

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: P242007

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

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242007
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-4000K
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM SPECULAR
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2243.9 lumens
Efficiency: N/A
Efficacy: 59.0 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

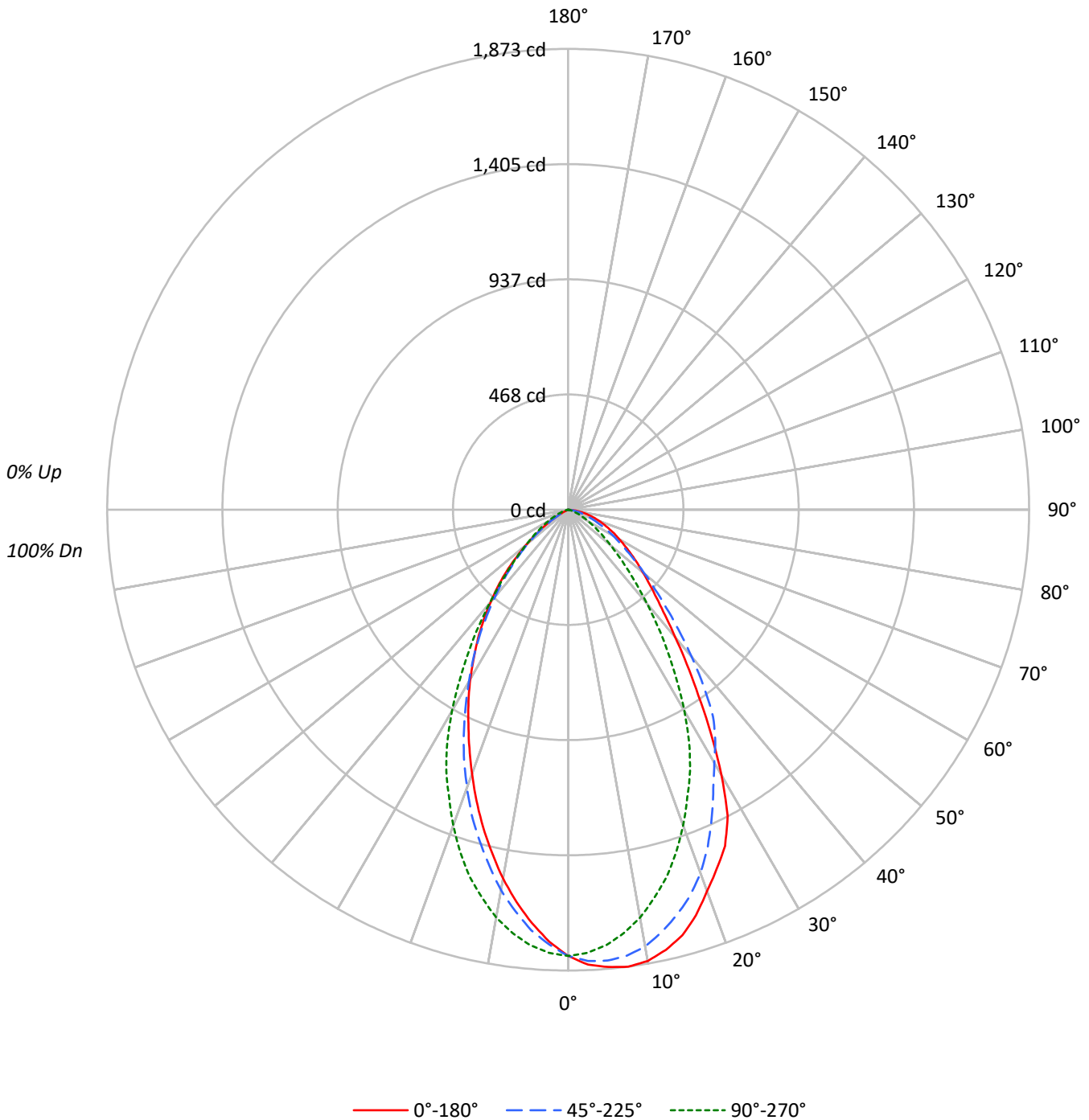
Input Watts (W): 38
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	138819	138819	138819
5°	143360	136483	129599
10°	144730	130810	118335
15°	141941	122423	105861
20°	134353	111252	93014
25°	127326	98957	80994
30°	110163	83444	70248
35°	86126	65905	59625
40°	67486	49590	48851
45°	54936	36361	38374
50°	47108	26662	26662
55°	41329	19924	15934
60°	36557	14283	7425
65°	33126	10143	1358
70°	30056	6692	0
75°	26498	4407	0
80°	21379	1631	0
85°	13086	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	166.8	7.4
10°-20°	433.5	19.3
20°-30°	547.2	24.4
30°-40°	485.1	21.6
40°-50°	321.8	14.3
50°-60°	175.2	7.8
60°-70°	78.7	3.5
70°-80°	30.5	1.4
80°-90°	5.1	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°	1147.4	51.1
0°-40°	1632.5	72.8
0°-60°	2129.5	94.9
0°-90°	2243.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2243.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1814	1814	1814	1814	1814	
5°	1866	1840	1776	1717	1687	178
15°	1791	1705	1545	1392	1336	501
25°	1508	1381	1172	1004	959	682
35°	922	1026	705	631	638	582
45°	508	564	336	325	354	398
55°	310	291	149	116	119	279
65°	183	142	56	4	8	183
75°	90	56	15	0	0	96
85°	15	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°	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6
2.5°	1850.9	1847.2	1847.2	1847.2	1843.5	1843.5	1843.5	1843.5	1839.7	1836.0	1836.0
5°	1865.8	1869.6	1865.8	1862.1	1862.1	1862.1	1858.4	1854.6	1850.9	1847.2	1839.7
7.5°	1873.3	1869.6	1869.6	1865.8	1862.1	1858.4	1854.6	1850.9	1843.5	1836.0	1828.5
10°	1862.1	1858.4	1854.6	1854.6	1843.5	1843.5	1839.7	1832.3	1821.1	1813.6	1802.4
12.5°	1832.3	1832.3	1828.5	1824.8	1813.6	1813.6	1806.1	1798.7	1787.5	1772.6	1757.6
15°	1791.2	1791.2	1783.7	1780.0	1772.6	1768.8	1761.4	1750.2	1739.0	1724.0	1705.4
17.5°	1727.8	1727.8	1724.0	1716.6	1712.8	1709.1	1697.9	1690.5	1675.5	1660.6	1645.7
20°	1649.4	1641.9	1641.9	1638.2	1630.7	1627.0	1623.3	1612.1	1600.9	1586.0	1571.0
22.5°	1578.5	1574.8	1563.6	1556.1	1544.9	1537.5	1533.7	1518.8	1511.3	1500.1	1481.5
25°	1507.6	1500.1	1496.4	1485.2	1470.3	1466.6	1455.4	1433.0	1418.0	1399.4	1380.7
27.5°	1403.1	1403.1	1406.8	1403.1	1388.2	1384.5	1377.0	1358.3	1328.5	1298.6	1276.2
30°	1246.4	1242.7	1246.4	1253.8	1265.0	1268.8	1276.2	1272.5	1250.1	1216.5	1186.7
32.5°	1078.5	1078.5	1093.4	1104.6	1115.8	1119.5	1127.0	1145.6	1145.6	1134.4	1112.0
35°	921.7	929.2	940.4	951.6	966.5	970.2	988.9	992.6	1015.0	1029.9	1026.2
37.5°	791.1	798.6	802.3	813.5	828.4	832.2	839.6	865.8	891.9	910.5	903.1
40°	675.4	675.4	686.6	697.8	712.8	716.5	727.7	742.6	772.5	779.9	779.9
42.5°	582.1	585.9	589.6	597.1	608.3	615.7	623.2	645.6	660.5	671.7	664.2
45°	507.5	511.2	515.0	522.4	529.9	533.6	541.1	556.0	567.2	567.2	563.5
47.5°	447.8	447.8	451.5	455.3	462.7	466.5	473.9	481.4	485.1	481.4	477.7
50°	395.6	399.3	399.3	403.0	406.8	414.2	417.9	417.9	417.9	414.2	406.8
52.5°	350.8	350.8	354.5	354.5	362.0	365.7	365.7	365.7	362.0	354.5	343.3
55°	309.7	309.7	309.7	313.5	320.9	320.9	320.9	317.2	313.5	302.3	291.1
57.5°	272.4	276.1	276.1	276.1	279.9	279.9	279.9	276.1	268.7	257.5	246.3
60°	238.8	242.6	242.6	242.6	246.3	246.3	242.6	238.8	231.4	216.4	209.0
62.5°	212.7	212.7	212.7	212.7	212.7	212.7	209.0	201.5	194.0	182.9	175.4
65°	182.9	182.9	182.9	186.6	182.9	179.1	179.1	171.7	164.2	153.0	141.8
67.5°	156.7	156.7	156.7	156.7	153.0	153.0	149.3	141.8	134.3	126.9	115.7
70°	134.3	134.3	134.3	130.6	126.9	126.9	123.1	115.7	108.2	100.8	93.3
72.5°	112.0	112.0	112.0	108.2	104.5	100.8	100.8	93.3	85.8	78.4	74.6
75°	89.6	89.6	89.6	85.8	82.1	78.4	78.4	70.9	67.2	63.4	56.0
77.5°	70.9	70.9	67.2	63.4	63.4	59.7	59.7	56.0	52.2	44.8	41.0
80°	48.5	48.5	48.5	48.5	44.8	41.0	41.0	37.3	33.6	29.9	26.1
82.5°	33.6	33.6	29.9	29.9	26.1	26.1	26.1	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	3.7	0.0	0.0	0.0	3.7	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°	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6
2.5°	1832.3	1828.5	1828.5	1821.1	1821.1	1817.3	1813.6	1809.9	1806.1	1802.4	1798.7
5°	1836.0	1828.5	1821.1	1813.6	1813.6	1806.1	1798.7	1791.2	1787.5	1776.3	1768.8
7.5°	1821.1	1809.9	1802.4	1791.2	1787.5	1780.0	1768.8	1757.6	1746.4	1735.2	1724.0
10°	1791.2	1776.3	1765.1	1753.9	1742.7	1739.0	1724.0	1712.8	1694.2	1683.0	1671.8
12.5°	1746.4	1731.5	1716.6	1697.9	1694.2	1686.7	1668.1	1649.4	1634.5	1615.8	1600.9
15°	1690.5	1675.5	1653.1	1638.2	1627.0	1615.8	1600.9	1582.2	1559.8	1544.9	1526.3
17.5°	1627.0	1604.6	1582.2	1563.6	1548.7	1541.2	1515.1	1492.7	1477.7	1459.1	1440.4
20°	1552.4	1526.3	1500.1	1474.0	1462.8	1447.9	1425.5	1403.1	1380.7	1365.8	1339.7
22.5°	1462.8	1436.7	1410.6	1380.7	1373.3	1358.3	1332.2	1309.8	1291.2	1265.0	1242.7
25°	1362.1	1339.7	1321.0	1294.9	1280.0	1265.0	1242.7	1216.5	1190.4	1171.7	1145.6
27.5°	1261.3	1246.4	1227.7	1201.6	1186.7	1171.7	1141.9	1115.8	1082.2	1063.5	1033.7
30°	1164.3	1153.1	1127.0	1100.8	1074.7	1063.5	1022.5	992.6	962.8	944.1	921.7
32.5°	1078.5	1044.9	1011.3	974.0	959.0	944.1	903.1	873.2	847.1	821.0	798.6
35°	981.4	929.2	891.9	858.3	839.6	824.7	791.1	757.5	735.1	705.3	690.4
37.5°	876.9	832.2	787.4	746.3	731.4	709.0	682.9	645.6	623.2	597.1	574.7
40°	765.0	735.1	686.6	645.6	626.9	612.0	578.4	548.6	518.7	496.3	481.4
42.5°	649.3	630.7	593.3	552.3	533.6	518.7	488.9	455.3	429.1	410.5	391.8
45°	552.3	537.4	507.5	470.2	447.8	432.9	403.0	373.2	350.8	335.9	324.7
47.5°	466.5	451.5	425.4	391.8	373.2	358.2	328.4	302.3	287.3	276.1	268.7
50°	391.8	373.2	350.8	328.4	309.7	294.8	268.7	250.0	235.1	223.9	220.2
52.5°	328.4	313.5	291.1	268.7	253.8	242.6	216.4	201.5	194.0	182.9	175.4
55°	276.1	261.2	242.6	220.2	209.0	197.8	179.1	167.9	156.7	149.3	141.8
57.5°	231.4	216.4	197.8	179.1	167.9	160.5	145.5	134.3	126.9	119.4	112.0
60°	194.0	179.1	164.2	145.5	138.1	130.6	119.4	108.2	100.8	93.3	85.8
62.5°	160.5	145.5	130.6	115.7	112.0	104.5	97.0	85.8	78.4	74.6	67.2
65°	134.3	119.4	104.5	93.3	89.6	82.1	74.6	67.2	59.7	56.0	52.2
67.5°	108.2	93.3	82.1	74.6	70.9	67.2	59.7	52.2	48.5	41.0	37.3
70°	85.8	74.6	63.4	56.0	52.2	48.5	44.8	41.0	33.6	29.9	26.1
72.5°	63.4	56.0	48.5	41.0	41.0	37.3	33.6	29.9	26.1	22.4	18.7
75°	48.5	41.0	37.3	29.9	29.9	26.1	22.4	18.7	14.9	14.9	11.2
77.5°	33.6	29.9	26.1	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°	14.9	11.2	7.5	7.5	7.5	3.7	3.7	3.7	3.7	3.7	0.0
85°	3.7	3.7	3.7	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°	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6
2.5°	1794.9	1791.2	1787.5	1783.7	1783.7	1776.3	1776.3	1772.6	1768.8	1768.8	1765.1
5°	1761.4	1753.9	1746.4	1742.7	1742.7	1731.5	1724.0	1720.3	1716.6	1712.8	1705.4
7.5°	1712.8	1705.4	1694.2	1686.7	1683.0	1671.8	1664.3	1653.1	1645.7	1641.9	1630.7
10°	1656.9	1645.7	1627.0	1623.3	1615.8	1604.6	1593.4	1582.2	1571.0	1559.8	1552.4
12.5°	1586.0	1567.3	1556.1	1544.9	1537.5	1526.3	1507.6	1492.7	1481.5	1474.0	1462.8
15°	1507.6	1488.9	1474.0	1462.8	1455.4	1440.4	1418.0	1406.8	1391.9	1377.0	1373.3
17.5°	1418.0	1395.7	1380.7	1369.5	1358.3	1347.1	1324.7	1313.6	1302.4	1287.4	1276.2
20°	1321.0	1298.6	1283.7	1268.8	1257.6	1246.4	1231.5	1212.8	1201.6	1194.1	1179.2
22.5°	1220.3	1201.6	1179.2	1171.7	1164.3	1138.2	1127.0	1112.0	1104.6	1093.4	1085.9
25°	1123.2	1097.1	1082.2	1071.0	1059.8	1041.1	1022.5	1011.3	1003.8	996.4	985.2
27.5°	1015.0	1000.1	981.4	966.5	962.8	944.1	925.5	914.3	903.1	895.6	884.4
30°	899.3	880.7	865.8	865.8	858.3	843.4	835.9	821.0	806.0	802.3	798.6
32.5°	779.9	768.7	757.5	750.1	750.1	738.9	727.7	723.9	716.5	709.0	709.0
35°	671.7	660.5	649.3	645.6	645.6	638.1	634.4	630.7	630.7	626.9	623.2
37.5°	567.2	552.3	541.1	541.1	541.1	541.1	541.1	541.1	541.1	548.6	544.8
40°	470.2	462.7	459.0	455.3	455.3	455.3	459.0	459.0	462.7	470.2	473.9
42.5°	384.4	384.4	380.6	380.6	376.9	380.6	384.4	388.1	391.8	391.8	399.3
45°	320.9	317.2	313.5	313.5	317.2	313.5	317.2	324.7	324.7	328.4	332.1
47.5°	261.2	257.5	257.5	257.5	257.5	257.5	257.5	261.2	264.9	264.9	268.7
50°	212.7	209.0	205.2	209.0	205.2	205.2	209.0	209.0	209.0	212.7	212.7
52.5°	167.9	164.2	160.5	160.5	160.5	160.5	160.5	160.5	160.5	160.5	160.5
55°	130.6	126.9	123.1	123.1	119.4	119.4	115.7	115.7	115.7	115.7	115.7
57.5°	104.5	97.0	93.3	89.6	89.6	82.1	78.4	78.4	74.6	74.6	74.6
60°	78.4	74.6	67.2	67.2	63.4	56.0	52.2	44.8	44.8	41.0	41.0
62.5°	59.7	56.0	52.2	48.5	44.8	37.3	29.9	22.4	14.9	14.9	18.7
65°	44.8	41.0	33.6	29.9	29.9	22.4	14.9	7.5	3.7	3.7	7.5
67.5°	33.6	29.9	22.4	18.7	14.9	11.2	3.7	0.0	0.0	0.0	0.0
70°	22.4	18.7	11.2	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	7.5	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	3.7	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: P242007

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6	1813.6
2.5°	1761.4	1761.4	1761.4	1761.4	1757.6	1757.6	1757.6	1757.6
5°	1705.4	1694.2	1694.2	1694.2	1694.2	1694.2	1690.5	1686.7
7.5°	1627.0	1619.6	1619.6	1615.8	1615.8	1612.1	1612.1	1608.4
10°	1544.9	1537.5	1537.5	1530.0	1530.0	1526.3	1522.5	1522.5
12.5°	1451.6	1444.2	1444.2	1444.2	1436.7	1436.7	1429.2	1429.2
15°	1358.3	1350.9	1347.1	1347.1	1339.7	1339.7	1335.9	1335.9
17.5°	1261.3	1257.6	1250.1	1250.1	1246.4	1238.9	1238.9	1238.9
20°	1171.7	1160.6	1156.8	1156.8	1145.6	1145.6	1141.9	1141.9
22.5°	1074.7	1067.3	1063.5	1059.8	1052.3	1056.1	1048.6	1048.6
25°	977.7	977.7	970.2	970.2	966.5	962.8	959.0	959.0
27.5°	884.4	884.4	880.7	880.7	876.9	873.2	873.2	876.9
30°	794.8	794.8	794.8	798.6	794.8	791.1	794.8	794.8
32.5°	709.0	709.0	712.8	709.0	712.8	712.8	712.8	712.8
35°	626.9	626.9	630.7	630.7	634.4	634.4	638.1	638.1
37.5°	544.8	552.3	552.3	552.3	559.8	559.8	563.5	563.5
40°	473.9	473.9	477.7	481.4	485.1	488.9	492.6	488.9
42.5°	403.0	403.0	406.8	410.5	414.2	417.9	421.7	421.7
45°	332.1	335.9	339.6	339.6	347.0	350.8	350.8	354.5
47.5°	268.7	276.1	276.1	276.1	279.9	283.6	287.3	283.6
50°	212.7	216.4	216.4	216.4	220.2	223.9	223.9	223.9
52.5°	160.5	164.2	164.2	164.2	167.9	167.9	167.9	171.7
55°	115.7	115.7	115.7	119.4	119.4	119.4	119.4	119.4
57.5°	74.6	74.6	74.6	78.4	82.1	82.1	78.4	78.4
60°	41.0	44.8	48.5	48.5	48.5	52.2	48.5	48.5
62.5°	22.4	26.1	26.1	26.1	26.1	26.1	26.1	26.1
65°	7.5	11.2	11.2	11.2	11.2	11.2	7.5	7.5
67.5°	3.7	3.7	3.7	3.7	3.7	0.0	3.7	3.7
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)