

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: P242012

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

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242012
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1802-584-62)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PRS440D010-S4M24-41SWWH-3000K
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM HAZE
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2032.4 lumens
Efficiency: N/A
Efficacy: 53.5 lumens/watt
Spacing Criteria (0/90/45): 1 / 0.96 / 1.05
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')
CIE Type: Direct

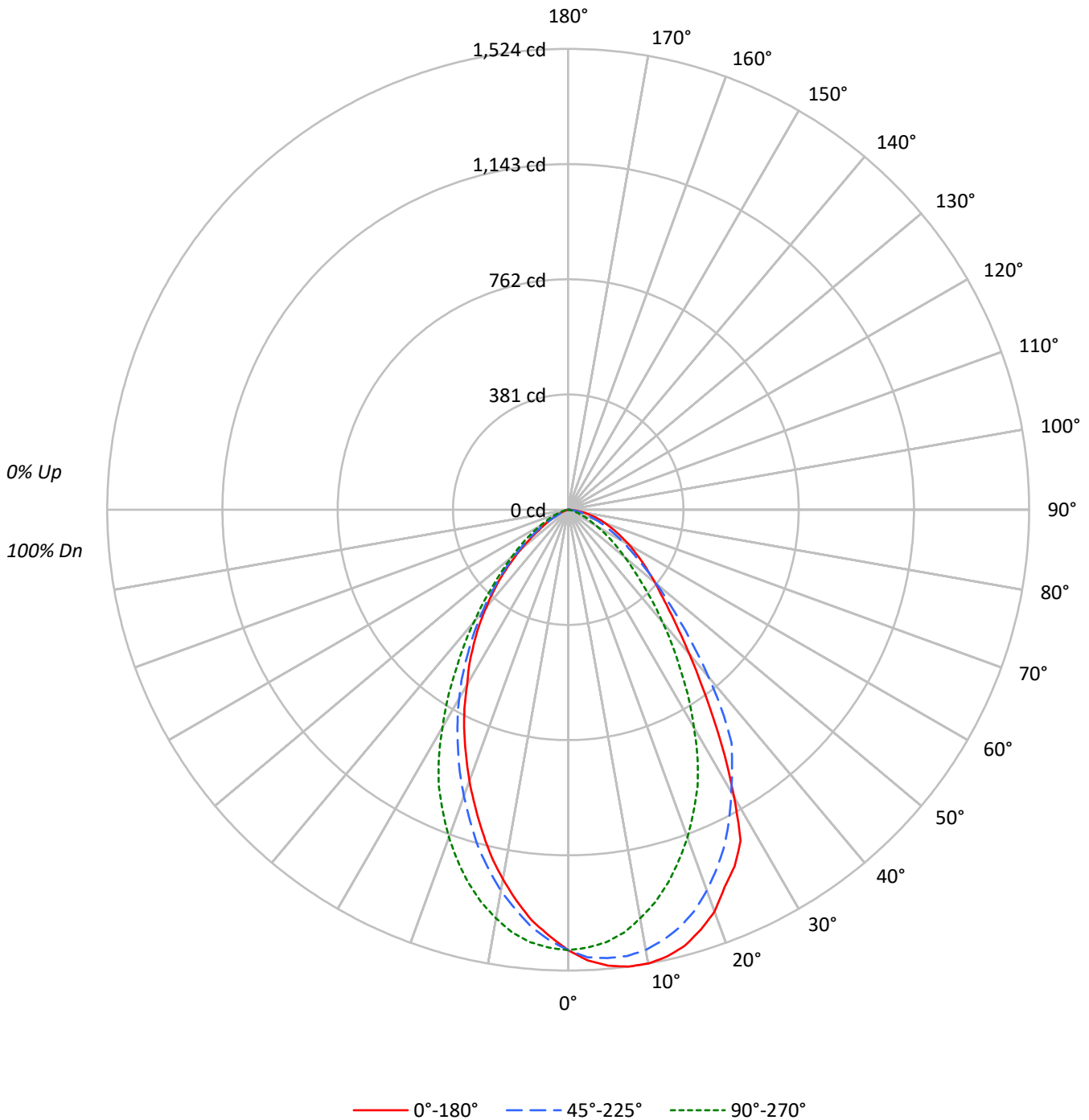
Input Watts (W): 38
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	102	109	106	103	101	102	100	97	98	96	95	95	93	92	90					90			
2	104	98	93	88	102	96	91	87	93	89	86	90	87	84	87	84	82	80					80			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	74	80	76	73	71					71			
4	91	81	74	69	89	80	73	68	78	72	68	76	71	67	74	69	66	64					64			
5	85	74	67	62	83	73	67	61	71	65	61	70	64	60	68	63	60	58					58			
6	79	68	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53					53			
7	75	63	56	51	73	62	56	51	61	55	50	60	54	50	59	53	50	48					48			
8	70	59	51	46	69	58	51	46	57	51	46	56	50	46	55	49	46	44					44			
9	66	55	48	43	65	54	47	43	53	47	42	52	46	42	51	46	42	41					41			
10	62	51	44	40	61	51	44	39	50	44	39	49	43	39	48	43	39	38					38			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	111508	111508	111508
5°	116283	110305	104873
10°	118452	106638	96464
15°	118247	101154	87144
20°	115211	93894	77766
25°	109903	85411	68688
30°	96887	73448	59067
35°	77650	60466	50879
40°	62180	48401	42046
45°	51288	37508	33687
50°	44631	29056	24423
55°	39634	22646	15574
60°	35730	16778	10287
65°	32022	12171	6412
70°	29273	8706	3961
75°	26144	5235	2100
80°	21819	3130	1543
85°	15545	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	135.3	6.7
10°-20°	360.7	17.7
20°-30°	474.7	23.4
30°-40°	440.7	21.7
40°-50°	307.8	15.1
50°-60°	180.7	8.9
60°-70°	89.7	4.4
70°-80°	36.1	1.8
80°-90°	6.7	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°	970.7	47.8
0°-40°	1411.4	69.4
0°-60°	1899.9	93.5
0°-90°	2032.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2032.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1457	1457	1457	1457	1457	
5°	1513	1489	1436	1386	1365	145
15°	1492	1429	1276	1153	1100	419
25°	1301	1224	1011	863	813	591
35°	831	941	647	576	544	523
45°	474	523	346	322	311	371
55°	297	276	170	138	117	267
65°	177	141	67	28	35	176
75°	88	60	18	7	7	94
85°	18	11	0	0	0	21
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°	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8
2.5°	1492.2	1488.7	1488.7	1488.7	1488.7	1485.1	1485.1	1485.1	1481.6	1481.6	1481.6
5°	1513.4	1513.4	1509.9	1509.9	1506.3	1506.3	1506.3	1502.8	1499.3	1495.7	1488.7
7.5°	1524.0	1524.0	1520.5	1520.5	1517.0	1513.4	1513.4	1506.3	1502.8	1495.7	1488.7
10°	1524.0	1524.0	1520.5	1520.5	1513.4	1509.9	1509.9	1506.3	1495.7	1488.7	1478.1
12.5°	1513.4	1513.4	1509.9	1506.3	1502.8	1499.3	1495.7	1488.7	1478.1	1467.4	1456.8
15°	1492.2	1492.2	1488.7	1485.1	1478.1	1474.5	1471.0	1463.9	1453.3	1439.2	1428.6
17.5°	1456.8	1456.8	1453.3	1449.8	1446.2	1439.2	1435.6	1425.0	1414.4	1403.8	1389.7
20°	1414.4	1410.9	1410.9	1407.3	1400.3	1400.3	1393.2	1382.6	1372.0	1354.3	1340.2
22.5°	1350.8	1354.3	1354.3	1347.2	1340.2	1340.2	1333.1	1329.5	1315.4	1301.3	1283.6
25°	1301.3	1297.7	1297.7	1290.6	1280.0	1280.0	1276.5	1265.9	1251.8	1237.6	1223.5
27.5°	1234.1	1230.5	1230.5	1230.5	1219.9	1219.9	1212.9	1198.7	1184.6	1174.0	1152.7
30°	1096.2	1106.8	1106.8	1117.4	1128.0	1135.1	1142.1	1135.1	1117.4	1099.7	1078.5
32.5°	961.8	968.9	975.9	986.5	1000.7	1011.3	1021.9	1032.5	1046.7	1029.0	1007.8
35°	831.0	838.0	841.6	855.7	873.4	876.9	891.1	915.8	930.0	944.1	940.6
37.5°	717.8	721.3	728.4	739.0	753.2	763.8	774.4	792.1	816.8	838.0	834.5
40°	622.3	618.8	629.4	632.9	647.1	657.7	671.8	686.0	710.7	721.3	721.3
42.5°	541.0	541.0	544.5	551.6	562.2	569.3	576.4	590.5	611.7	615.3	615.3
45°	473.8	473.8	477.4	484.4	491.5	491.5	502.1	516.3	519.8	523.3	523.3
47.5°	417.3	420.8	420.8	424.3	427.9	434.9	438.5	445.5	445.5	445.5	445.5
50°	374.8	374.8	374.8	378.4	381.9	385.4	385.4	385.4	385.4	381.9	378.4
52.5°	332.4	332.4	332.4	335.9	335.9	339.5	339.5	335.9	332.4	328.8	325.3
55°	297.0	293.5	297.0	297.0	300.6	300.6	297.0	293.5	290.0	282.9	275.8
57.5°	261.7	261.7	261.7	261.7	265.2	261.7	261.7	258.1	251.1	244.0	236.9
60°	233.4	229.8	229.8	229.8	233.4	229.8	229.8	222.8	219.2	208.6	201.6
62.5°	201.6	201.6	201.6	205.1	201.6	201.6	198.0	190.9	187.4	180.3	173.3
65°	176.8	176.8	176.8	176.8	173.3	169.7	169.7	162.7	159.1	152.0	141.4
67.5°	152.0	152.0	152.0	152.0	148.5	145.0	145.0	137.9	134.4	127.3	120.2
70°	130.8	127.3	130.8	127.3	123.8	120.2	120.2	116.7	109.6	102.5	95.5
72.5°	109.6	109.6	109.6	106.1	102.5	99.0	99.0	91.9	88.4	84.9	77.8
75°	88.4	88.4	88.4	84.9	81.3	81.3	77.8	74.3	70.7	67.2	60.1
77.5°	67.2	67.2	67.2	67.2	63.6	60.1	60.1	56.6	53.0	49.5	46.0
80°	49.5	49.5	49.5	46.0	46.0	46.0	42.4	42.4	38.9	35.4	31.8
82.5°	31.8	31.8	31.8	31.8	28.3	28.3	28.3	24.8	24.8	21.2	17.7
85°	17.7	17.7	17.7	17.7	14.1	14.1	14.1	14.1	14.1	10.6	10.6
87.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
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°	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8
2.5°	1478.1	1474.5	1471.0	1467.4	1467.4	1463.9	1460.4	1456.8	1453.3	1449.8	1449.8
5°	1485.1	1478.1	1474.5	1467.4	1463.9	1463.9	1456.8	1449.8	1442.7	1435.6	1428.6
7.5°	1481.6	1474.5	1463.9	1456.8	1453.3	1446.2	1439.2	1428.6	1417.9	1410.9	1400.3
10°	1467.4	1456.8	1446.2	1432.1	1428.6	1421.5	1410.9	1396.7	1386.1	1372.0	1361.4
12.5°	1446.2	1432.1	1417.9	1403.8	1396.7	1389.7	1375.5	1357.8	1343.7	1329.5	1311.9
15°	1410.9	1400.3	1379.0	1364.9	1354.3	1347.2	1329.5	1311.9	1294.2	1276.5	1262.4
17.5°	1368.4	1354.3	1336.6	1315.4	1304.8	1297.7	1276.5	1251.8	1234.1	1216.4	1202.2
20°	1326.0	1304.8	1283.6	1262.4	1248.2	1241.1	1216.4	1191.6	1174.0	1152.7	1131.5
22.5°	1269.4	1244.7	1223.5	1198.7	1188.1	1174.0	1152.7	1124.5	1099.7	1082.0	1057.3
25°	1202.2	1184.6	1156.3	1131.5	1117.4	1106.8	1078.5	1057.3	1032.5	1011.3	986.5
27.5°	1135.1	1110.3	1089.1	1064.3	1046.7	1032.5	1007.8	979.5	954.7	926.4	905.2
30°	1060.8	1043.1	1014.8	975.9	958.3	944.1	912.3	880.5	855.7	831.0	813.3
32.5°	986.5	951.2	919.4	884.0	866.3	852.2	816.8	792.1	763.8	742.6	724.9
35°	898.1	862.8	827.4	785.0	770.9	753.2	721.3	696.6	668.3	647.1	632.9
37.5°	809.7	767.3	728.4	696.6	682.5	661.2	632.9	604.7	583.4	565.8	548.1
40°	714.3	678.9	643.6	604.7	590.5	576.4	548.1	526.9	498.6	484.4	470.3
42.5°	608.2	594.1	558.7	526.9	509.2	495.0	466.8	445.5	427.9	413.7	399.6
45°	516.3	505.7	480.9	449.1	438.5	424.3	399.6	374.8	360.7	346.5	335.9
47.5°	438.5	427.9	410.2	381.9	367.7	357.1	335.9	318.2	304.1	290.0	282.9
50°	371.3	360.7	343.0	325.3	314.7	300.6	282.9	268.7	254.6	244.0	236.9
52.5°	314.7	304.1	286.4	272.3	265.2	254.6	236.9	226.3	212.2	205.1	198.0
55°	268.7	258.1	244.0	229.8	222.8	212.2	198.0	183.9	176.8	169.7	162.7
57.5°	229.8	215.7	205.1	194.5	187.4	176.8	162.7	155.6	145.0	137.9	130.8
60°	194.5	183.9	173.3	159.1	152.0	148.5	134.4	123.8	116.7	109.6	102.5
62.5°	162.7	152.0	141.4	130.8	127.3	120.2	109.6	99.0	91.9	84.9	81.3
65°	134.4	127.3	116.7	106.1	102.5	95.5	84.9	77.8	70.7	67.2	63.6
67.5°	113.2	102.5	95.5	84.9	81.3	77.8	67.2	60.1	56.6	53.0	46.0
70°	88.4	81.3	74.3	67.2	63.6	60.1	53.0	46.0	42.4	38.9	35.4
72.5°	70.7	63.6	56.6	49.5	46.0	46.0	38.9	35.4	31.8	28.3	24.8
75°	56.6	49.5	42.4	38.9	35.4	31.8	28.3	24.8	21.2	17.7	17.7
77.5°	38.9	35.4	31.8	24.8	24.8	21.2	17.7	17.7	14.1	14.1	10.6
80°	28.3	24.8	21.2	17.7	14.1	14.1	10.6	10.6	7.1	7.1	7.1
82.5°	17.7	14.1	10.6	10.6	10.6	7.1	7.1	7.1	3.5	3.5	3.5
85°	7.1	7.1	3.5	3.5	3.5	3.5	3.5	3.5	0.0	0.0	0.0
87.5°	3.5	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°	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8
2.5°	1446.2	1442.7	1439.2	1435.6	1435.6	1435.6	1428.6	1428.6	1425.0	1421.5	1421.5
5°	1425.0	1417.9	1410.9	1410.9	1403.8	1400.3	1396.7	1389.7	1386.1	1382.6	1379.0
7.5°	1389.7	1382.6	1372.0	1368.4	1364.9	1357.8	1347.2	1343.7	1333.1	1329.5	1326.0
10°	1350.8	1336.6	1329.5	1318.9	1318.9	1304.8	1297.7	1287.1	1280.0	1273.0	1265.9
12.5°	1301.3	1283.6	1269.4	1265.9	1258.8	1244.7	1237.6	1223.5	1216.4	1209.3	1202.2
15°	1244.7	1230.5	1212.9	1205.8	1198.7	1184.6	1174.0	1163.4	1152.7	1142.1	1135.1
17.5°	1181.0	1166.9	1145.7	1138.6	1135.1	1117.4	1103.2	1089.1	1078.5	1071.4	1060.8
20°	1113.8	1096.2	1078.5	1071.4	1064.3	1050.2	1036.1	1021.9	1007.8	997.2	990.1
22.5°	1039.6	1018.4	1004.2	997.2	990.1	972.4	961.8	947.7	937.0	926.4	919.4
25°	968.9	947.7	930.0	922.9	912.3	898.1	887.5	876.9	862.8	852.2	845.1
27.5°	887.5	866.3	852.2	848.6	838.0	827.4	813.3	799.1	792.1	781.5	774.4
30°	799.1	785.0	774.4	763.8	760.2	749.6	742.6	732.0	721.3	710.7	700.1
32.5°	707.2	696.6	682.5	682.5	678.9	671.8	664.8	657.7	650.6	643.6	632.9
35°	622.3	608.2	601.1	601.1	594.1	590.5	590.5	583.4	576.4	572.8	569.3
37.5°	537.5	530.4	519.8	519.8	516.3	516.3	512.7	509.2	509.2	509.2	505.7
40°	459.7	452.6	445.5	442.0	442.0	442.0	438.5	442.0	442.0	442.0	442.0
42.5°	389.0	385.4	378.4	378.4	378.4	378.4	378.4	378.4	378.4	381.9	381.9
45°	332.4	325.3	321.8	318.2	321.8	318.2	318.2	321.8	321.8	325.3	321.8
47.5°	275.8	275.8	268.7	268.7	268.7	268.7	268.7	268.7	268.7	268.7	272.3
50°	233.4	226.3	226.3	222.8	222.8	222.8	222.8	222.8	219.2	222.8	222.8
52.5°	194.5	187.4	187.4	183.9	183.9	180.3	180.3	176.8	176.8	176.8	176.8
55°	159.1	152.0	152.0	148.5	148.5	145.0	145.0	141.4	137.9	137.9	134.4
57.5°	127.3	120.2	120.2	116.7	116.7	113.2	109.6	106.1	102.5	102.5	99.0
60°	99.0	95.5	91.9	91.9	88.4	84.9	81.3	74.3	70.7	70.7	67.2
62.5°	77.8	74.3	70.7	67.2	67.2	60.1	56.6	49.5	46.0	42.4	46.0
65°	60.1	56.6	53.0	49.5	46.0	42.4	35.4	31.8	28.3	31.8	31.8
67.5°	42.4	38.9	35.4	35.4	31.8	28.3	21.2	21.2	21.2	21.2	24.8
70°	31.8	28.3	24.8	21.2	17.7	14.1	14.1	14.1	14.1	14.1	17.7
72.5°	21.2	17.7	14.1	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
75°	14.1	10.6	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
77.5°	10.6	7.1	3.5	3.5	3.5	3.5	3.5	7.1	7.1	3.5	7.1
80°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
82.5°	0.0	0.0	0.0	3.5	3.5	0.0	3.5	3.5	0.0	3.5	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: P242012

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8	1456.8
2.5°	1421.5	1417.9	1417.9	1414.4	1414.4	1417.9	1414.4	1410.9
5°	1372.0	1372.0	1372.0	1368.4	1364.9	1364.9	1364.9	1364.9
7.5°	1318.9	1315.4	1315.4	1315.4	1311.9	1304.8	1304.8	1304.8
10°	1258.8	1251.8	1251.8	1248.2	1248.2	1244.7	1244.7	1241.1
12.5°	1195.2	1188.1	1184.6	1181.0	1177.5	1174.0	1177.5	1174.0
15°	1128.0	1120.9	1113.8	1113.8	1110.3	1103.2	1103.2	1099.7
17.5°	1053.7	1043.1	1043.1	1039.6	1032.5	1032.5	1029.0	1025.4
20°	979.5	972.4	968.9	965.3	961.8	954.7	954.7	954.7
22.5°	905.2	898.1	894.6	894.6	891.1	884.0	884.0	880.5
25°	834.5	827.4	823.9	820.4	816.8	816.8	813.3	813.3
27.5°	767.3	756.7	756.7	749.6	746.1	742.6	742.6	742.6
30°	693.1	689.5	682.5	686.0	675.4	675.4	675.4	668.3
32.5°	625.9	622.3	618.8	618.8	611.7	608.2	611.7	608.2
35°	562.2	558.7	555.2	551.6	548.1	548.1	544.5	544.5
37.5°	502.1	495.0	491.5	491.5	488.0	488.0	484.4	484.4
40°	438.5	438.5	434.9	431.4	427.9	424.3	420.8	420.8
42.5°	381.9	378.4	374.8	374.8	371.3	364.2	364.2	364.2
45°	325.3	321.8	318.2	318.2	314.7	311.2	307.6	311.2
47.5°	268.7	268.7	268.7	265.2	261.7	258.1	254.6	254.6
50°	222.8	219.2	219.2	219.2	212.2	208.6	205.1	205.1
52.5°	176.8	173.3	173.3	173.3	169.7	162.7	159.1	159.1
55°	134.4	134.4	134.4	130.8	127.3	123.8	120.2	116.7
57.5°	95.5	95.5	95.5	95.5	95.5	95.5	91.9	91.9
60°	67.2	70.7	70.7	74.3	74.3	70.7	67.2	67.2
62.5°	49.5	53.0	53.0	53.0	53.0	49.5	49.5	49.5
65°	35.4	35.4	35.4	35.4	35.4	35.4	35.4	35.4
67.5°	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8
70°	17.7	17.7	17.7	17.7	17.7	17.7	14.1	17.7
72.5°	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
75°	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
77.5°	3.5	7.1	3.5	3.5	3.5	3.5	3.5	3.5
80°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
82.5°	3.5	3.5	3.5	0.0	0.0	0.0	0.0	3.5
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)