

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: P241997

Luminaire Tested: **PRS440D010-S4M24-41SWWC-3000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P241997
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1802-584-61)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PRS440D010-S4M24-41SWWC-3000K
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM SPECULAR
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2124.3 lumens
Efficiency: N/A
Efficacy: 55.9 lumens/watt
Spacing Criteria (0/90/45): 0.94 / 0.9 / 0.99
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')
CIE Type: Direct

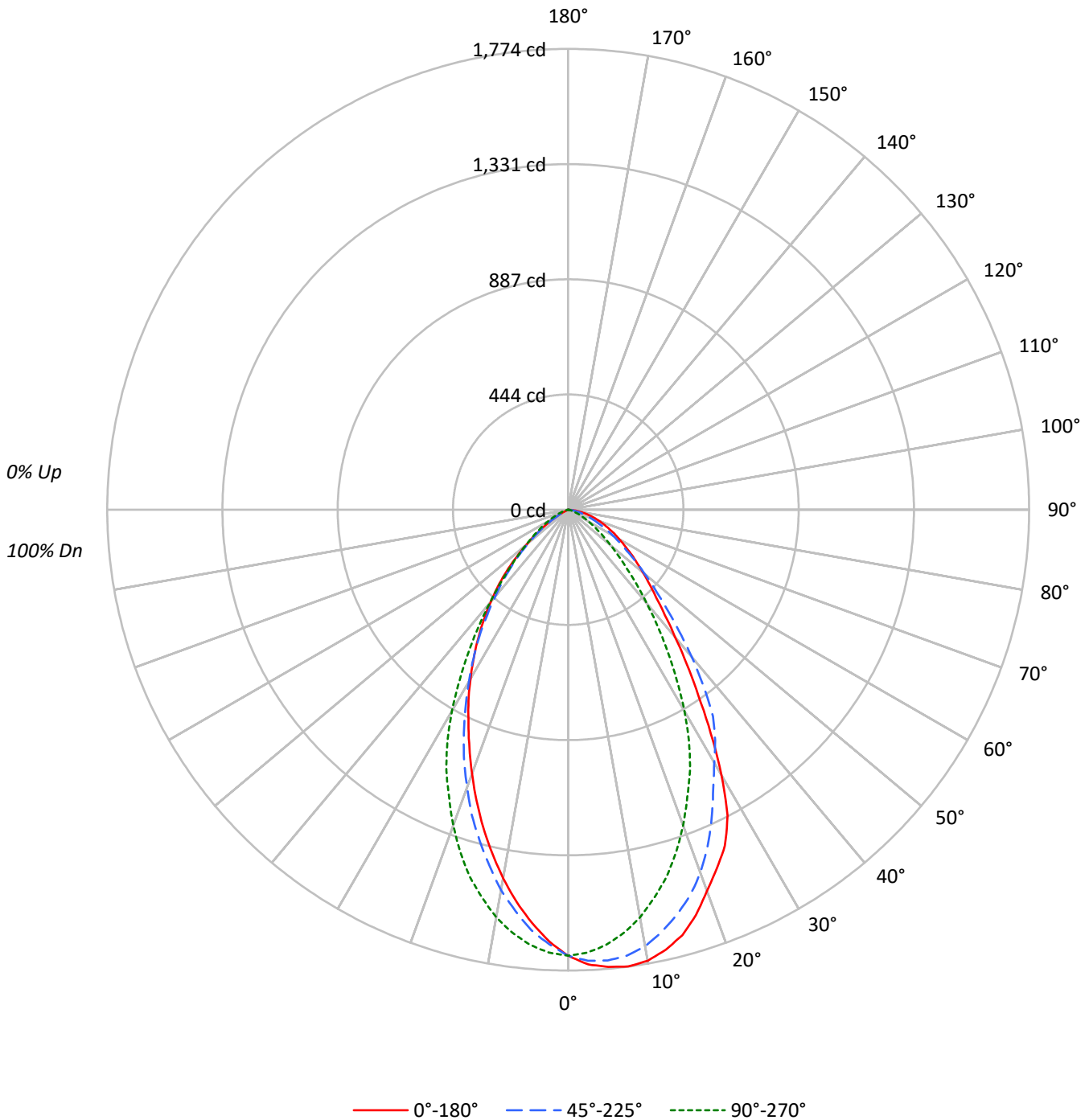
Input Watts (W): 38
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	109	106	103	110	107	104	101	102	100	98	99	97	95	95	94	92	91					91			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	85	83	81					81			
3	98	90	84	79	96	89	83	79	86	81	77	83	79	76	81	78	75	73					73			
4	92	83	76	71	90	81	75	70	79	74	69	77	72	69	75	71	68	66					66			
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	70	65	62	60					60			
6	81	70	63	58	79	69	63	58	68	62	57	66	61	57	65	60	56	55					55			
7	76	65	58	53	74	64	58	53	63	57	52	62	56	52	60	55	52	50					50			
8	72	60	53	49	70	60	53	48	59	53	48	58	52	48	56	51	48	46					46			
9	68	56	50	45	66	56	49	45	55	49	45	54	48	44	53	48	44	43					43			
10	64	53	46	42	63	52	46	42	51	46	41	51	45	41	50	45	41	40					40			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	131425	131425	131425
5°	135723	129207	122691
10°	137020	123838	112032
15°	134381	115902	100227
20°	127193	105322	88054
25°	120544	93687	76678
30°	104294	78998	66509
35°	81538	62391	56448
40°	63889	46953	46243
45°	52014	34423	36328
50°	44596	25245	25245
55°	39127	18856	15093
60°	34613	13518	7027
65°	31351	9599	1286
70°	28467	6333	0
75°	25079	4170	0
80°	20233	1543	0
85°	12383	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.9	7.4
10°-20°	410.4	19.3
20°-30°	518.0	24.4
30°-40°	459.2	21.6
40°-50°	304.7	14.3
50°-60°	165.8	7.8
60°-70°	74.5	3.5
70°-80°	28.9	1.4
80°-90°	4.8	0.2
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°	1086.3	51.1
0°-40°	1545.5	72.8
0°-60°	2016.1	94.9
0°-90°	2124.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2124.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1717	1717	1717	1717	1717	
5°	1766	1742	1682	1625	1597	168
15°	1696	1614	1463	1318	1265	474
25°	1427	1307	1109	950	908	646
35°	873	972	668	597	604	551
45°	480	534	318	307	336	377
55°	293	276	141	110	113	264
65°	173	134	53	4	7	173
75°	85	53	14	0	0	91
85°	14	7	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°	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0
2.5°	1752.3	1748.7	1748.7	1748.7	1745.2	1745.2	1745.2	1745.2	1741.7	1738.1	1738.1
5°	1766.4	1769.9	1766.4	1762.9	1762.9	1762.9	1759.3	1755.8	1752.3	1748.7	1741.7
7.5°	1773.5	1769.9	1769.9	1766.4	1762.9	1759.3	1755.8	1752.3	1745.2	1738.1	1731.1
10°	1762.9	1759.3	1755.8	1755.8	1745.2	1745.2	1741.7	1734.6	1724.0	1717.0	1706.4
12.5°	1734.6	1734.6	1731.1	1727.6	1717.0	1717.0	1709.9	1702.8	1692.2	1678.1	1664.0
15°	1695.8	1695.8	1688.7	1685.2	1678.1	1674.6	1667.5	1656.9	1646.3	1632.2	1614.5
17.5°	1635.7	1635.7	1632.2	1625.1	1621.6	1618.0	1607.4	1600.4	1586.2	1572.1	1558.0
20°	1561.5	1554.4	1554.4	1550.9	1543.8	1540.3	1536.8	1526.2	1515.6	1501.5	1487.3
22.5°	1494.4	1490.9	1480.3	1473.2	1462.6	1455.5	1452.0	1437.9	1430.8	1420.2	1402.5
25°	1427.3	1420.2	1416.7	1406.1	1391.9	1388.4	1377.8	1356.6	1342.5	1324.8	1307.1
27.5°	1328.3	1328.3	1331.9	1328.3	1314.2	1310.7	1303.6	1285.9	1257.7	1229.4	1208.2
30°	1180.0	1176.4	1180.0	1187.0	1197.6	1201.2	1208.2	1204.7	1183.5	1151.7	1123.4
32.5°	1021.0	1021.0	1035.1	1045.7	1056.3	1059.8	1066.9	1084.6	1084.6	1074.0	1052.8
35°	872.6	879.7	890.3	900.9	915.0	918.5	936.2	939.7	960.9	975.1	971.5
37.5°	749.0	756.0	759.6	770.2	784.3	787.8	794.9	819.6	844.3	862.0	854.9
40°	639.4	639.4	650.0	660.6	674.8	678.3	688.9	703.0	731.3	738.4	738.4
42.5°	551.1	554.7	558.2	565.3	575.9	582.9	590.0	611.2	625.3	635.9	628.8
45°	480.5	484.0	487.5	494.6	501.7	505.2	512.3	526.4	537.0	537.0	533.5
47.5°	423.9	423.9	427.5	431.0	438.1	441.6	448.7	455.7	459.3	455.7	452.2
50°	374.5	378.0	378.0	381.5	385.1	392.1	395.7	395.7	395.7	392.1	385.1
52.5°	332.1	332.1	335.6	335.6	342.7	346.2	346.2	346.2	342.7	335.6	325.0
55°	293.2	293.2	293.2	296.8	303.8	303.8	303.8	300.3	296.8	286.2	275.6
57.5°	257.9	261.4	261.4	261.4	265.0	265.0	265.0	261.4	254.4	243.8	233.2
60°	226.1	229.6	229.6	229.6	233.2	233.2	229.6	226.1	219.0	204.9	197.8
62.5°	201.4	201.4	201.4	201.4	201.4	201.4	197.8	190.8	183.7	173.1	166.0
65°	173.1	173.1	173.1	176.6	173.1	169.6	169.6	162.5	155.4	144.8	134.2
67.5°	148.4	148.4	148.4	148.4	144.8	144.8	141.3	134.2	127.2	120.1	109.5
70°	127.2	127.2	127.2	123.6	120.1	120.1	116.6	109.5	102.5	95.4	88.3
72.5°	106.0	106.0	106.0	102.5	98.9	95.4	95.4	88.3	81.3	74.2	70.7
75°	84.8	84.8	84.8	81.3	77.7	74.2	74.2	67.1	63.6	60.1	53.0
77.5°	67.1	67.1	63.6	60.1	60.1	56.5	56.5	53.0	49.5	42.4	38.9
80°	45.9	45.9	45.9	45.9	42.4	38.9	38.9	35.3	31.8	28.3	24.7
82.5°	31.8	31.8	28.3	28.3	24.7	24.7	24.7	21.2	21.2	17.7	14.1
85°	14.1	14.1	14.1	14.1	10.6	10.6	10.6	10.6	10.6	7.1	7.1
87.5°	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0	3.5	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°	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0
2.5°	1734.6	1731.1	1731.1	1724.0	1724.0	1720.5	1717.0	1713.4	1709.9	1706.4	1702.8
5°	1738.1	1731.1	1724.0	1717.0	1717.0	1709.9	1702.8	1695.8	1692.2	1681.6	1674.6
7.5°	1724.0	1713.4	1706.4	1695.8	1692.2	1685.2	1674.6	1664.0	1653.4	1642.8	1632.2
10°	1695.8	1681.6	1671.0	1660.4	1649.8	1646.3	1632.2	1621.6	1603.9	1593.3	1582.7
12.5°	1653.4	1639.2	1625.1	1607.4	1603.9	1596.8	1579.2	1561.5	1547.4	1529.7	1515.6
15°	1600.4	1586.2	1565.0	1550.9	1540.3	1529.7	1515.6	1497.9	1476.7	1462.6	1444.9
17.5°	1540.3	1519.1	1497.9	1480.3	1466.1	1459.1	1434.3	1413.1	1399.0	1381.3	1363.7
20°	1469.7	1444.9	1420.2	1395.5	1384.9	1370.7	1349.5	1328.3	1307.1	1293.0	1268.3
22.5°	1384.9	1360.1	1335.4	1307.1	1300.1	1285.9	1261.2	1240.0	1222.4	1197.6	1176.4
25°	1289.5	1268.3	1250.6	1225.9	1211.8	1197.6	1176.4	1151.7	1127.0	1109.3	1084.6
27.5°	1194.1	1180.0	1162.3	1137.6	1123.4	1109.3	1081.0	1056.3	1024.5	1006.9	978.6
30°	1102.2	1091.6	1066.9	1042.2	1017.5	1006.9	968.0	939.7	911.5	893.8	872.6
32.5°	1021.0	989.2	957.4	922.1	907.9	893.8	854.9	826.7	802.0	777.2	756.0
35°	929.1	879.7	844.3	812.5	794.9	780.8	749.0	717.2	696.0	667.7	653.6
37.5°	830.2	787.8	745.4	706.6	692.4	671.2	646.5	611.2	590.0	565.3	544.1
40°	724.2	696.0	650.0	611.2	593.5	579.4	547.6	519.3	491.1	469.9	455.7
42.5°	614.7	597.0	561.7	522.9	505.2	491.1	462.8	431.0	406.3	388.6	370.9
45°	522.9	508.7	480.5	445.1	423.9	409.8	381.5	353.3	332.1	318.0	307.4
47.5°	441.6	427.5	402.7	370.9	353.3	339.2	310.9	286.2	272.0	261.4	254.4
50°	370.9	353.3	332.1	310.9	293.2	279.1	254.4	236.7	222.6	212.0	208.4
52.5°	310.9	296.8	275.6	254.4	240.2	229.6	204.9	190.8	183.7	173.1	166.0
55°	261.4	247.3	229.6	208.4	197.8	187.2	169.6	159.0	148.4	141.3	134.2
57.5°	219.0	204.9	187.2	169.6	159.0	151.9	137.8	127.2	120.1	113.1	106.0
60°	183.7	169.6	155.4	137.8	130.7	123.6	113.1	102.5	95.4	88.3	81.3
62.5°	151.9	137.8	123.6	109.5	106.0	98.9	91.9	81.3	74.2	70.7	63.6
65°	127.2	113.1	98.9	88.3	84.8	77.7	70.7	63.6	56.5	53.0	49.5
67.5°	102.5	88.3	77.7	70.7	67.1	63.6	56.5	49.5	45.9	38.9	35.3
70°	81.3	70.7	60.1	53.0	49.5	45.9	42.4	38.9	31.8	28.3	24.7
72.5°	60.1	53.0	45.9	38.9	38.9	35.3	31.8	28.3	24.7	21.2	17.7
75°	45.9	38.9	35.3	28.3	28.3	24.7	21.2	17.7	14.1	14.1	10.6
77.5°	31.8	28.3	24.7	21.2	17.7	17.7	14.1	10.6	10.6	7.1	7.1
80°	21.2	17.7	14.1	10.6	10.6	10.6	7.1	7.1	7.1	3.5	3.5
82.5°	14.1	10.6	7.1	7.1	7.1	3.5	3.5	3.5	3.5	3.5	0.0
85°	3.5	3.5	3.5	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0
2.5°	1699.3	1695.8	1692.2	1688.7	1688.7	1681.6	1681.6	1678.1	1674.6	1674.6	1671.0
5°	1667.5	1660.4	1653.4	1649.8	1649.8	1639.2	1632.2	1628.6	1625.1	1621.6	1614.5
7.5°	1621.6	1614.5	1603.9	1596.8	1593.3	1582.7	1575.6	1565.0	1558.0	1554.4	1543.8
10°	1568.6	1558.0	1540.3	1536.8	1529.7	1519.1	1508.5	1497.9	1487.3	1476.7	1469.7
12.5°	1501.5	1483.8	1473.2	1462.6	1455.5	1444.9	1427.3	1413.1	1402.5	1395.5	1384.9
15°	1427.3	1409.6	1395.5	1384.9	1377.8	1363.7	1342.5	1331.9	1317.7	1303.6	1300.1
17.5°	1342.5	1321.3	1307.1	1296.5	1285.9	1275.3	1254.2	1243.6	1233.0	1218.8	1208.2
20°	1250.6	1229.4	1215.3	1201.2	1190.6	1180.0	1165.8	1148.2	1137.6	1130.5	1116.4
22.5°	1155.2	1137.6	1116.4	1109.3	1102.2	1077.5	1066.9	1052.8	1045.7	1035.1	1028.1
25°	1063.4	1038.7	1024.5	1013.9	1003.3	985.7	968.0	957.4	950.3	943.3	932.7
27.5°	960.9	946.8	929.1	915.0	911.5	893.8	876.1	865.5	854.9	847.9	837.3
30°	851.4	833.7	819.6	819.6	812.5	798.4	791.4	777.2	763.1	759.6	756.0
32.5°	738.4	727.8	717.2	710.1	710.1	699.5	688.9	685.4	678.3	671.2	671.2
35°	635.9	625.3	614.7	611.2	611.2	604.1	600.6	597.0	597.0	593.5	590.0
37.5°	537.0	522.9	512.3	512.3	512.3	512.3	512.3	512.3	512.3	519.3	515.8
40°	445.1	438.1	434.5	431.0	431.0	431.0	434.5	434.5	438.1	445.1	448.7
42.5°	363.9	363.9	360.3	360.3	356.8	360.3	363.9	367.4	370.9	370.9	378.0
45°	303.8	300.3	296.8	296.8	300.3	296.8	300.3	307.4	307.4	310.9	314.4
47.5°	247.3	243.8	243.8	243.8	243.8	243.8	243.8	247.3	250.8	250.8	254.4
50°	201.4	197.8	194.3	197.8	194.3	194.3	197.8	197.8	197.8	201.4	201.4
52.5°	159.0	155.4	151.9	151.9	151.9	151.9	151.9	151.9	151.9	151.9	151.9
55°	123.6	120.1	116.6	116.6	113.1	113.1	109.5	109.5	109.5	109.5	109.5
57.5°	98.9	91.9	88.3	84.8	84.8	77.7	74.2	74.2	70.7	70.7	70.7
60°	74.2	70.7	63.6	63.6	60.1	53.0	49.5	42.4	42.4	38.9	38.9
62.5°	56.5	53.0	49.5	45.9	42.4	35.3	28.3	21.2	14.1	14.1	17.7
65°	42.4	38.9	31.8	28.3	28.3	21.2	14.1	7.1	3.5	3.5	7.1
67.5°	31.8	28.3	21.2	17.7	14.1	10.6	3.5	0.0	0.0	0.0	0.0
70°	21.2	17.7	10.6	10.6	7.1	3.5	0.0	0.0	0.0	0.0	0.0
72.5°	14.1	10.6	7.1	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	7.1	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	3.5	0.0	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: P241997

CATALOG NUMBER: PRS440D010-S4M24-41SWWC-3000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0	1717.0
2.5°	1667.5	1667.5	1667.5	1667.5	1664.0	1664.0	1664.0	1664.0
5°	1614.5	1603.9	1603.9	1603.9	1603.9	1603.9	1600.4	1596.8
7.5°	1540.3	1533.2	1533.2	1529.7	1529.7	1526.2	1526.2	1522.6
10°	1462.6	1455.5	1455.5	1448.5	1448.5	1444.9	1441.4	1441.4
12.5°	1374.3	1367.2	1367.2	1367.2	1360.1	1360.1	1353.1	1353.1
15°	1285.9	1278.9	1275.3	1275.3	1268.3	1268.3	1264.8	1264.8
17.5°	1194.1	1190.6	1183.5	1183.5	1180.0	1172.9	1172.9	1172.9
20°	1109.3	1098.7	1095.2	1095.2	1084.6	1084.6	1081.0	1081.0
22.5°	1017.5	1010.4	1006.9	1003.3	996.3	999.8	992.7	992.7
25°	925.6	925.6	918.5	918.5	915.0	911.5	907.9	907.9
27.5°	837.3	837.3	833.7	833.7	830.2	826.7	826.7	830.2
30°	752.5	752.5	752.5	756.0	752.5	749.0	752.5	752.5
32.5°	671.2	671.2	674.8	671.2	674.8	674.8	674.8	674.8
35°	593.5	593.5	597.0	597.0	600.6	600.6	604.1	604.1
37.5°	515.8	522.9	522.9	522.9	529.9	529.9	533.5	533.5
40°	448.7	448.7	452.2	455.7	459.3	462.8	466.3	462.8
42.5°	381.5	381.5	385.1	388.6	392.1	395.7	399.2	399.2
45°	314.4	318.0	321.5	321.5	328.6	332.1	332.1	335.6
47.5°	254.4	261.4	261.4	261.4	265.0	268.5	272.0	268.5
50°	201.4	204.9	204.9	204.9	208.4	212.0	212.0	212.0
52.5°	151.9	155.4	155.4	155.4	159.0	159.0	159.0	162.5
55°	109.5	109.5	109.5	113.1	113.1	113.1	113.1	113.1
57.5°	70.7	70.7	70.7	74.2	77.7	77.7	74.2	74.2
60°	38.9	42.4	45.9	45.9	45.9	49.5	45.9	45.9
62.5°	21.2	24.7	24.7	24.7	24.7	24.7	24.7	24.7
65°	7.1	10.6	10.6	10.6	10.6	10.6	7.1	7.1
67.5°	3.5	3.5	3.5	3.5	3.5	0.0	3.5	3.5
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)