

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: HALO COMMERCIAL

Report Number: P242037

Luminaire Tested: **PRS440D010-S4M24-41SWWMW-4000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242037
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1802-584-63)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PRS440D010-S4M24-41SWWMW-4000K
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM MATTE WHITE
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2217.7 lumens
Efficiency: N/A
Efficacy: 58.4 lumens/watt
Spacing Criteria (0/90/45): 1 / 0.97 / 1.07
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')
CIE Type: Direct

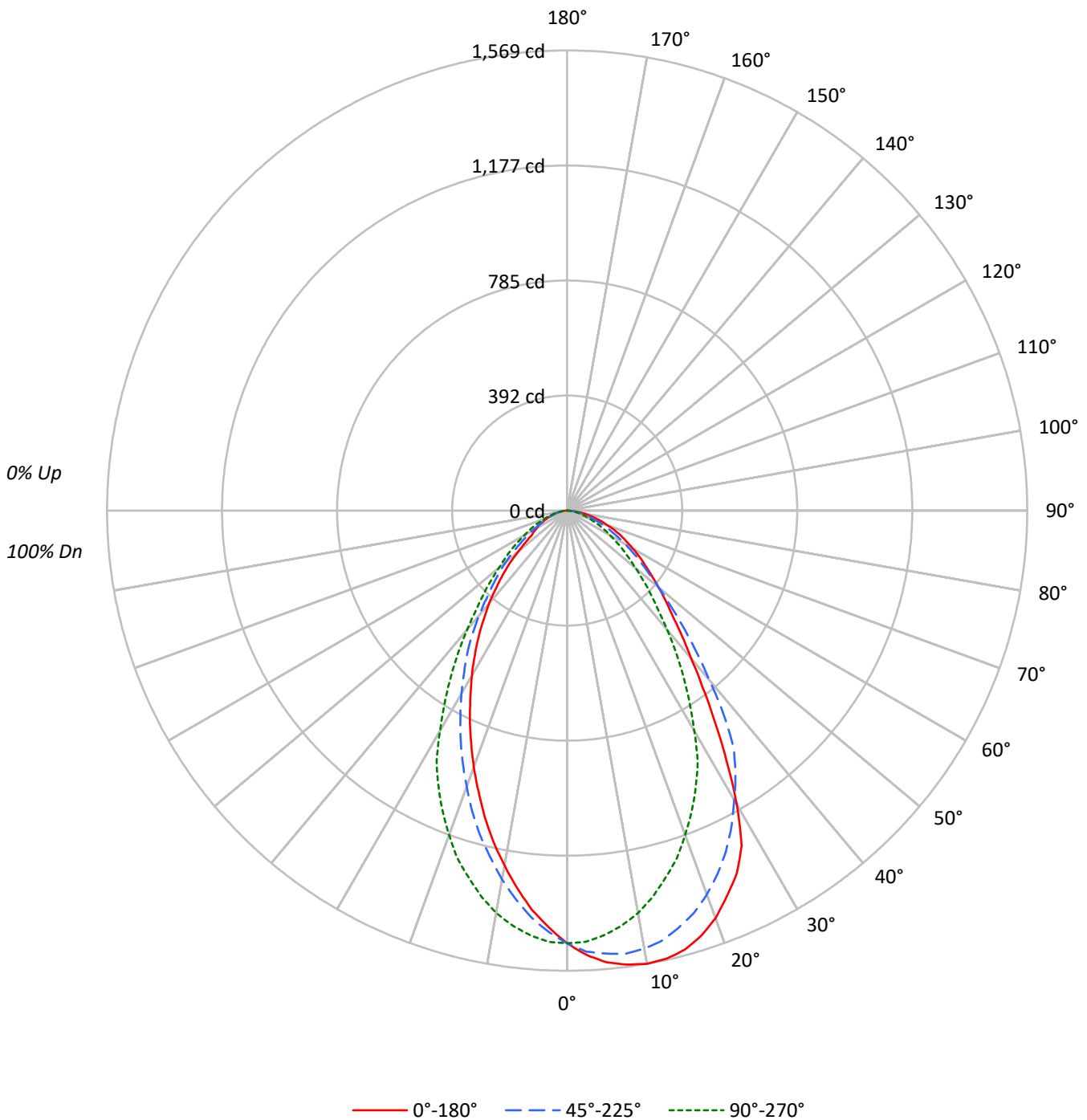
Input Watts (W): 38
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	107	104	101	109	105	102	99	101	98	96	97	95	93	94	92	91	89					89			
2	103	97	91	86	101	95	90	85	91	87	84	88	85	82	85	82	80	78					78			
3	96	87	81	75	94	86	80	75	83	78	73	80	76	72	78	74	71	69					69			
4	89	79	72	66	87	78	71	66	76	70	65	73	68	64	71	67	63	62					62			
5	83	72	65	59	81	71	64	59	69	63	58	67	62	58	66	61	57	55					55			
6	78	66	59	53	76	65	58	53	64	57	53	62	57	52	61	56	52	50					50			
7	73	61	54	48	71	60	53	48	59	53	48	58	52	48	56	51	47	45					45			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	44	53	47	43	42					42			
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38					38			
10	61	49	42	37	60	49	42	37	48	41	37	47	41	37	46	41	37	35					35			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	112932	112932	112932
5°	118819	111642	105042
10°	121934	108285	95515
15°	122835	102708	85837
20°	120489	95841	75762
25°	115460	87699	66248
30°	102341	76594	57441
35°	82024	64569	49216
40°	65688	52998	41427
45°	54990	43668	33557
50°	48478	36034	25793
55°	43371	30907	19937
60°	39450	25734	18294
65°	36531	22332	16916
70°	32607	18396	15039
75°	29840	15467	13249
80°	26360	13180	11505
85°	16423	9836	9836



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	137.0	6.2
10°-20°	366.4	16.5
20°-30°	486.5	21.9
30°-40°	458.4	20.7
40°-50°	335.4	15.1
50°-60°	220.3	9.9
60°-70°	132.8	6.0
70°-80°	65.4	2.9
80°-90°	15.6	0.7
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°	989.9	44.6
0°-40°	1448.2	65.3
0°-60°	2004.0	90.4
0°-90°	2217.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2217.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1475	1475	1475	1475	1475	
5°	1546	1516	1453	1393	1367	148
15°	1550	1472	1296	1147	1083	435
25°	1367	1281	1038	859	784	621
35°	878	990	691	594	527	552
45°	508	557	403	359	310	399
55°	325	306	232	194	149	293
65°	202	164	123	90	93	200
75°	101	75	52	45	45	107
85°	19	15	11	11	11	25
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4
2.5°	1516.5	1516.5	1516.5	1516.5	1512.8	1512.8	1512.8	1509.0	1509.0	1505.3	1505.3
5°	1546.4	1546.4	1542.7	1542.7	1538.9	1538.9	1535.2	1531.5	1527.7	1524.0	1516.5
7.5°	1561.3	1561.3	1557.6	1557.6	1553.9	1553.9	1550.1	1546.4	1538.9	1531.5	1524.0
10°	1568.8	1565.1	1565.1	1561.3	1557.6	1553.9	1550.1	1546.4	1535.2	1527.7	1516.5
12.5°	1565.1	1561.3	1561.3	1553.9	1550.1	1546.4	1542.7	1535.2	1524.0	1512.8	1501.6
15°	1550.1	1546.4	1542.7	1538.9	1531.5	1527.7	1524.0	1512.8	1501.6	1486.6	1471.7
17.5°	1520.2	1516.5	1516.5	1509.0	1501.6	1497.8	1494.1	1482.9	1468.0	1453.0	1438.1
20°	1479.2	1475.4	1471.7	1468.0	1460.5	1456.7	1453.0	1441.8	1426.9	1411.9	1393.2
22.5°	1423.1	1419.4	1419.4	1415.7	1408.2	1404.5	1400.7	1389.5	1378.3	1359.6	1341.0
25°	1367.1	1363.4	1359.6	1355.9	1348.4	1341.0	1337.2	1326.0	1314.8	1303.6	1281.2
27.5°	1288.7	1292.4	1292.4	1288.7	1284.9	1281.2	1277.5	1262.5	1247.6	1232.6	1214.0
30°	1157.9	1150.5	1157.9	1169.1	1180.3	1184.1	1195.3	1195.3	1180.3	1161.7	1139.2
32.5°	1012.3	1016.0	1019.7	1034.7	1049.6	1053.3	1060.8	1083.2	1101.9	1090.7	1068.3
35°	877.8	881.5	889.0	900.2	911.4	930.1	937.5	956.2	974.9	997.3	989.8
37.5°	758.3	762.0	769.5	776.9	795.6	803.1	818.0	833.0	862.8	881.5	877.8
40°	657.4	661.1	664.9	672.3	694.8	698.5	706.0	728.4	747.0	762.0	754.5
42.5°	579.0	575.2	582.7	590.2	601.4	605.1	612.6	627.5	642.5	649.9	649.9
45°	508.0	511.7	515.5	522.9	526.7	534.1	537.9	549.1	552.8	556.6	556.6
47.5°	455.7	455.7	459.4	463.2	466.9	470.6	474.4	478.1	478.1	478.1	474.4
50°	407.1	407.1	410.9	414.6	414.6	418.3	418.3	418.3	414.6	410.9	407.1
52.5°	362.3	362.3	366.1	369.8	369.8	369.8	369.8	366.1	362.3	358.6	351.1
55°	325.0	325.0	328.7	328.7	328.7	328.7	328.7	321.2	313.8	310.0	306.3
57.5°	291.3	291.3	291.3	291.3	291.3	291.3	287.6	280.1	276.4	268.9	265.2
60°	257.7	257.7	257.7	257.7	257.7	254.0	250.3	246.5	239.1	231.6	227.8
62.5°	227.8	227.8	227.8	227.8	224.1	220.4	220.4	212.9	209.2	201.7	194.2
65°	201.7	201.7	198.0	198.0	194.2	190.5	190.5	183.0	179.3	171.8	164.4
67.5°	175.6	171.8	171.8	171.8	168.1	164.4	160.6	156.9	153.1	145.7	138.2
70°	145.7	145.7	149.4	145.7	141.9	138.2	138.2	130.7	127.0	123.3	115.8
72.5°	123.3	123.3	123.3	119.5	119.5	115.8	112.1	108.3	104.6	100.9	93.4
75°	100.9	100.9	100.9	97.1	93.4	93.4	93.4	85.9	85.9	78.4	74.7
77.5°	78.4	78.4	78.4	74.7	74.7	74.7	71.0	67.2	63.5	63.5	59.8
80°	59.8	59.8	56.0	56.0	52.3	52.3	52.3	48.6	48.6	44.8	41.1
82.5°	41.1	37.4	37.4	37.4	37.4	37.4	33.6	33.6	29.9	29.9	26.1
85°	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	14.9	14.9	14.9
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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4
2.5°	1497.8	1497.8	1494.1	1490.4	1486.6	1486.6	1482.9	1479.2	1475.4	1471.7	1464.2
5°	1512.8	1505.3	1497.8	1490.4	1490.4	1486.6	1475.4	1468.0	1460.5	1453.0	1445.5
7.5°	1512.8	1501.6	1494.1	1482.9	1479.2	1471.7	1460.5	1449.3	1438.1	1426.9	1415.7
10°	1505.3	1490.4	1479.2	1464.2	1456.7	1449.3	1434.3	1419.4	1404.5	1393.2	1374.6
12.5°	1482.9	1468.0	1453.0	1434.3	1426.9	1419.4	1400.7	1382.0	1367.1	1348.4	1333.5
15°	1453.0	1438.1	1419.4	1400.7	1389.5	1382.0	1359.6	1337.2	1314.8	1296.1	1277.5
17.5°	1419.4	1397.0	1378.3	1355.9	1344.7	1329.7	1307.3	1284.9	1262.5	1243.8	1221.4
20°	1370.8	1352.2	1326.0	1299.9	1288.7	1273.7	1251.3	1225.2	1202.7	1176.6	1154.2
22.5°	1322.3	1296.1	1270.0	1240.1	1228.9	1214.0	1187.8	1157.9	1135.5	1109.4	1083.2
25°	1258.8	1232.6	1206.5	1180.3	1161.7	1150.5	1124.3	1094.4	1068.3	1038.4	1012.3
27.5°	1191.5	1165.4	1139.2	1109.4	1094.4	1079.5	1045.9	1016.0	986.1	963.7	933.8
30°	1116.8	1094.4	1064.5	1023.5	1004.8	989.8	952.5	918.9	889.0	866.6	847.9
32.5°	1042.1	1008.5	967.4	926.3	907.7	889.0	851.6	821.8	799.3	776.9	754.5
35°	945.0	907.7	870.3	833.0	814.3	795.6	765.7	735.8	709.7	691.0	672.3
37.5°	855.4	814.3	773.2	739.6	720.9	706.0	672.3	649.9	627.5	608.8	590.2
40°	747.0	724.6	679.8	649.9	631.3	616.3	586.4	564.0	545.3	530.4	515.5
42.5°	642.5	631.3	593.9	564.0	549.1	537.9	511.7	493.1	474.4	459.4	452.0
45°	549.1	534.1	519.2	489.3	478.1	466.9	444.5	425.8	410.9	403.4	392.2
47.5°	470.6	459.4	444.5	422.1	410.9	403.4	384.7	369.8	358.6	351.1	343.6
50°	399.7	392.2	381.0	366.1	354.8	347.4	332.4	321.2	310.0	302.6	298.8
52.5°	343.6	336.2	325.0	313.8	306.3	298.8	287.6	276.4	272.7	265.2	257.7
55°	295.1	287.6	280.1	268.9	265.2	261.5	250.3	242.8	235.3	231.6	227.8
57.5°	257.7	250.3	239.1	231.6	227.8	224.1	216.6	209.2	201.7	198.0	194.2
60°	220.4	212.9	205.4	198.0	194.2	190.5	186.8	179.3	171.8	168.1	168.1
62.5°	190.5	183.0	175.6	168.1	168.1	164.4	156.9	153.1	149.4	145.7	141.9
65°	160.6	153.1	149.4	141.9	138.2	138.2	134.5	127.0	123.3	123.3	119.5
67.5°	134.5	130.7	123.3	119.5	115.8	115.8	108.3	108.3	104.6	100.9	97.1
70°	112.1	104.6	100.9	97.1	97.1	93.4	89.6	89.6	85.9	82.2	78.4
72.5°	89.6	85.9	82.2	78.4	78.4	74.7	74.7	71.0	67.2	67.2	63.5
75°	71.0	67.2	67.2	59.8	59.8	59.8	56.0	56.0	52.3	52.3	48.6
77.5°	56.0	52.3	48.6	48.6	44.8	44.8	44.8	41.1	41.1	41.1	37.4
80°	37.4	37.4	33.6	33.6	33.6	33.6	29.9	29.9	29.9	29.9	26.1
82.5°	26.1	22.4	22.4	22.4	22.4	22.4	18.7	18.7	18.7	18.7	18.7
85°	14.9	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4
2.5°	1460.5	1456.7	1453.0	1453.0	1449.3	1445.5	1445.5	1441.8	1438.1	1434.3	1430.6
5°	1438.1	1430.6	1423.1	1419.4	1415.7	1411.9	1404.5	1397.0	1393.2	1385.8	1382.0
7.5°	1404.5	1393.2	1385.8	1378.3	1374.6	1363.4	1355.9	1348.4	1337.2	1333.5	1326.0
10°	1363.4	1348.4	1333.5	1329.7	1322.3	1311.1	1299.9	1284.9	1277.5	1270.0	1262.5
12.5°	1314.8	1299.9	1281.2	1273.7	1266.2	1251.3	1236.4	1225.2	1210.2	1202.7	1191.5
15°	1258.8	1240.1	1221.4	1214.0	1206.5	1187.8	1172.9	1157.9	1146.7	1131.8	1120.6
17.5°	1199.0	1176.6	1154.2	1146.7	1139.2	1120.6	1105.6	1087.0	1075.8	1060.8	1049.6
20°	1131.8	1109.4	1087.0	1083.2	1068.3	1049.6	1030.9	1016.0	1001.0	989.8	974.9
22.5°	1060.8	1038.4	1019.7	1008.5	997.3	978.6	960.0	945.0	930.1	911.4	900.2
25°	993.6	967.4	945.0	941.3	926.3	911.4	892.7	874.0	859.1	844.2	833.0
27.5°	915.1	896.5	874.0	862.8	855.4	836.7	821.8	803.1	788.1	773.2	762.0
30°	825.5	806.8	791.9	784.4	776.9	765.7	747.0	735.8	720.9	706.0	694.8
32.5°	739.6	728.4	713.4	706.0	702.2	687.3	679.8	668.6	653.7	642.5	631.3
35°	653.7	646.2	631.3	631.3	623.8	616.3	608.8	601.4	593.9	582.7	571.5
37.5°	579.0	571.5	560.3	552.8	552.8	545.3	541.6	534.1	530.4	522.9	515.5
40°	508.0	496.8	489.3	485.6	481.8	478.1	470.6	466.9	466.9	463.2	455.7
42.5°	437.0	433.3	425.8	422.1	425.8	418.3	418.3	414.6	407.1	403.4	399.7
45°	384.7	377.3	377.3	373.5	373.5	369.8	366.1	362.3	358.6	351.1	351.1
47.5°	336.2	332.4	328.7	328.7	325.0	325.0	321.2	317.5	313.8	310.0	302.6
50°	295.1	291.3	287.6	287.6	283.9	283.9	280.1	276.4	272.7	265.2	257.7
52.5°	257.7	254.0	250.3	250.3	246.5	246.5	242.8	235.3	231.6	227.8	220.4
55°	224.1	220.4	216.6	216.6	212.9	212.9	209.2	201.7	194.2	190.5	183.0
57.5°	190.5	190.5	186.8	186.8	183.0	179.3	175.6	168.1	164.4	160.6	153.1
60°	164.4	160.6	160.6	156.9	156.9	153.1	145.7	141.9	134.5	130.7	123.3
62.5°	138.2	138.2	134.5	130.7	130.7	123.3	119.5	115.8	112.1	104.6	108.3
65°	115.8	112.1	112.1	108.3	108.3	100.9	97.1	93.4	89.6	89.6	93.4
67.5°	97.1	93.4	89.6	89.6	85.9	82.2	78.4	78.4	78.4	78.4	78.4
70°	78.4	74.7	71.0	71.0	71.0	67.2	63.5	63.5	63.5	67.2	67.2
72.5°	63.5	59.8	56.0	56.0	52.3	52.3	52.3	52.3	52.3	56.0	56.0
75°	48.6	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8
77.5°	37.4	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6
80°	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1
82.5°	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7
85°	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
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: P242037

CATALOG NUMBER: PRS440D010-S4M24-41SWWMW-4000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4	1475.4
2.5°	1430.6	1430.6	1430.6	1426.9	1426.9	1426.9	1426.9	1423.1
5°	1378.3	1378.3	1374.6	1374.6	1370.8	1370.8	1370.8	1367.1
7.5°	1318.5	1314.8	1314.8	1311.1	1307.3	1303.6	1303.6	1299.9
10°	1255.0	1247.6	1240.1	1243.8	1236.4	1236.4	1228.9	1228.9
12.5°	1184.1	1176.6	1176.6	1169.1	1161.7	1161.7	1157.9	1157.9
15°	1109.4	1101.9	1098.2	1094.4	1090.7	1087.0	1087.0	1083.2
17.5°	1034.7	1030.9	1027.2	1023.5	1016.0	1012.3	1008.5	1004.8
20°	963.7	952.5	948.8	948.8	937.5	937.5	930.1	930.1
22.5°	889.0	877.8	877.8	874.0	866.6	859.1	859.1	855.4
25°	818.0	810.5	803.1	799.3	795.6	788.1	788.1	784.4
27.5°	747.0	739.6	735.8	732.1	724.6	720.9	717.2	713.4
30°	683.5	672.3	668.6	664.9	657.4	653.7	649.9	649.9
32.5°	620.1	608.8	608.8	601.4	597.6	590.2	586.4	586.4
35°	560.3	552.8	545.3	541.6	534.1	534.1	526.7	526.7
37.5°	500.5	493.1	493.1	485.6	478.1	474.4	470.6	466.9
40°	448.2	437.0	437.0	429.6	422.1	418.3	414.6	414.6
42.5°	395.9	384.7	381.0	377.3	369.8	362.3	362.3	358.6
45°	343.6	336.2	332.4	328.7	321.2	313.8	313.8	310.0
47.5°	295.1	291.3	283.9	280.1	276.4	268.9	265.2	265.2
50°	254.0	250.3	242.8	239.1	231.6	224.1	220.4	216.6
52.5°	212.9	209.2	205.4	201.7	194.2	186.8	183.0	179.3
55°	179.3	175.6	168.1	168.1	160.6	156.9	153.1	149.4
57.5°	145.7	141.9	138.2	138.2	134.5	134.5	134.5	134.5
60°	119.5	123.3	123.3	123.3	123.3	123.3	123.3	119.5
62.5°	108.3	108.3	108.3	108.3	108.3	108.3	108.3	108.3
65°	93.4	93.4	93.4	93.4	93.4	93.4	93.4	93.4
67.5°	78.4	78.4	82.2	78.4	78.4	78.4	78.4	78.4
70°	67.2	67.2	67.2	67.2	67.2	67.2	67.2	67.2
72.5°	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0
75°	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8
77.5°	37.4	37.4	33.6	33.6	37.4	37.4	33.6	37.4
80°	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1
82.5°	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7
85°	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
87.5°	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

(END OF REPORT)