.0
12.5°	1008.7	1000.5	992.2	980.3	967.3	957.8	951.9	947.2	949.5	950.7	950.7
15°	993.4	982.7	970.9	957.8	944.8	934.1	927.0	922.3	923.5	923.5	924.7
17.5°	974.4	962.6	950.7	935.3	919.9	908.1	899.8	893.9	896.3	897.4	898.6
20°	953.1	940.1	927.0	910.5	893.9	880.9	872.6	865.5	864.3	864.3	865.5
22.5°	930.6	916.4	901.0	883.2	865.5	851.3	843.0	835.9	834.7	834.7	835.9
25°	904.5	889.2	873.8	856.0	837.1	822.8	812.2	805.1	803.9	802.7	805.1
27.5°	877.3	861.9	846.5	828.8	808.6	794.4	783.8	776.7	774.3	773.1	775.5
30°	848.9	831.1	814.6	795.6	777.8	763.6	753.0	744.7	742.3	740.0	742.3
32.5°	818.1	800.3	782.6	763.6	745.9	731.7	721.0	712.7	710.4	709.2	711.5
35°	786.1	768.4	751.8	732.9	715.1	700.9	690.2	683.1	680.8	679.6	680.8
37.5°	754.2	736.4	719.8	700.9	683.1	668.9	658.3	651.1	650.0	648.8	650.0
40°	717.5	702.1	685.5	667.7	650.0	635.8	627.5	619.2	616.8	614.4	618.0
42.5°	685.5	670.1	653.5	636.9	619.2	605.0	595.5	588.4	586.0	584.8	586.0
45°	650.0	633.4	616.8	601.4	584.8	571.8	562.3	555.2	554.1	552.9	554.1
47.5°	612.1	597.9	583.7	568.3	551.7	538.7	530.4	523.3	520.9	518.5	520.9
50°	576.6	562.3	548.1	533.9	518.5	506.7	498.4	491.3	490.1	488.9	490.1
52.5°	538.7	524.5	511.4	497.2	484.2	472.4	464.1	458.1	457.0	455.8	457.0
55°	498.4	486.6	474.7	462.9	449.9	439.2	432.1	425.0	422.6	420.3	422.6
57.5°	460.5	449.9	438.0	426.2	414.3	404.9	397.8	391.9	390.7	389.5	390.7
60°	421.4	412.0	401.3	390.7	378.8	369.4	363.5	358.8	356.4	355.2	356.4
62.5°	382.4	372.9	364.7	354.0	343.4	336.3	330.4	325.6	323.3	322.1	323.3
65°	342.2	333.9	325.6	316.2	307.9	300.8	294.8	290.1	288.9	287.7	287.7
67.5°	300.8	293.7	286.5	278.3	268.8	261.7	255.8	252.2	251.0	249.8	251.0
70°	258.1	252.2	245.1	238.0	230.9	225.0	221.4	217.9	216.7	215.5	215.5
72.5°	217.9	213.1	207.2	201.3	195.4	189.5	185.9	183.5	182.3	181.2	181.2
75°	177.6	172.9	169.3	164.6	158.7	155.1	151.6	149.2	148.0	148.0	148.0
77.5°	139.7	136.2	132.6	127.9	124.3	120.8	118.4	117.2	116.0	116.0	116.0
80°	103.0	100.6	98.3	95.9	92.4	88.8	87.6	86.4	85.3	85.3	85.3
82.5°	69.9	68.7	66.3	63.9	61.6	60.4	59.2	58.0	58.0	58.0	58.0
85°	40.3	39.1	37.9	36.7	35.5	35.5	34.3	33.2	32.0	32.0	32.0
87.5°	16.6	16.6	16.6	15.4	14.2	14.2	14.2	14.2	14.2	14.2	14.2
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):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6
2.5°	1028.9	1031.2	1033.6	1037.2	1040.7	1044.3	1043.1	1041.9	1046.6	1052.6	1053.7
5°	1013.5	1015.8	1019.4	1025.3	1031.2	1036.0	1037.2	1037.2	1046.6	1054.9	1057.3
7.5°	994.5	998.1	1002.8	1008.7	1017.0	1024.1	1027.7	1032.4	1041.9	1052.6	1057.3
10°	970.9	976.8	983.9	992.2	1000.5	1008.7	1015.8	1021.8	1033.6	1045.5	1052.6
12.5°	949.5	955.5	962.6	972.0	982.7	993.4	1000.5	1008.7	1023.0	1037.2	1045.5
15°	925.9	931.8	940.1	949.5	961.4	973.2	983.9	994.5	1008.7	1024.1	1033.6
17.5°	899.8	905.7	914.0	925.9	938.9	951.9	963.7	975.6	992.2	1008.7	1019.4
20°	867.8	876.1	886.8	898.6	914.0	929.4	941.3	954.3	972.0	989.8	1001.6
22.5°	837.1	845.3	857.2	871.4	888.0	904.5	918.8	933.0	951.9	969.7	982.7
25°	807.4	816.9	828.8	843.0	858.4	874.9	891.5	908.1	927.0	946.0	959.0
27.5°	777.8	786.1	798.0	812.2	829.9	846.5	863.1	879.7	899.8	919.9	934.1
30°	744.7	754.2	764.8	779.0	798.0	816.9	833.5	851.3	871.4	891.5	905.7
32.5°	713.9	722.2	732.9	747.1	766.0	785.0	802.7	821.7	840.6	860.7	874.9
35°	683.1	691.4	702.1	716.3	735.2	754.2	771.9	789.7	808.6	827.6	841.8
37.5°	652.3	660.6	671.3	685.5	703.2	722.2	738.8	756.5	775.5	794.4	807.4
40°	620.4	628.7	636.9	651.1	668.9	687.9	704.4	722.2	741.1	760.1	773.1
42.5°	588.4	596.7	607.3	621.5	638.1	654.7	671.3	687.9	705.6	723.4	736.4
45°	556.4	563.5	574.2	587.2	603.8	619.2	635.8	651.1	668.9	685.5	698.5
47.5°	523.3	530.4	538.7	551.7	568.3	584.8	601.4	616.8	632.2	648.8	660.6
50°	491.3	498.4	507.9	519.7	535.1	550.5	564.7	578.9	594.3	609.7	620.4
52.5°	458.1	465.2	473.5	485.4	498.4	512.6	525.6	539.8	554.1	568.3	578.9
55°	425.0	429.7	436.8	447.5	461.7	475.9	488.9	502.0	515.0	526.8	537.5
57.5°	391.9	397.8	406.0	415.5	427.4	439.2	451.0	462.9	474.7	486.6	496.0
60°	358.8	363.5	369.4	377.7	389.5	400.1	412.0	422.6	433.3	443.9	452.2
62.5°	324.4	329.2	335.1	343.4	352.8	362.3	372.9	382.4	391.9	401.3	409.6
65°	288.9	293.7	299.6	306.7	315.0	323.3	332.7	342.2	349.3	356.4	364.7
67.5°	252.2	256.9	262.9	268.8	275.9	284.2	292.5	300.8	307.9	315.0	320.9
70°	216.7	220.2	226.2	230.9	236.8	242.7	249.8	256.9	261.7	267.6	274.7
72.5°	182.3	185.9	190.6	195.4	198.9	203.7	210.8	216.7	222.6	229.7	233.3
75°	149.2	151.6	155.1	158.7	162.2	165.8	170.5	175.2	180.0	183.5	188.3
77.5°	116.0	118.4	122.0	124.3	126.7	129.1	132.6	136.2	139.7	142.1	146.8
80°	85.3	87.6	90.0	92.4	94.7	97.1	98.3	99.5	104.2	107.8	110.1
82.5°	58.0	59.2	60.4	62.8	63.9	65.1	66.3	66.3	68.7	71.0	74.6
85°	33.2	34.3	35.5	35.5	35.5	35.5	36.7	37.9	39.1	41.4	43.8
87.5°	13.0	13.0	14.2	14.2	14.2	14.2	14.2	14.2	15.4	17.8	18.9
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):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6	1046.6
2.5°	1052.6	1053.7	1056.1	1057.3	1058.5	1058.5	1059.7	1060.8	1058.5	1056.1	1054.9
5°	1058.5	1059.7	1063.2	1066.8	1069.1	1071.5	1070.3	1069.1	1066.8	1063.2	1060.8
7.5°	1059.7	1063.2	1066.8	1071.5	1075.1	1079.8	1077.4	1075.1	1070.3	1065.6	1062.0
10°	1056.1	1060.8	1066.8	1072.7	1076.2	1079.8	1077.4	1075.1	1070.3	1064.4	1059.7
12.5°	1051.4	1057.3	1064.4	1070.3	1073.9	1078.6	1075.1	1071.5	1065.6	1059.7	1053.7
15°	1040.7	1047.8	1056.1	1063.2	1069.1	1073.9	1070.3	1067.9	1060.8	1052.6	1044.3
17.5°	1027.7	1037.2	1045.5	1053.7	1058.5	1063.2	1060.8	1058.5	1050.2	1040.7	1031.2
20°	1012.3	1021.8	1030.1	1038.3	1044.3	1049.0	1045.5	1041.9	1033.6	1025.3	1015.8
22.5°	993.4	1002.8	1012.3	1020.6	1026.5	1031.2	1026.5	1020.6	1012.3	1004.0	994.5
25°	969.7	980.3	991.0	999.3	1002.8	1007.6	1002.8	998.1	989.8	981.5	970.9
27.5°	946.0	956.6	967.3	975.6	979.1	983.9	979.1	974.4	966.1	957.8	947.2
30°	918.8	929.4	940.1	948.4	951.9	955.5	950.7	946.0	938.9	930.6	919.9
32.5°	888.0	898.6	906.9	915.2	919.9	924.7	919.9	916.4	908.1	897.4	886.8
35°	854.8	865.5	876.1	884.4	889.2	893.9	888.0	882.0	874.9	866.7	857.2
37.5°	818.1	829.9	841.8	851.3	854.8	859.5	854.8	848.9	841.8	833.5	822.8
40°	783.8	794.4	805.1	814.6	818.1	821.7	816.9	812.2	803.9	795.6	785.0
42.5°	748.2	758.9	768.4	776.7	780.2	785.0	780.2	774.3	768.4	761.3	751.8
45°	710.4	721.0	729.3	737.6	741.1	744.7	740.0	734.0	728.1	722.2	712.7
47.5°	671.3	680.8	689.0	697.3	699.7	703.2	698.5	695.0	689.0	683.1	674.8
50°	631.0	640.5	648.8	655.9	658.3	661.8	657.1	652.3	647.6	642.9	635.8
52.5°	589.6	597.9	606.2	613.3	615.6	618.0	613.3	608.5	603.8	599.0	591.9
55°	546.9	555.2	563.5	569.4	571.8	574.2	569.4	565.9	561.2	557.6	550.5
57.5°	504.3	512.6	519.7	525.6	528.0	530.4	525.6	520.9	517.3	513.8	507.9
60°	460.5	468.8	474.7	479.5	481.8	483.0	478.3	474.7	472.4	470.0	464.1
62.5°	417.9	423.8	429.7	433.3	435.6	436.8	433.3	430.9	428.5	426.2	421.4
65°	372.9	380.0	384.8	388.3	389.5	390.7	387.1	384.8	382.4	380.0	376.5
67.5°	328.0	333.9	337.5	341.0	342.2	342.2	342.2	341.0	338.6	335.1	331.5
70°	283.0	287.7	291.3	293.7	294.8	294.8	292.5	290.1	290.1	288.9	286.5
72.5°	236.8	240.4	242.7	245.1	245.1	245.1	245.1	246.3	245.1	242.7	239.2
75°	193.0	196.6	198.9	200.1	200.1	200.1	200.1	201.3	200.1	198.9	196.6
77.5°	151.6	153.9	155.1	156.3	156.3	156.3	157.5	158.7	157.5	156.3	155.1
80°	112.5	113.7	114.9	116.0	114.9	114.9	116.0	118.4	117.2	116.0	114.9
82.5°	77.0	78.1	79.3	79.3	80.5	81.7	81.7	81.7	81.7	80.5	79.3
85°	46.2	47.4	47.4	47.4	47.4	47.4	48.5	49.7	49.7	48.5	48.5
87.5°	21.3	22.5	21.3	20.1	18.9	18.9	21.3	23.7	23.7	22.5	22.5
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: P
 CATALOG NUMBER: 4APN-32L830-X-UNV-NP

CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	1046.6	1046.6	1046.6	1046.6
2.5°	1056.1	1054.9	1049.0	1043.1
5°	1059.7	1056.1	1047.8	1039.5
7.5°	1059.7	1054.9	1043.1	1032.4
10°	1053.7	1046.6	1033.6	1020.6
12.5°	1046.6	1038.3	1023.0	1008.7
15°	1036.0	1026.5	1009.9	993.4
17.5°	1020.6	1008.7	992.2	974.4
20°	1005.2	992.2	972.0	953.1
22.5°	983.9	972.0	950.7	930.6
25°	960.2	947.2	925.9	904.5
27.5°	935.3	919.9	898.6	877.3
30°	906.9	891.5	870.2	848.9
32.5°	876.1	861.9	840.6	818.1
35°	845.3	829.9	808.6	786.1
37.5°	811.0	796.8	775.5	754.2
40°	774.3	760.1	738.8	717.5
42.5°	740.0	726.9	705.6	685.5
45°	702.1	689.0	668.9	650.0
47.5°	663.0	650.0	631.0	612.1
50°	625.1	612.1	594.3	576.6
52.5°	582.5	571.8	555.2	538.7
55°	541.0	530.4	513.8	498.4
57.5°	499.6	490.1	474.7	460.5
60°	455.8	446.3	434.5	421.4
62.5°	414.3	406.0	394.2	382.4
65°	370.6	363.5	352.8	342.2
67.5°	325.6	319.7	310.2	300.8
70°	280.6	273.5	266.4	258.1
72.5°	235.6	232.1	225.0	217.9
75°	193.0	189.5	183.5	177.6
77.5°	152.7	149.2	144.5	139.7
80°	112.5	110.1	106.6	103.0
82.5°	78.1	75.8	73.4	69.9
85°	47.4	45.0	42.6	40.3
87.5°	21.3	20.1	17.8	16.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)