

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: P242047

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

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242047
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
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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

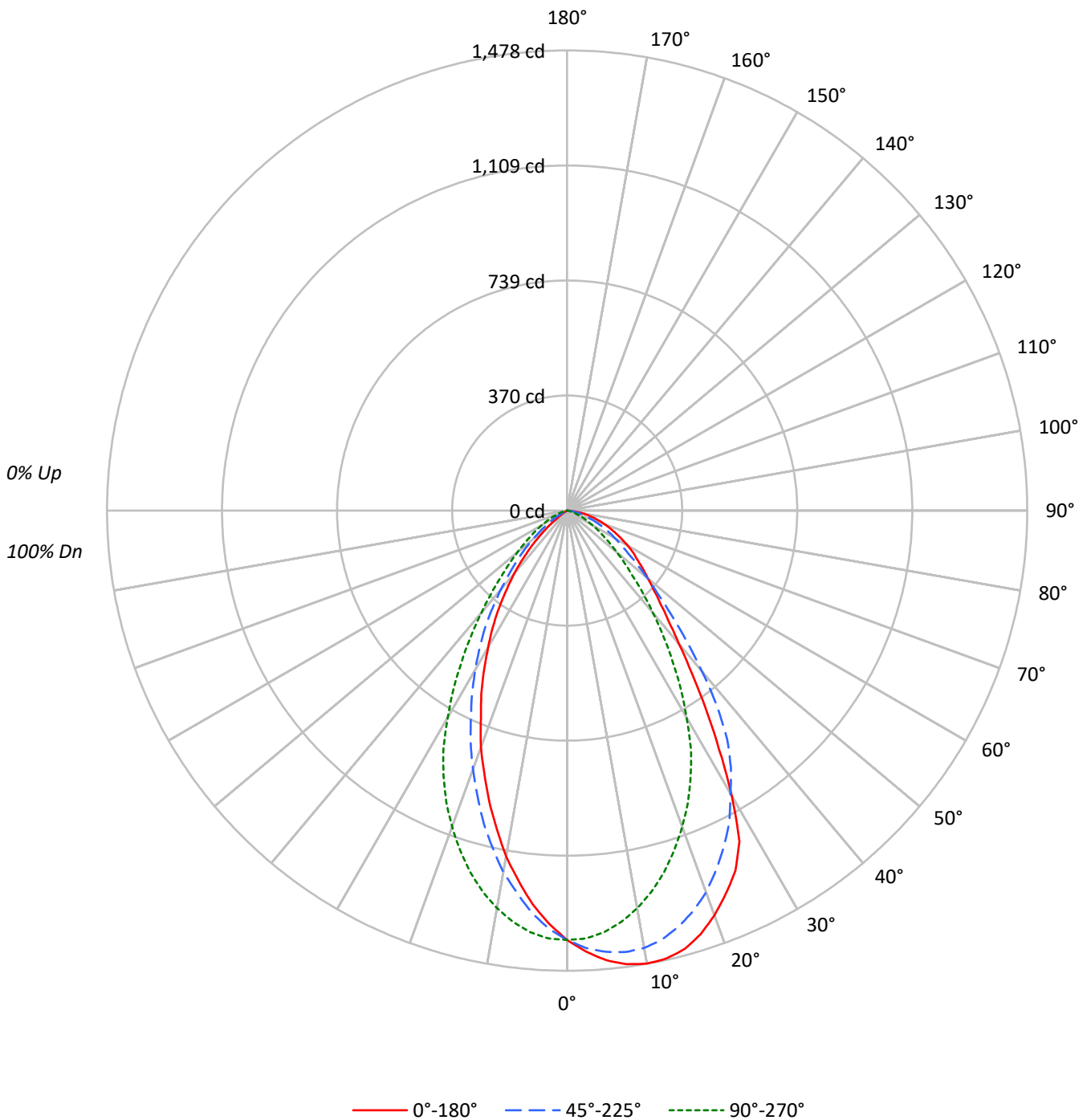
Lumens per Lamp: N/A
Luminaire Lumens: 1790.1 lumens
Efficiency: N/A
Efficacy: 47.1 lumens/watt
Spacing Criteria (0/90/45): 0.96 / 0.94 / 1.03
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')
CIE Type: Direct

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°	105576	105576	105576
5°	111412	104474	97528
10°	114838	100793	87657
15°	115529	95290	76605
20°	112670	88029	65938
25°	107859	79321	55091
30°	93431	67729	44802
35°	72334	55075	35620
40°	55756	42796	26309
45°	45941	32334	17439
50°	40237	24804	8895
55°	36712	18883	2095
60°	34291	14436	597
65°	31315	10668	0
70°	29027	7027	0
75°	25582	4643	0
80°	22525	1719	0
85°	13788	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	127.9	7.1
10°-20°	338.3	18.9
20°-30°	437.1	24.4
30°-40°	388.2	21.7
40°-50°	252.4	14.1
50°-60°	140.3	7.8
60°-70°	70.9	4.0
70°-80°	29.8	1.7
80°-90°	5.3	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°	903.2	50.5
0°-40°	1291.4	72.1
0°-60°	1684.1	94.1
0°-90°	1790.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1790.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1379	1379	1379	1379	1379	
5°	1450	1422	1360	1297	1269	139
15°	1458	1383	1202	1037	967	409
25°	1277	1191	939	731	652	578
35°	774	896	589	460	381	488
45°	424	472	299	228	161	333
55°	275	240	142	82	16	249
65°	173	126	59	4	0	172
75°	86	55	16	0	0	92
85°	16	8	0	0	0	20
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°	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3
2.5°	1418.6	1414.7	1418.6	1414.7	1414.7	1414.7	1414.7	1410.7	1410.7	1406.8	1406.8
5°	1450.0	1450.0	1446.1	1446.1	1442.2	1442.2	1442.2	1438.3	1434.3	1430.4	1422.5
7.5°	1469.7	1469.7	1465.8	1465.8	1461.8	1457.9	1457.9	1450.0	1446.1	1438.3	1430.4
10°	1477.5	1477.5	1473.6	1469.7	1465.8	1461.8	1461.8	1454.0	1446.1	1434.3	1426.5
12.5°	1473.6	1473.6	1469.7	1465.8	1461.8	1457.9	1454.0	1446.1	1434.3	1422.5	1410.7
15°	1457.9	1457.9	1454.0	1450.0	1442.2	1438.3	1434.3	1426.5	1414.7	1399.0	1383.2
17.5°	1426.5	1426.5	1422.5	1418.6	1414.7	1410.7	1402.9	1395.0	1379.3	1363.6	1347.9
20°	1383.2	1383.2	1383.2	1379.3	1371.4	1367.5	1363.6	1351.8	1340.0	1324.3	1304.6
22.5°	1332.2	1332.2	1328.2	1324.3	1316.4	1316.4	1308.6	1296.8	1285.0	1269.3	1249.6
25°	1277.1	1273.2	1269.3	1269.3	1257.5	1253.6	1249.6	1237.8	1226.0	1210.3	1190.7
27.5°	1198.5	1194.6	1198.5	1198.5	1194.6	1190.7	1186.8	1175.0	1155.3	1139.6	1127.8
30°	1057.1	1061.0	1061.0	1068.9	1084.6	1096.4	1104.2	1104.2	1088.5	1072.8	1049.2
32.5°	907.7	915.6	919.5	935.3	951.0	962.8	970.6	986.3	1006.0	1002.1	978.5
35°	774.1	782.0	785.9	797.7	817.4	825.2	837.0	860.6	884.2	903.8	896.0
37.5°	656.3	656.3	668.0	679.8	695.5	707.3	719.1	738.8	770.2	785.9	789.9
40°	558.0	561.9	565.9	581.6	593.4	605.2	613.0	632.7	660.2	672.0	672.0
42.5°	483.3	483.3	487.3	495.1	510.9	514.8	522.6	538.4	554.1	561.9	565.9
45°	424.4	424.4	424.4	432.3	440.1	444.1	451.9	463.7	467.6	471.6	471.6
47.5°	377.2	377.2	377.2	381.2	385.1	389.0	393.0	396.9	400.8	400.8	393.0
50°	337.9	337.9	341.9	341.9	341.9	345.8	345.8	345.8	341.9	337.9	334.0
52.5°	306.5	306.5	306.5	306.5	306.5	306.5	306.5	302.6	294.7	290.8	282.9
55°	275.1	279.0	279.0	279.0	275.1	275.1	271.1	267.2	255.4	247.6	239.7
57.5°	251.5	251.5	251.5	247.6	247.6	243.6	239.7	231.8	224.0	216.1	204.3
60°	224.0	224.0	224.0	220.1	220.1	216.1	212.2	204.3	196.5	184.7	176.8
62.5°	196.5	196.5	196.5	196.5	192.6	188.6	184.7	176.8	169.0	161.1	153.3
65°	172.9	172.9	172.9	172.9	165.0	161.1	157.2	149.3	141.5	133.6	125.7
67.5°	149.3	149.3	149.3	145.4	141.5	137.5	133.6	129.7	121.8	114.0	106.1
70°	129.7	129.7	125.7	121.8	117.9	117.9	114.0	106.1	102.2	94.3	86.5
72.5°	106.1	106.1	106.1	102.2	98.2	94.3	90.4	86.5	82.5	74.7	70.7
75°	86.5	86.5	86.5	82.5	78.6	74.7	74.7	66.8	62.9	58.9	55.0
77.5°	66.8	66.8	66.8	62.9	58.9	58.9	55.0	51.1	47.2	43.2	39.3
80°	51.1	51.1	47.2	47.2	43.2	43.2	39.3	39.3	35.4	31.4	27.5
82.5°	31.4	31.4	31.4	31.4	27.5	27.5	27.5	23.6	23.6	19.6	15.7
85°	15.7	15.7	15.7	15.7	11.8	11.8	11.8	11.8	11.8	7.9	7.9
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°	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3
2.5°	1402.9	1399.0	1395.0	1391.1	1391.1	1387.2	1387.2	1383.2	1379.3	1375.4	1371.4
5°	1418.6	1410.7	1402.9	1399.0	1395.0	1391.1	1383.2	1375.4	1367.5	1359.7	1351.8
7.5°	1418.6	1410.7	1399.0	1391.1	1383.2	1379.3	1367.5	1355.7	1343.9	1332.2	1320.4
10°	1414.7	1399.0	1387.2	1375.4	1363.6	1355.7	1343.9	1328.2	1312.5	1296.8	1281.1
12.5°	1395.0	1379.3	1363.6	1347.9	1336.1	1328.2	1308.6	1288.9	1273.2	1253.6	1233.9
15°	1367.5	1351.8	1332.2	1308.6	1300.7	1288.9	1269.3	1245.7	1226.0	1202.5	1182.8
17.5°	1332.2	1308.6	1288.9	1265.3	1253.6	1241.8	1218.2	1190.7	1171.0	1143.5	1119.9
20°	1285.0	1265.3	1233.9	1214.3	1198.5	1186.8	1159.2	1131.7	1104.2	1080.7	1049.2
22.5°	1230.0	1206.4	1178.9	1151.4	1139.6	1123.9	1096.4	1064.9	1041.4	1013.8	982.4
25°	1171.0	1143.5	1116.0	1084.6	1072.8	1061.0	1029.6	1002.1	970.6	939.2	915.6
27.5°	1100.3	1076.7	1049.2	1017.8	1006.0	990.3	954.9	923.5	892.0	860.6	833.1
30°	1029.6	1009.9	974.6	939.2	919.5	899.9	864.5	829.2	793.8	766.3	742.7
32.5°	958.8	919.5	880.2	840.9	817.4	797.7	766.3	734.8	703.4	679.8	652.3
35°	864.5	825.2	782.0	742.7	723.1	707.3	672.0	640.5	613.0	589.4	565.9
37.5°	766.3	727.0	687.7	648.4	632.7	617.0	581.6	554.1	526.6	506.9	483.3
40°	660.2	640.5	597.3	561.9	546.2	530.5	503.0	471.6	451.9	428.3	408.7
42.5°	561.9	542.3	510.9	479.4	463.7	451.9	424.4	400.8	381.2	361.5	345.8
45°	471.6	455.8	432.3	408.7	393.0	381.2	353.7	334.0	318.3	298.7	286.9
47.5°	393.0	381.2	365.5	341.9	330.1	318.3	294.7	279.0	263.3	251.5	239.7
50°	326.2	318.3	302.6	286.9	275.1	267.2	247.6	231.8	220.1	208.3	200.4
52.5°	275.1	263.3	251.5	235.8	227.9	220.1	208.3	192.6	184.7	172.9	165.0
55°	231.8	224.0	212.2	196.5	188.6	184.7	172.9	161.1	149.3	141.5	133.6
57.5°	196.5	188.6	176.8	165.0	161.1	153.3	141.5	129.7	121.8	117.9	110.0
60°	169.0	157.2	149.3	137.5	129.7	125.7	114.0	106.1	98.2	94.3	86.5
62.5°	141.5	133.6	121.8	110.0	106.1	102.2	94.3	86.5	78.6	74.7	66.8
65°	117.9	110.0	102.2	90.4	86.5	82.5	74.7	66.8	62.9	58.9	55.0
67.5°	98.2	90.4	82.5	74.7	70.7	62.9	58.9	55.0	47.2	43.2	39.3
70°	78.6	70.7	62.9	55.0	55.0	51.1	43.2	39.3	35.4	31.4	27.5
72.5°	62.9	55.0	51.1	43.2	39.3	39.3	35.4	31.4	27.5	23.6	19.6
75°	47.2	43.2	35.4	31.4	27.5	27.5	23.6	19.6	19.6	15.7	11.8
77.5°	35.4	31.4	27.5	23.6	19.6	19.6	15.7	11.8	11.8	7.9	7.9
80°	23.6	19.6	15.7	11.8	11.8	11.8	7.9	7.9	7.9	3.9	3.9
82.5°	11.8	11.8	7.9	7.9	7.9	7.9	3.9	3.9	3.9	3.9	0.0
85°	3.9	3.9	3.9	3.9	3.9	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°	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3
2.5°	1367.5	1363.6	1359.7	1359.7	1355.7	1351.8	1347.9	1347.9	1343.9	1340.0	1340.0
5°	1343.9	1336.1	1328.2	1324.3	1320.4	1312.5	1308.6	1300.7	1296.8	1288.9	1285.0
7.5°	1308.6	1296.8	1285.0	1281.1	1277.1	1269.3	1257.5	1245.7	1237.8	1233.9	1226.0
10°	1269.3	1253.6	1237.8	1230.0	1226.0	1210.3	1198.5	1186.8	1178.9	1167.1	1155.3
12.5°	1214.3	1198.5	1182.8	1175.0	1167.1	1151.4	1139.6	1123.9	1108.2	1096.4	1084.6
15°	1159.2	1139.6	1119.9	1112.1	1100.3	1084.6	1068.9	1053.1	1037.4	1021.7	1009.9
17.5°	1096.4	1076.7	1053.1	1041.4	1033.5	1013.8	990.3	978.5	958.8	947.0	931.3
20°	1029.6	1006.0	982.4	974.6	962.8	939.2	919.5	899.9	884.2	868.5	852.7
22.5°	958.8	931.3	907.7	899.9	888.1	864.5	844.9	829.2	809.5	789.9	774.1
25°	888.1	860.6	837.0	821.3	809.5	789.9	766.3	750.6	730.9	715.2	703.4
27.5°	809.5	782.0	758.4	746.6	738.8	719.1	699.5	679.8	660.2	644.5	628.7
30°	719.1	699.5	679.8	672.0	660.2	644.5	624.8	609.1	589.4	573.7	558.0
32.5°	632.7	613.0	593.4	589.4	581.6	565.9	554.1	538.4	522.6	506.9	495.1
35°	550.2	530.5	518.7	510.9	503.0	491.2	479.4	471.6	459.8	444.1	432.3
37.5°	467.6	459.8	440.1	436.2	432.3	420.5	412.6	404.8	393.0	385.1	373.3
40°	396.9	385.1	373.3	369.4	361.5	353.7	345.8	337.9	330.1	326.2	314.4
42.5°	330.1	322.2	310.4	310.4	302.6	294.7	286.9	282.9	275.1	267.2	263.3
45°	279.0	267.2	263.3	255.4	255.4	247.6	239.7	235.8	227.9	220.1	212.2
47.5°	231.8	224.0	216.1	212.2	212.2	204.3	196.5	188.6	184.7	172.9	165.0
50°	192.6	184.7	180.8	176.8	172.9	169.0	161.1	153.3	145.4	137.5	125.7
52.5°	157.2	153.3	145.4	145.4	141.5	133.6	125.7	117.9	110.0	102.2	90.4
55°	129.7	121.8	117.9	114.0	110.0	106.1	98.2	90.4	82.5	70.7	62.9
57.5°	102.2	98.2	90.4	90.4	86.5	78.6	70.7	62.9	55.0	43.2	35.4
60°	82.5	74.7	70.7	66.8	62.9	58.9	47.2	39.3	31.4	23.6	11.8
62.5°	62.9	58.9	51.1	51.1	47.2	39.3	31.4	23.6	11.8	3.9	0.0
65°	47.2	43.2	39.3	35.4	31.4	23.6	15.7	7.9	3.9	0.0	0.0
67.5°	35.4	31.4	23.6	23.6	19.6	11.8	3.9	0.0	0.0	0.0	0.0
70°	23.6	19.6	15.7	11.8	7.9	3.9	0.0	0.0	0.0	0.0	0.0
72.5°	15.7	11.8	7.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0
75°	11.8	7.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	3.9	3.9	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: P242047

CATALOG NUMBER: PRS440D010-S4M24-41SWWMB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3	1379.3
2.5°	1336.1	1332.2	1336.1	1332.2	1332.2	1328.2	1332.2	1328.2
5°	1281.1	1277.1	1277.1	1273.2	1273.2	1273.2	1269.3	1269.3
7.5°	1218.2	1214.3	1210.3	1210.3	1206.4	1202.5	1202.5	1198.5
10°	1151.4	1143.5	1135.7	1139.6	1131.7	1131.7	1127.8	1127.8
12.5°	1076.7	1068.9	1068.9	1061.0	1053.1	1053.1	1045.3	1045.3
15°	1002.1	994.2	986.3	982.4	974.6	974.6	970.6	966.7
17.5°	919.5	911.7	903.8	899.9	896.0	892.0	888.1	884.2
20°	840.9	829.2	825.2	821.3	813.4	809.5	805.6	809.5
22.5°	766.3	750.6	746.6	742.7	738.8	730.9	727.0	723.1
25°	687.7	675.9	668.0	668.0	660.2	656.3	648.4	652.3
27.5°	613.0	605.2	597.3	593.4	585.5	581.6	577.7	577.7
30°	546.2	534.4	530.5	522.6	518.7	510.9	506.9	506.9
32.5°	479.4	467.6	463.7	459.8	451.9	444.1	444.1	444.1
35°	420.5	408.7	404.8	396.9	389.0	381.2	381.2	381.2
37.5°	361.5	349.7	341.9	337.9	330.1	326.2	318.3	318.3
40°	306.5	294.7	286.9	282.9	275.1	267.2	263.3	263.3
42.5°	251.5	243.6	235.8	231.8	224.0	216.1	212.2	212.2
45°	200.4	192.6	188.6	184.7	176.8	165.0	161.1	161.1
47.5°	157.2	149.3	145.4	137.5	129.7	121.8	114.0	114.0
50°	117.9	110.0	102.2	98.2	90.4	82.5	74.7	74.7
52.5°	82.5	74.7	70.7	62.9	55.0	47.2	43.2	39.3
55°	51.1	43.2	39.3	35.4	27.5	23.6	15.7	15.7
57.5°	27.5	19.6	15.7	11.8	7.9	3.9	3.9	3.9
60°	7.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
62.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
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)