

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: P242027

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

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242027
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1802-584-63)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PRS440D010-S4M24-41SWWMW-3000K
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM MATTE WHITE
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2099.5 lumens
Efficiency: N/A
Efficacy: 55.3 lumens/watt
Spacing Criteria (0/90/45): 1 / 0.97 / 1.07
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')
CIE Type: Direct

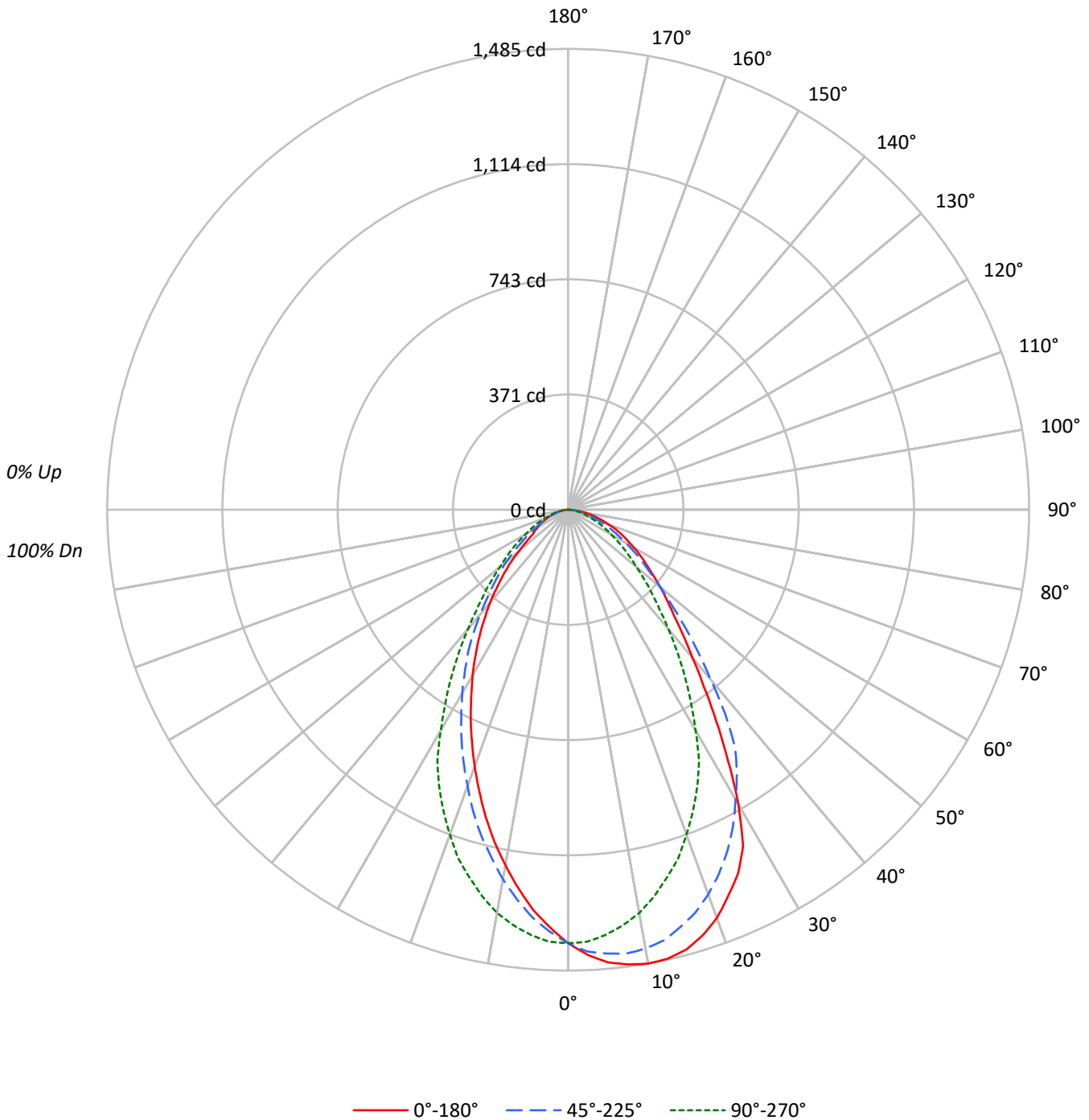
Input Watts (W): 38
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	107	104	101	109	105	102	99	101	98	96	97	95	93	94	92	91	89					89			
2	103	97	91	86	101	95	90	85	91	87	84	88	85	82	85	82	80	78					78			
3	96	87	81	75	94	86	80	75	83	78	73	80	76	72	78	74	71	69					69			
4	89	79	72	66	87	78	71	66	76	70	65	73	68	64	71	67	63	62					62			
5	83	72	65	59	81	71	64	59	69	63	58	67	62	58	66	61	57	55					55			
6	78	66	59	53	76	65	58	53	64	57	53	62	57	52	61	56	52	50					50			
7	73	61	54	48	71	60	53	48	59	53	48	58	52	48	56	51	47	45					45			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	44	53	47	43	42					42			
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38					38			
10	61	49	42	37	60	49	42	37	48	41	37	47	41	37	46	41	37	35					35			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	106916	106916	106916
5°	112488	105695	99441
10°	115436	102518	90424
15°	116290	97240	81264
20°	114063	90734	71722
25°	109303	83029	62717
30°	96887	72511	54383
35°	77650	61130	46590
40°	62190	50170	39219
45°	52057	41340	31771
50°	45894	34105	24423
55°	41049	29252	18870
60°	37353	24356	17329
65°	34593	21136	16011
70°	30862	17411	14256
75°	28243	14639	12539
80°	24949	12475	10932
85°	15545	9309	9309



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	129.7	6.2
10°-20°	346.9	16.5
20°-30°	460.5	21.9
30°-40°	433.9	20.7
40°-50°	317.6	15.1
50°-60°	208.6	9.9
60°-70°	125.7	6.0
70°-80°	61.9	2.9
80°-90°	14.8	0.7
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°	937.1	44.6
0°-40°	1371.1	65.3
0°-60°	1897.2	90.4
0°-90°	2099.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2099.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1397	1397	1397	1397	1397	
5°	1464	1436	1376	1319	1294	140
15°	1468	1393	1227	1086	1026	412
25°	1294	1213	983	813	743	587
35°	831	937	654	562	499	523
45°	481	527	382	340	294	378
55°	308	290	219	184	141	277
65°	191	156	117	85	88	189
75°	96	71	50	42	42	101
85°	18	14	11	11	11	24
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°	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8
2.5°	1435.7	1435.7	1435.7	1435.7	1432.2	1432.2	1432.2	1428.6	1428.6	1425.1	1425.1
5°	1464.0	1464.0	1460.4	1460.4	1456.9	1456.9	1453.4	1449.8	1446.3	1442.8	1435.7
7.5°	1478.1	1478.1	1474.6	1474.6	1471.1	1471.1	1467.5	1464.0	1456.9	1449.8	1442.8
10°	1485.2	1481.7	1481.7	1478.1	1474.6	1471.1	1467.5	1464.0	1453.4	1446.3	1435.7
12.5°	1481.7	1478.1	1478.1	1471.1	1467.5	1464.0	1460.4	1453.4	1442.8	1432.2	1421.5
15°	1467.5	1464.0	1460.4	1456.9	1449.8	1446.3	1442.8	1432.2	1421.5	1407.4	1393.3
17.5°	1439.2	1435.7	1435.7	1428.6	1421.5	1418.0	1414.5	1403.9	1389.7	1375.6	1361.4
20°	1400.3	1396.8	1393.3	1389.7	1382.7	1379.1	1375.6	1365.0	1350.8	1336.7	1319.0
22.5°	1347.3	1343.8	1343.8	1340.2	1333.1	1329.6	1326.1	1315.5	1304.9	1287.2	1269.5
25°	1294.2	1290.7	1287.2	1283.6	1276.6	1269.5	1266.0	1255.3	1244.7	1234.1	1212.9
27.5°	1220.0	1223.5	1223.5	1220.0	1216.5	1212.9	1209.4	1195.2	1181.1	1166.9	1149.3
30°	1096.2	1089.1	1096.2	1106.8	1117.4	1121.0	1131.6	1131.6	1117.4	1099.8	1078.5
32.5°	958.3	961.8	965.4	979.5	993.7	997.2	1004.3	1025.5	1043.2	1032.6	1011.4
35°	831.0	834.5	841.6	852.2	862.8	880.5	887.6	905.3	922.9	944.2	937.1
37.5°	717.8	721.4	728.5	735.5	753.2	760.3	774.4	788.6	816.9	834.5	831.0
40°	622.4	625.9	629.4	636.5	657.7	661.3	668.3	689.6	707.2	721.4	714.3
42.5°	548.1	544.6	551.6	558.7	569.3	572.9	579.9	594.1	608.2	615.3	615.3
45°	480.9	484.5	488.0	495.1	498.6	505.7	509.2	519.8	523.4	526.9	526.9
47.5°	431.4	431.4	435.0	438.5	442.0	445.6	449.1	452.6	452.6	452.6	449.1
50°	385.4	385.4	389.0	392.5	392.5	396.1	396.1	396.1	392.5	389.0	385.4
52.5°	343.0	343.0	346.5	350.1	350.1	350.1	350.1	346.5	343.0	339.5	332.4
55°	307.6	307.6	311.2	311.2	311.2	311.2	311.2	304.1	297.0	293.5	290.0
57.5°	275.8	275.8	275.8	275.8	275.8	275.8	272.3	265.2	261.7	254.6	251.1
60°	244.0	244.0	244.0	244.0	244.0	240.5	236.9	233.4	226.3	219.2	215.7
62.5°	215.7	215.7	215.7	215.7	212.2	208.6	208.6	201.6	198.0	191.0	183.9
65°	191.0	191.0	187.4	187.4	183.9	180.3	180.3	173.3	169.7	162.7	155.6
67.5°	166.2	162.7	162.7	162.7	159.1	155.6	152.1	148.5	145.0	137.9	130.8
70°	137.9	137.9	141.4	137.9	134.4	130.8	130.8	123.8	120.2	116.7	109.6
72.5°	116.7	116.7	116.7	113.2	113.2	109.6	106.1	102.5	99.0	95.5	88.4
75°	95.5	95.5	95.5	91.9	88.4	88.4	88.4	81.3	81.3	74.3	70.7
77.5°	74.3	74.3	74.3	70.7	70.7	70.7	67.2	63.7	60.1	60.1	56.6
80°	56.6	56.6	53.0	53.0	49.5	49.5	49.5	46.0	46.0	42.4	38.9
82.5°	38.9	35.4	35.4	35.4	35.4	35.4	31.8	31.8	28.3	28.3	24.8
85°	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	14.1	14.1	14.1
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°	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8
2.5°	1418.0	1418.0	1414.5	1410.9	1407.4	1407.4	1403.9	1400.3	1396.8	1393.3	1386.2
5°	1432.2	1425.1	1418.0	1410.9	1410.9	1407.4	1396.8	1389.7	1382.7	1375.6	1368.5
7.5°	1432.2	1421.5	1414.5	1403.9	1400.3	1393.3	1382.7	1372.0	1361.4	1350.8	1340.2
10°	1425.1	1410.9	1400.3	1386.2	1379.1	1372.0	1357.9	1343.8	1329.6	1319.0	1301.3
12.5°	1403.9	1389.7	1375.6	1357.9	1350.8	1343.8	1326.1	1308.4	1294.2	1276.6	1262.4
15°	1375.6	1361.4	1343.8	1326.1	1315.5	1308.4	1287.2	1266.0	1244.7	1227.1	1209.4
17.5°	1343.8	1322.5	1304.9	1283.6	1273.0	1258.9	1237.7	1216.5	1195.2	1177.6	1156.3
20°	1297.8	1280.1	1255.3	1230.6	1220.0	1205.8	1184.6	1159.9	1138.7	1113.9	1092.7
22.5°	1251.8	1227.1	1202.3	1174.0	1163.4	1149.3	1124.5	1096.2	1075.0	1050.2	1025.5
25°	1191.7	1166.9	1142.2	1117.4	1099.8	1089.1	1064.4	1036.1	1011.4	983.1	958.3
27.5°	1128.0	1103.3	1078.5	1050.2	1036.1	1022.0	990.1	961.8	933.6	912.3	884.0
30°	1057.3	1036.1	1007.8	968.9	951.2	937.1	901.7	869.9	841.6	820.4	802.7
32.5°	986.6	954.8	915.9	877.0	859.3	841.6	806.3	778.0	756.7	735.5	714.3
35°	894.7	859.3	823.9	788.6	770.9	753.2	724.9	696.6	671.9	654.2	636.5
37.5°	809.8	770.9	732.0	700.2	682.5	668.3	636.5	615.3	594.1	576.4	558.7
40°	707.2	686.0	643.6	615.3	597.6	583.5	555.2	534.0	516.3	502.1	488.0
42.5°	608.2	597.6	562.3	534.0	519.8	509.2	484.5	466.8	449.1	435.0	427.9
45°	519.8	505.7	491.5	463.2	452.6	442.0	420.8	403.1	389.0	381.9	371.3
47.5°	445.6	435.0	420.8	399.6	389.0	381.9	364.2	350.1	339.5	332.4	325.3
50°	378.4	371.3	360.7	346.5	335.9	328.9	314.7	304.1	293.5	286.4	282.9
52.5°	325.3	318.3	307.6	297.0	290.0	282.9	272.3	261.7	258.1	251.1	244.0
55°	279.4	272.3	265.2	254.6	251.1	247.5	236.9	229.9	222.8	219.2	215.7
57.5°	244.0	236.9	226.3	219.2	215.7	212.2	205.1	198.0	191.0	187.4	183.9
60°	208.6	201.6	194.5	187.4	183.9	180.3	176.8	169.7	162.7	159.1	159.1
62.5°	180.3	173.3	166.2	159.1	159.1	155.6	148.5	145.0	141.4	137.9	134.4
65°	152.1	145.0	141.4	134.4	130.8	130.8	127.3	120.2	116.7	116.7	113.2
67.5°	127.3	123.8	116.7	113.2	109.6	109.6	102.5	102.5	99.0	95.5	91.9
70°	106.1	99.0	95.5	91.9	91.9	88.4	84.9	84.9	81.3	77.8	74.3
72.5°	84.9	81.3	77.8	74.3	74.3	70.7	70.7	67.2	63.7	63.7	60.1
75°	67.2	63.7	63.7	56.6	56.6	56.6	53.0	53.0	49.5	49.5	46.0
77.5°	53.0	49.5	46.0	46.0	42.4	42.4	42.4	38.9	38.9	38.9	35.4
80°	35.4	35.4	31.8	31.8	31.8	31.8	28.3	28.3	28.3	28.3	24.8
82.5°	24.8	21.2	21.2	21.2	21.2	21.2	17.7	17.7	17.7	17.7	17.7
85°	14.1	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8
2.5°	1382.7	1379.1	1375.6	1375.6	1372.0	1368.5	1368.5	1365.0	1361.4	1357.9	1354.4
5°	1361.4	1354.4	1347.3	1343.8	1340.2	1336.7	1329.6	1322.5	1319.0	1311.9	1308.4
7.5°	1329.6	1319.0	1311.9	1304.9	1301.3	1290.7	1283.6	1276.6	1266.0	1262.4	1255.3
10°	1290.7	1276.6	1262.4	1258.9	1251.8	1241.2	1230.6	1216.5	1209.4	1202.3	1195.2
12.5°	1244.7	1230.6	1212.9	1205.8	1198.8	1184.6	1170.5	1159.9	1145.7	1138.7	1128.0
15°	1191.7	1174.0	1156.3	1149.3	1142.2	1124.5	1110.4	1096.2	1085.6	1071.5	1060.9
17.5°	1135.1	1113.9	1092.7	1085.6	1078.5	1060.9	1046.7	1029.0	1018.4	1004.3	993.7
20°	1071.5	1050.2	1029.0	1025.5	1011.4	993.7	976.0	961.8	947.7	937.1	922.9
22.5°	1004.3	983.1	965.4	954.8	944.2	926.5	908.8	894.7	880.5	862.8	852.2
25°	940.6	915.9	894.7	891.1	877.0	862.8	845.2	827.5	813.3	799.2	788.6
27.5°	866.4	848.7	827.5	816.9	809.8	792.1	778.0	760.3	746.1	732.0	721.4
30°	781.5	763.8	749.7	742.6	735.5	724.9	707.2	696.6	682.5	668.3	657.7
32.5°	700.2	689.6	675.4	668.3	664.8	650.7	643.6	633.0	618.8	608.2	597.6
35°	618.8	611.8	597.6	597.6	590.5	583.5	576.4	569.3	562.3	551.6	541.0
37.5°	548.1	541.0	530.4	523.4	523.4	516.3	512.7	505.7	502.1	495.1	488.0
40°	480.9	470.3	463.2	459.7	456.2	452.6	445.6	442.0	442.0	438.5	431.4
42.5°	413.7	410.2	403.1	399.6	403.1	396.1	396.1	392.5	385.4	381.9	378.4
45°	364.2	357.2	357.2	353.6	353.6	350.1	346.5	343.0	339.5	332.4	332.4
47.5°	318.3	314.7	311.2	311.2	307.6	307.6	304.1	300.6	297.0	293.5	286.4
50°	279.4	275.8	272.3	272.3	268.8	268.8	265.2	261.7	258.1	251.1	244.0
52.5°	244.0	240.5	236.9	236.9	233.4	233.4	229.9	222.8	219.2	215.7	208.6
55°	212.2	208.6	205.1	205.1	201.6	201.6	198.0	191.0	183.9	180.3	173.3
57.5°	180.3	180.3	176.8	176.8	173.3	169.7	166.2	159.1	155.6	152.1	145.0
60°	155.6	152.1	152.1	148.5	148.5	145.0	137.9	134.4	127.3	123.8	116.7
62.5°	130.8	130.8	127.3	123.8	123.8	116.7	113.2	109.6	106.1	99.0	102.5
65°	109.6	106.1	106.1	102.5	102.5	95.5	91.9	88.4	84.9	84.9	88.4
67.5°	91.9	88.4	84.9	84.9	81.3	77.8	74.3	74.3	74.3	74.3	74.3
70°	74.3	70.7	67.2	67.2	67.2	63.7	60.1	60.1	60.1	63.7	63.7
72.5°	60.1	56.6	53.0	53.0	49.5	49.5	49.5	49.5	49.5	53.0	53.0
75°	46.0	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4
77.5°	35.4	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8
80°	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8
82.5°	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
85°	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	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



TEST NUMBER: P242027

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8	1396.8
2.5°	1354.4	1354.4	1354.4	1350.8	1350.8	1350.8	1350.8	1347.3
5°	1304.9	1304.9	1301.3	1301.3	1297.8	1297.8	1297.8	1294.2
7.5°	1248.3	1244.7	1244.7	1241.2	1237.7	1234.1	1234.1	1230.6
10°	1188.2	1181.1	1174.0	1177.6	1170.5	1170.5	1163.4	1163.4
12.5°	1121.0	1113.9	1113.9	1106.8	1099.8	1099.8	1096.2	1096.2
15°	1050.2	1043.2	1039.6	1036.1	1032.6	1029.0	1029.0	1025.5
17.5°	979.5	976.0	972.5	968.9	961.8	958.3	954.8	951.2
20°	912.3	901.7	898.2	898.2	887.6	887.6	880.5	880.5
22.5°	841.6	831.0	831.0	827.5	820.4	813.3	813.3	809.8
25°	774.4	767.4	760.3	756.7	753.2	746.1	746.1	742.6
27.5°	707.2	700.2	696.6	693.1	686.0	682.5	678.9	675.4
30°	647.1	636.5	633.0	629.4	622.4	618.8	615.3	615.3
32.5°	587.0	576.4	576.4	569.3	565.8	558.7	555.2	555.2
35°	530.4	523.4	516.3	512.7	505.7	505.7	498.6	498.6
37.5°	473.8	466.8	466.8	459.7	452.6	449.1	445.6	442.0
40°	424.3	413.7	413.7	406.7	399.6	396.1	392.5	392.5
42.5°	374.8	364.2	360.7	357.2	350.1	343.0	343.0	339.5
45°	325.3	318.3	314.7	311.2	304.1	297.0	297.0	293.5
47.5°	279.4	275.8	268.8	265.2	261.7	254.6	251.1	251.1
50°	240.5	236.9	229.9	226.3	219.2	212.2	208.6	205.1
52.5°	201.6	198.0	194.5	191.0	183.9	176.8	173.3	169.7
55°	169.7	166.2	159.1	159.1	152.1	148.5	145.0	141.4
57.5°	137.9	134.4	130.8	130.8	127.3	127.3	127.3	127.3
60°	113.2	116.7	116.7	116.7	116.7	116.7	116.7	113.2
62.5°	102.5	102.5	102.5	102.5	102.5	102.5	102.5	102.5
65°	88.4	88.4	88.4	88.4	88.4	88.4	88.4	88.4
67.5°	74.3	74.3	77.8	74.3	74.3	74.3	74.3	74.3
70°	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7
72.5°	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0
75°	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4
77.5°	35.4	35.4	31.8	31.8	35.4	35.4	31.8	35.4
80°	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8
82.5°	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
85°	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
87.5°	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

(END OF REPORT)