

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: P242052

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

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242052
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1802-584-64)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PRS440D010-S4M24-41SWWMB-4000K
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM MATTE BLACK
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1702.5 lumens
Efficiency: N/A
Efficacy: 44.8 lumens/watt
Spacing Criteria (0/90/45): 0.96 / 0.94 / 1.03
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')
CIE Type: Direct

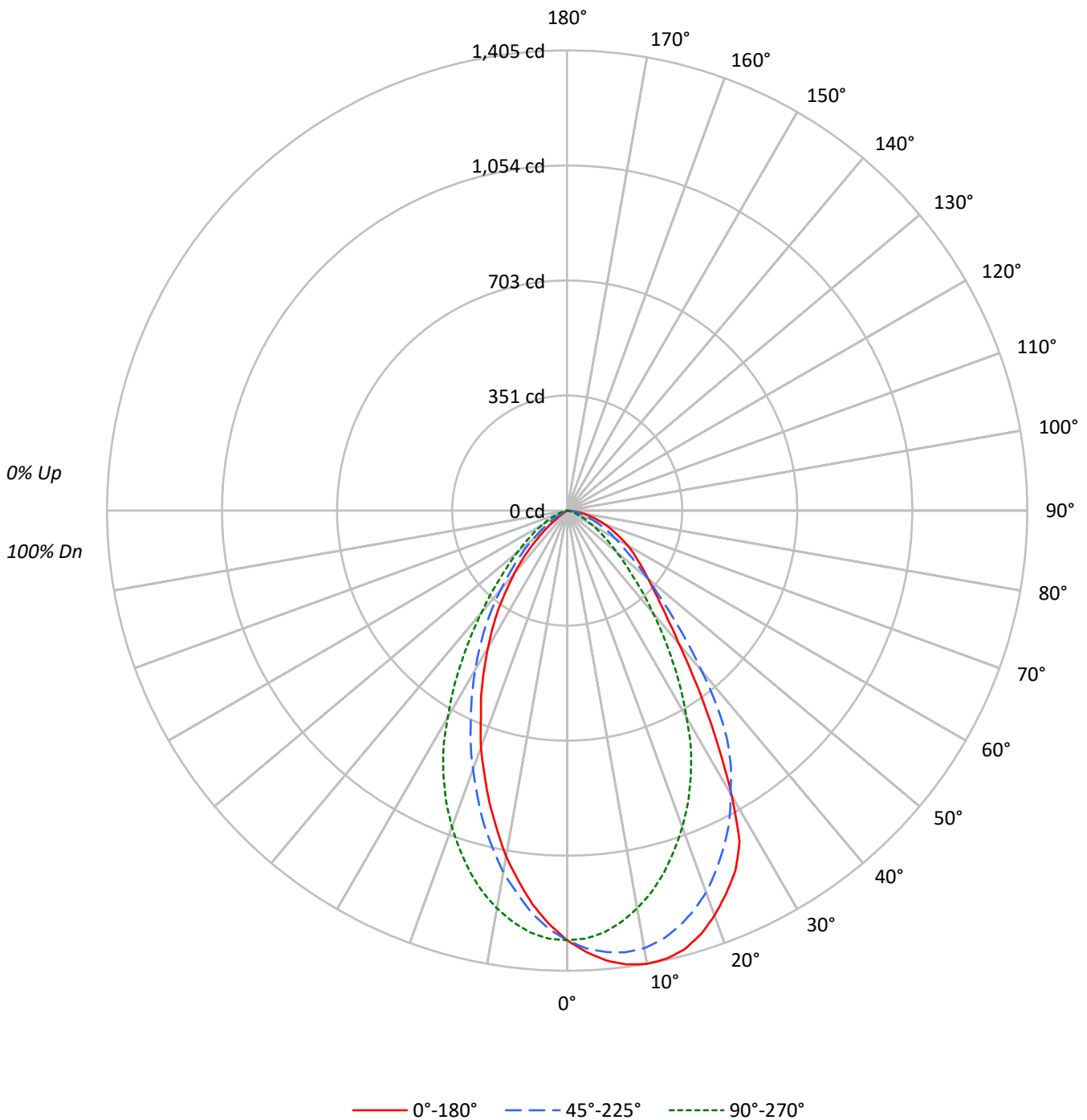
Input Watts (W): 38
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	108	105	103	109	106	104	101	102	100	98	98	97	95	95	93	92	90					90			
2	105	99	94	89	102	97	92	88	93	90	86	90	87	84	88	85	83	81					81			
3	98	90	84	79	96	88	83	78	86	81	77	83	79	76	81	77	74	73					73			
4	91	82	75	70	89	81	75	70	79	73	69	77	72	68	75	71	67	65					65			
5	86	75	68	63	84	74	68	63	73	67	62	71	66	62	69	65	61	59					59			
6	80	70	62	57	79	69	62	57	67	61	57	66	60	56	64	59	56	54					54			
7	76	64	57	52	74	64	57	52	62	56	52	61	56	51	60	55	51	50					50			
8	71	60	53	48	70	59	53	48	58	52	48	57	51	47	56	51	47	46					46			
9	67	56	49	44	66	55	49	44	54	48	44	53	48	44	52	47	44	42					42			
10	64	52	46	41	62	52	45	41	51	45	41	50	45	41	49	44	41	39					39			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	100410	100410	100410
5°	105964	99356	92756
10°	109226	95857	83367
15°	109879	90623	72857
20°	107163	83720	62713
25°	102589	75436	52397
30°	88862	64415	42610
35°	68802	52384	33873
40°	53028	40708	25020
45°	43689	30743	16584
50°	38272	23590	8455
55°	34910	17949	1988
60°	32607	13732	566
65°	29776	10161	0
70°	27594	6692	0
75°	24310	4407	0
80°	21423	1631	0
85°	13086	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.6	7.1
10°-20°	321.7	18.9
20°-30°	415.7	24.4
30°-40°	369.2	21.7
40°-50°	240.1	14.1
50°-60°	133.4	7.8
60°-70°	67.4	4.0
70°-80°	28.4	1.7
80°-90°	5.0	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°	859.0	50.5
0°-40°	1228.3	72.1
0°-60°	1601.7	94.1
0°-90°	1702.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1702.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1312	1312	1312	1312	1312	
5°	1379	1353	1293	1233	1207	132
15°	1387	1316	1144	987	919	389
25°	1215	1132	893	695	620	549
35°	736	852	561	437	362	464
45°	404	448	284	217	153	317
55°	262	228	134	78	15	237
65°	164	120	56	4	0	164
75°	82	52	15	0	0	88
85°	15	8	0	0	0	19
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°	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8
2.5°	1349.2	1345.5	1349.2	1345.5	1345.5	1345.5	1345.5	1341.7	1341.7	1338.0	1338.0
5°	1379.1	1379.1	1375.4	1375.4	1371.6	1371.6	1371.6	1367.9	1364.2	1360.4	1352.9
7.5°	1397.8	1397.8	1394.1	1394.1	1390.3	1386.6	1386.6	1379.1	1375.4	1367.9	1360.4
10°	1405.3	1405.3	1401.5	1397.8	1394.1	1390.3	1390.3	1382.8	1375.4	1364.2	1356.7
12.5°	1401.5	1401.5	1397.8	1394.1	1390.3	1386.6	1382.8	1375.4	1364.2	1352.9	1341.7
15°	1386.6	1386.6	1382.8	1379.1	1371.6	1367.9	1364.2	1356.7	1345.5	1330.5	1315.6
17.5°	1356.7	1356.7	1352.9	1349.2	1345.5	1341.7	1334.3	1326.8	1311.8	1296.9	1281.9
20°	1315.6	1315.6	1315.6	1311.8	1304.4	1300.6	1296.9	1285.7	1274.5	1259.5	1240.8
22.5°	1267.0	1267.0	1263.2	1259.5	1252.0	1252.0	1244.6	1233.3	1222.1	1207.2	1188.5
25°	1214.7	1210.9	1207.2	1207.2	1196.0	1192.2	1188.5	1177.3	1166.1	1151.1	1132.4
27.5°	1139.9	1136.2	1139.9	1139.9	1136.2	1132.4	1128.7	1117.5	1098.8	1083.8	1072.6
30°	1005.4	1009.1	1009.1	1016.6	1031.5	1042.7	1050.2	1050.2	1035.3	1020.3	997.9
32.5°	863.3	870.8	874.6	889.5	904.5	915.7	923.1	938.1	956.8	953.0	930.6
35°	736.3	743.7	747.5	758.7	777.4	784.9	796.1	818.5	840.9	859.6	852.1
37.5°	624.1	624.1	635.4	646.6	661.5	672.7	683.9	702.6	732.5	747.5	751.2
40°	530.7	534.4	538.2	553.1	564.3	575.6	583.0	601.7	627.9	639.1	639.1
42.5°	459.7	459.7	463.4	470.9	485.9	489.6	497.1	512.0	527.0	534.4	538.2
45°	403.6	403.6	403.6	411.1	418.6	422.3	429.8	441.0	444.8	448.5	448.5
47.5°	358.8	358.8	358.8	362.5	366.3	370.0	373.7	377.5	381.2	381.2	373.7
50°	321.4	321.4	325.2	325.2	325.2	328.9	328.9	328.9	325.2	321.4	317.7
52.5°	291.5	291.5	291.5	291.5	291.5	291.5	291.5	287.8	280.3	276.6	269.1
55°	261.6	265.4	265.4	265.4	261.6	261.6	257.9	254.1	242.9	235.5	228.0
57.5°	239.2	239.2	239.2	235.5	235.5	231.7	228.0	220.5	213.0	205.6	194.3
60°	213.0	213.0	213.0	209.3	209.3	205.6	201.8	194.3	186.9	175.7	168.2
62.5°	186.9	186.9	186.9	186.9	183.1	179.4	175.7	168.2	160.7	153.2	145.8
65°	164.4	164.4	164.4	164.4	157.0	153.2	149.5	142.0	134.5	127.1	119.6
67.5°	142.0	142.0	142.0	138.3	134.5	130.8	127.1	123.3	115.9	108.4	100.9
70°	123.3	123.3	119.6	115.9	112.1	112.1	108.4	100.9	97.2	89.7	82.2
72.5°	100.9	100.9	100.9	97.2	93.4	89.7	86.0	82.2	78.5	71.0	67.3
75°	82.2	82.2	82.2	78.5	74.7	71.0	71.0	63.5	59.8	56.1	52.3
77.5°	63.5	63.5	63.5	59.8	56.1	56.1	52.3	48.6	44.8	41.1	37.4
80°	48.6	48.6	44.8	44.8	41.1	41.1	37.4	37.4	33.6	29.9	26.2
82.5°	29.9	29.9	29.9	29.9	26.2	26.2	26.2	22.4	22.4	18.7	14.9
85°	14.9	14.9	14.9	14.9	11.2	11.2	11.2	11.2	11.2	7.5	7.5
87.5°	0.0	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	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8
2.5°	1334.3	1330.5	1326.8	1323.0	1323.0	1319.3	1319.3	1315.6	1311.8	1308.1	1304.4
5°	1349.2	1341.7	1334.3	1330.5	1326.8	1323.0	1315.6	1308.1	1300.6	1293.1	1285.7
7.5°	1349.2	1341.7	1330.5	1323.0	1315.6	1311.8	1300.6	1289.4	1278.2	1267.0	1255.8
10°	1345.5	1330.5	1319.3	1308.1	1296.9	1289.4	1278.2	1263.2	1248.3	1233.3	1218.4
12.5°	1326.8	1311.8	1296.9	1281.9	1270.7	1263.2	1244.6	1225.9	1210.9	1192.2	1173.5
15°	1300.6	1285.7	1267.0	1244.6	1237.1	1225.9	1207.2	1184.8	1166.1	1143.6	1125.0
17.5°	1267.0	1244.6	1225.9	1203.4	1192.2	1181.0	1158.6	1132.4	1113.7	1087.6	1065.2
20°	1222.1	1203.4	1173.5	1154.9	1139.9	1128.7	1102.5	1076.4	1050.2	1027.8	997.9
22.5°	1169.8	1147.4	1121.2	1095.1	1083.8	1068.9	1042.7	1012.8	990.4	964.3	934.4
25°	1113.7	1087.6	1061.4	1031.5	1020.3	1009.1	979.2	953.0	923.1	893.2	870.8
27.5°	1046.5	1024.0	997.9	968.0	956.8	941.8	908.2	878.3	848.4	818.5	792.3
30°	979.2	960.5	926.9	893.2	874.6	855.9	822.2	788.6	755.0	728.8	706.4
32.5°	911.9	874.6	837.2	799.8	777.4	758.7	728.8	698.9	669.0	646.6	620.4
35°	822.2	784.9	743.7	706.4	687.7	672.7	639.1	609.2	583.0	560.6	538.2
37.5°	728.8	691.4	654.0	616.7	601.7	586.8	553.1	527.0	500.8	482.1	459.7
40°	627.9	609.2	568.1	534.4	519.5	504.6	478.4	448.5	429.8	407.4	388.7
42.5°	534.4	515.8	485.9	456.0	441.0	429.8	403.6	381.2	362.5	343.8	328.9
45°	448.5	433.5	411.1	388.7	373.7	362.5	336.4	317.7	302.7	284.0	272.8
47.5°	373.7	362.5	347.6	325.2	313.9	302.7	280.3	265.4	250.4	239.2	228.0
50°	310.2	302.7	287.8	272.8	261.6	254.1	235.5	220.5	209.3	198.1	190.6
52.5°	261.6	250.4	239.2	224.2	216.8	209.3	198.1	183.1	175.7	164.4	157.0
55°	220.5	213.0	201.8	186.9	179.4	175.7	164.4	153.2	142.0	134.5	127.1
57.5°	186.9	179.4	168.2	157.0	153.2	145.8	134.5	123.3	115.9	112.1	104.6
60°	160.7	149.5	142.0	130.8	123.3	119.6	108.4	100.9	93.4	89.7	82.2
62.5°	134.5	127.1	115.9	104.6	100.9	97.2	89.7	82.2	74.7	71.0	63.5
65°	112.1	104.6	97.2	86.0	82.2	78.5	71.0	63.5	59.8	56.1	52.3
67.5°	93.4	86.0	78.5	71.0	67.3	59.8	56.1	52.3	44.8	41.1	37.4
70°	74.7	67.3	59.8	52.3	52.3	48.6	41.1	37.4	33.6	29.9	26.2
72.5°	59.8	52.3	48.6	41.1	37.4	37.4	33.6	29.9	26.2	22.4	18.7
75°	44.8	41.1	33.6	29.9	26.2	26.2	22.4	18.7	18.7	14.9	11.2
77.5°	33.6	29.9	26.2	22.4	18.7	18.7	14.9	11.2	11.2	7.5	7.5
80°	22.4	18.7	14.9	11.2	11.2	11.2	7.5	7.5	7.5	3.7	3.7
82.5°	11.2	11.2	7.5	7.5	7.5	7.5	3.7	3.7	3.7	3.7	0.0
85°	3.7	3.7	3.7	3.7	3.7	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	0.0
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°	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8
2.5°	1300.6	1296.9	1293.1	1293.1	1289.4	1285.7	1281.9	1281.9	1278.2	1274.5	1274.5
5°	1278.2	1270.7	1263.2	1259.5	1255.8	1248.3	1244.6	1237.1	1233.3	1225.9	1222.1
7.5°	1244.6	1233.3	1222.1	1218.4	1214.7	1207.2	1196.0	1184.8	1177.3	1173.5	1166.1
10°	1207.2	1192.2	1177.3	1169.8	1166.1	1151.1	1139.9	1128.7	1121.2	1110.0	1098.8
12.5°	1154.9	1139.9	1125.0	1117.5	1110.0	1095.1	1083.8	1068.9	1053.9	1042.7	1031.5
15°	1102.5	1083.8	1065.2	1057.7	1046.5	1031.5	1016.6	1001.6	986.7	971.7	960.5
17.5°	1042.7	1024.0	1001.6	990.4	982.9	964.3	941.8	930.6	911.9	900.7	885.8
20°	979.2	956.8	934.4	926.9	915.7	893.2	874.6	855.9	840.9	826.0	811.0
22.5°	911.9	885.8	863.3	855.9	844.7	822.2	803.5	788.6	769.9	751.2	736.3
25°	844.7	818.5	796.1	781.1	769.9	751.2	728.8	713.8	695.2	680.2	669.0
27.5°	769.9	743.7	721.3	710.1	702.6	683.9	665.3	646.6	627.9	612.9	598.0
30°	683.9	665.3	646.6	639.1	627.9	612.9	594.2	579.3	560.6	545.7	530.7
32.5°	601.7	583.0	564.3	560.6	553.1	538.2	527.0	512.0	497.1	482.1	470.9
35°	523.2	504.6	493.3	485.9	478.4	467.2	456.0	448.5	437.3	422.3	411.1
37.5°	444.8	437.3	418.6	414.9	411.1	399.9	392.4	385.0	373.7	366.3	355.1
40°	377.5	366.3	355.1	351.3	343.8	336.4	328.9	321.4	313.9	310.2	299.0
42.5°	313.9	306.5	295.3	295.3	287.8	280.3	272.8	269.1	261.6	254.1	250.4
45°	265.4	254.1	250.4	242.9	242.9	235.5	228.0	224.2	216.8	209.3	201.8
47.5°	220.5	213.0	205.6	201.8	201.8	194.3	186.9	179.4	175.7	164.4	157.0
50°	183.1	175.7	171.9	168.2	164.4	160.7	153.2	145.8	138.3	130.8	119.6
52.5°	149.5	145.8	138.3	138.3	134.5	127.1	119.6	112.1	104.6	97.2	86.0
55°	123.3	115.9	112.1	108.4	104.6	100.9	93.4	86.0	78.5	67.3	59.8
57.5°	97.2	93.4	86.0	86.0	82.2	74.7	67.3	59.8	52.3	41.1	33.6
60°	78.5	71.0	67.3	63.5	59.8	56.1	44.8	37.4	29.9	22.4	11.2
62.5°	59.8	56.1	48.6	48.6	44.8	37.4	29.9	22.4	11.2	3.7	0.0
65°	44.8	41.1	37.4	33.6	29.9	22.4	14.9	7.5	3.7	0.0	0.0
67.5°	33.6	29.9	22.4	22.4	18.7	11.2	3.7	0.0	0.0	0.0	0.0
70°	22.4	18.7	14.9	11.2	7.5	3.7	0.0	0.0	0.0	0.0	0.0
72.5°	14.9	11.2	7.5	3.7	3.7	0.0	0.0	0.0	0.0	0.0	0.0
75°	11.2	7.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	3.7	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	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	0.0
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: P242052

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8	1311.8
2.5°	1270.7	1267.0	1270.7	1267.0	1267.0	1263.2	1267.0	1263.2
5°	1218.4	1214.7	1214.7	1210.9	1210.9	1210.9	1207.2	1207.2
7.5°	1158.6	1154.9	1151.1	1151.1	1147.4	1143.6	1143.6	1139.9
10°	1095.1	1087.6	1080.1	1083.8	1076.4	1076.4	1072.6	1072.6
12.5°	1024.0	1016.6	1016.6	1009.1	1001.6	1001.6	994.2	994.2
15°	953.0	945.6	938.1	934.4	926.9	926.9	923.1	919.4
17.5°	874.6	867.1	859.6	855.9	852.1	848.4	844.7	840.9
20°	799.8	788.6	784.9	781.1	773.6	769.9	766.2	769.9
22.5°	728.8	713.8	710.1	706.4	702.6	695.2	691.4	687.7
25°	654.0	642.8	635.4	635.4	627.9	624.1	616.7	620.4
27.5°	583.0	575.6	568.1	564.3	556.9	553.1	549.4	549.4
30°	519.5	508.3	504.6	497.1	493.3	485.9	482.1	482.1
32.5°	456.0	444.8	441.0	437.3	429.8	422.3	422.3	422.3
35°	399.9	388.7	385.0	377.5	370.0	362.5	362.5	362.5
37.5°	343.8	332.6	325.2	321.4	313.9	310.2	302.7	302.7
40°	291.5	280.3	272.8	269.1	261.6	254.1	250.4	250.4
42.5°	239.2	231.7	224.2	220.5	213.0	205.6	201.8	201.8
45°	190.6	183.1	179.4	175.7	168.2	157.0	153.2	153.2
47.5°	149.5	142.0	138.3	130.8	123.3	115.9	108.4	108.4
50°	112.1	104.6	97.2	93.4	86.0	78.5	71.0	71.0
52.5°	78.5	71.0	67.3	59.8	52.3	44.8	41.1	37.4
55°	48.6	41.1	37.4	33.6	26.2	22.4	14.9	14.9
57.5°	26.2	18.7	14.9	11.2	7.5	3.7	3.7	3.7
60°	7.5	3.7	3.7	3.7	3.7	3.7	3.7	3.7
62.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	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
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)