

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: P242035

Luminaire Tested: **PRS420D010-S4M12-41SWWMW-4000K**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242035  
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: PRS420D010-S4M12-41SWWMW-4000K  
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 / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1287.7 lumens  
Efficiency: N/A  
Efficacy: 64.4 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

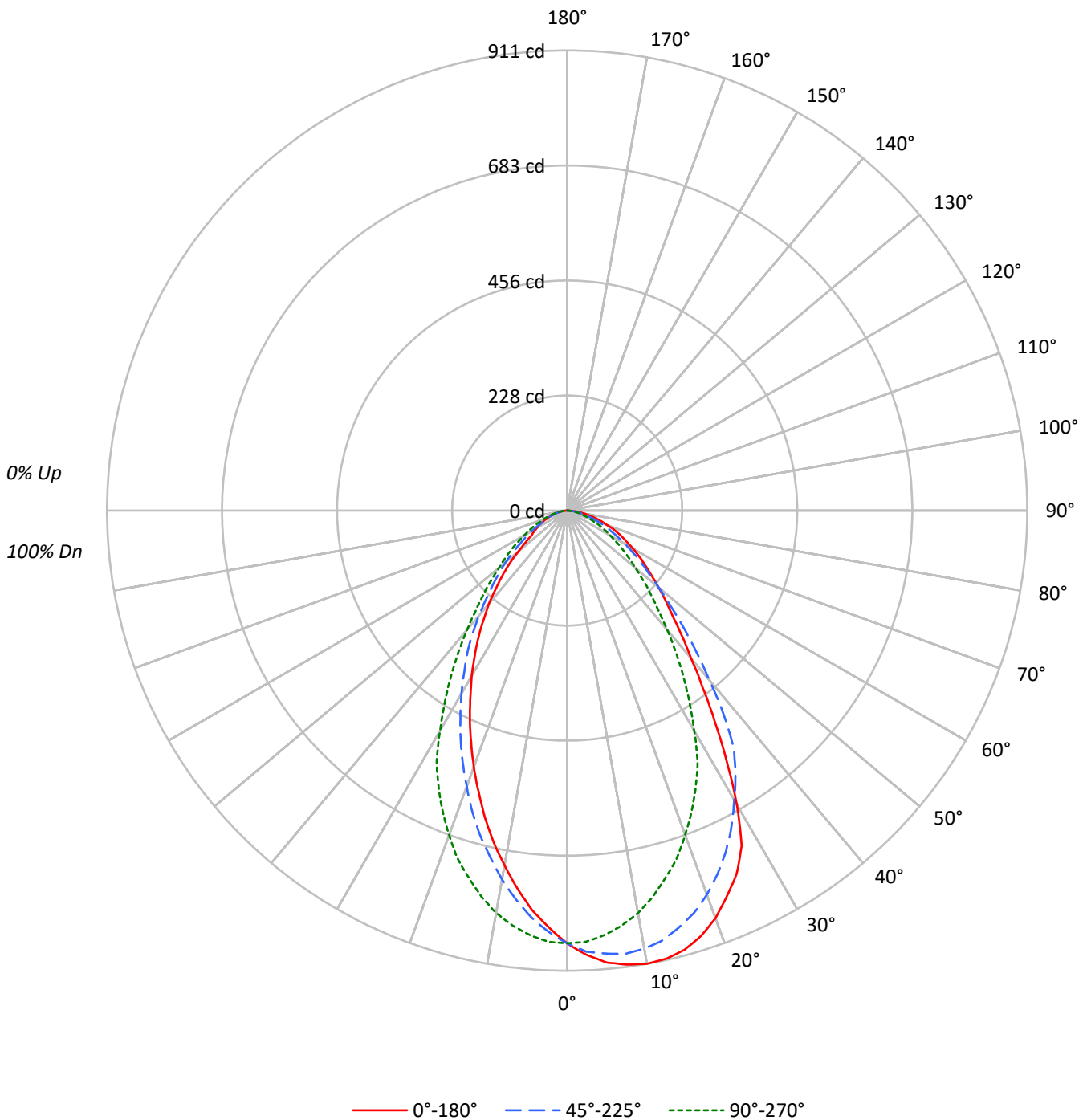
Input Watts (W): 20  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	65575	65575	65575
5°	68991	64826	60992
10°	70799	62879	55456
15°	71319	59639	49836
20°	69954	55651	43986
25°	67041	50919	38461
30°	59421	44475	33356
35°	47628	37489	28575
40°	38140	30775	24051
45°	31933	25352	19485
50°	28151	20922	14980
55°	25182	17949	11583
60°	22902	14941	10624
65°	21209	12968	9817
70°	18933	10675	8728
75°	17330	8991	7689
80°	15296	7670	6700
85°	9485	5709	5709



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	79.6	6.2
10°-20°	212.7	16.5
20°-30°	282.5	21.9
30°-40°	266.1	20.7
40°-50°	194.8	15.1
50°-60°	127.9	9.9
60°-70°	77.1	6.0
70°-80°	38.0	2.9
80°-90°	9.1	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°	574.7	44.6
0°-40°	840.9	65.3
0°-60°	1163.6	90.4
0°-90°	1287.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1287.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	857	857	857	857	857	
5°	898	880	844	809	794	86
15°	900	854	753	666	629	253
25°	794	744	603	499	455	360
35°	510	575	401	345	306	321
45°	295	323	234	208	180	232
55°	189	178	134	113	87	170
65°	117	95	72	52	54	116
75°	59	43	30	26	26	62
85°	11	9	6	6	6	15
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°	856.7	856.7	856.7	856.7	856.7	856.7	856.7	856.7	856.7	856.7	856.7
2.5°	880.5	880.5	880.5	880.5	878.4	878.4	878.4	876.2	876.2	874.0	874.0
5°	897.9	897.9	895.7	895.7	893.5	893.5	891.4	889.2	887.0	884.9	880.5
7.5°	906.6	906.6	904.4	904.4	902.2	902.2	900.0	897.9	893.5	889.2	884.9
10°	910.9	908.7	908.7	906.6	904.4	902.2	900.0	897.9	891.4	887.0	880.5
12.5°	908.7	906.6	906.6	902.2	900.0	897.9	895.7	891.4	884.9	878.4	871.9
15°	900.0	897.9	895.7	893.5	889.2	887.0	884.9	878.4	871.9	863.2	854.5
17.5°	882.7	880.5	880.5	876.2	871.9	869.7	867.5	861.0	852.3	843.7	835.0
20°	858.8	856.7	854.5	852.3	848.0	845.8	843.7	837.2	828.5	819.8	809.0
22.5°	826.3	824.1	824.1	822.0	817.6	815.5	813.3	806.8	800.3	789.4	778.6
25°	793.8	791.6	789.4	787.3	782.9	778.6	776.4	769.9	763.4	756.9	743.9
27.5°	748.2	750.4	750.4	748.2	746.1	743.9	741.7	733.0	724.4	715.7	704.9
30°	672.3	668.0	672.3	678.8	685.3	687.5	694.0	694.0	685.3	674.5	661.5
32.5°	587.7	589.9	592.1	600.8	609.4	611.6	615.9	628.9	639.8	633.3	620.3
35°	509.7	511.8	516.2	522.7	529.2	540.0	544.4	555.2	566.1	579.1	574.7
37.5°	440.3	442.4	446.8	451.1	462.0	466.3	475.0	483.6	501.0	511.8	509.7
40°	381.7	383.9	386.0	390.4	403.4	405.6	409.9	422.9	433.8	442.4	438.1
42.5°	336.2	334.0	338.3	342.7	349.2	351.3	355.7	364.4	373.0	377.4	377.4
45°	295.0	297.1	299.3	303.6	305.8	310.1	312.3	318.8	321.0	323.1	323.1
47.5°	264.6	264.6	266.8	268.9	271.1	273.3	275.4	277.6	277.6	277.6	275.4
50°	236.4	236.4	238.6	240.7	240.7	242.9	242.9	242.9	240.7	238.6	236.4
52.5°	210.4	210.4	212.5	214.7	214.7	214.7	214.7	212.5	210.4	208.2	203.9
55°	188.7	188.7	190.9	190.9	190.9	190.9	190.9	186.5	182.2	180.0	177.8
57.5°	169.2	169.2	169.2	169.2	169.2	169.2	167.0	162.7	160.5	156.2	154.0
60°	149.6	149.6	149.6	149.6	149.6	147.5	145.3	143.1	138.8	134.5	132.3
62.5°	132.3	132.3	132.3	132.3	130.1	128.0	128.0	123.6	121.5	117.1	112.8
65°	117.1	117.1	114.9	114.9	112.8	110.6	110.6	106.3	104.1	99.8	95.4
67.5°	101.9	99.8	99.8	99.8	97.6	95.4	93.3	91.1	88.9	84.6	80.2
70°	84.6	84.6	86.8	84.6	82.4	80.2	80.2	75.9	73.7	71.6	67.2
72.5°	71.6	71.6	71.6	69.4	69.4	67.2	65.1	62.9	60.7	58.6	54.2
75°	58.6	58.6	58.6	56.4	54.2	54.2	54.2	49.9	49.9	45.5	43.4
77.5°	45.5	45.5	45.5	43.4	43.4	43.4	41.2	39.0	36.9	36.9	34.7
80°	34.7	34.7	32.5	32.5	30.4	30.4	30.4	28.2	28.2	26.0	23.9
82.5°	23.9	21.7	21.7	21.7	21.7	21.7	19.5	19.5	17.4	17.4	15.2
85°	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	8.7	8.7	8.7
87.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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°	856.7	856.7	856.7	856.7	856.7	856.7	856.7	856.7	856.7	856.7	856.7
2.5°	869.7	869.7	867.5	865.3	863.2	863.2	861.0	858.8	856.7	854.5	850.2
5°	878.4	874.0	869.7	865.3	865.3	863.2	856.7	852.3	848.0	843.7	839.3
7.5°	878.4	871.9	867.5	861.0	858.8	854.5	848.0	841.5	835.0	828.5	822.0
10°	874.0	865.3	858.8	850.2	845.8	841.5	832.8	824.1	815.5	809.0	798.1
12.5°	861.0	852.3	843.7	832.8	828.5	824.1	813.3	802.4	793.8	782.9	774.3
15°	843.7	835.0	824.1	813.3	806.8	802.4	789.4	776.4	763.4	752.6	741.7
17.5°	824.1	811.1	800.3	787.3	780.8	772.1	759.1	746.1	733.0	722.2	709.2
20°	795.9	785.1	769.9	754.7	748.2	739.6	726.5	711.4	698.3	683.2	670.2
22.5°	767.7	752.6	737.4	720.0	713.5	704.9	689.7	672.3	659.3	644.1	628.9
25°	730.9	715.7	700.5	685.3	674.5	668.0	652.8	635.5	620.3	602.9	587.7
27.5°	691.8	676.7	661.5	644.1	635.5	626.8	607.3	589.9	572.6	559.5	542.2
30°	648.5	635.5	618.1	594.2	583.4	574.7	553.0	533.5	516.2	503.2	492.3
32.5°	605.1	585.6	561.7	537.9	527.0	516.2	494.5	477.1	464.1	451.1	438.1
35°	548.7	527.0	505.3	483.6	472.8	462.0	444.6	427.3	412.1	401.2	390.4
37.5°	496.7	472.8	448.9	429.4	418.6	409.9	390.4	377.4	364.4	353.5	342.7
40°	433.8	420.7	394.7	377.4	366.5	357.8	340.5	327.5	316.6	308.0	299.3
42.5°	373.0	366.5	344.8	327.5	318.8	312.3	297.1	286.3	275.4	266.8	262.4
45°	318.8	310.1	301.5	284.1	277.6	271.1	258.1	247.2	238.6	234.2	227.7
47.5°	273.3	266.8	258.1	245.1	238.6	234.2	223.4	214.7	208.2	203.9	199.5
50°	232.1	227.7	221.2	212.5	206.0	201.7	193.0	186.5	180.0	175.7	173.5
52.5°	199.5	195.2	188.7	182.2	177.8	173.5	167.0	160.5	158.3	154.0	149.6
55°	171.3	167.0	162.7	156.2	154.0	151.8	145.3	141.0	136.6	134.5	132.3
57.5°	149.6	145.3	138.8	134.5	132.3	130.1	125.8	121.5	117.1	114.9	112.8
60°	128.0	123.6	119.3	114.9	112.8	110.6	108.4	104.1	99.8	97.6	97.6
62.5°	110.6	106.3	101.9	97.6	97.6	95.4	91.1	88.9	86.8	84.6	82.4
65°	93.3	88.9	86.8	82.4	80.2	80.2	78.1	73.7	71.6	71.6	69.4
67.5°	78.1	75.9	71.6	69.4	67.2	67.2	62.9	62.9	60.7	58.6	56.4
70°	65.1	60.7	58.6	56.4	56.4	54.2	52.1	52.1	49.9	47.7	45.5
72.5°	52.1	49.9	47.7	45.5	45.5	43.4	43.4	41.2	39.0	39.0	36.9
75°	41.2	39.0	39.0	34.7	34.7	34.7	32.5	32.5	30.4	30.4	28.2
77.5°	32.5	30.4	28.2	28.2	26.0	26.0	26.0	23.9	23.9	23.9	21.7
80°	21.7	21.7	19.5	19.5	19.5	19.5	17.4	17.4	17.4	17.4	15.2
82.5°	15.2	13.0	13.0	13.0	13.0	13.0	10.8	10.8	10.8	10.8	10.8
85°	8.7	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
87.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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°	856.7	856.7	856.7	856.7	856.7	856.7	856.7	856.7	856.7	856.7	856.7
2.5°	848.0	845.8	843.7	843.7	841.5	839.3	839.3	837.2	835.0	832.8	830.6
5°	835.0	830.6	826.3	824.1	822.0	819.8	815.5	811.1	809.0	804.6	802.4
7.5°	815.5	809.0	804.6	800.3	798.1	791.6	787.3	782.9	776.4	774.3	769.9
10°	791.6	782.9	774.3	772.1	767.7	761.2	754.7	746.1	741.7	737.4	733.0
12.5°	763.4	754.7	743.9	739.6	735.2	726.5	717.9	711.4	702.7	698.3	691.8
15°	730.9	720.0	709.2	704.9	700.5	689.7	681.0	672.3	665.8	657.1	650.6
17.5°	696.2	683.2	670.2	665.8	661.5	650.6	642.0	631.1	624.6	615.9	609.4
20°	657.1	644.1	631.1	628.9	620.3	609.4	598.6	589.9	581.2	574.7	566.1
22.5°	615.9	602.9	592.1	585.6	579.1	568.2	557.4	548.7	540.0	529.2	522.7
25°	576.9	561.7	548.7	546.5	537.9	529.2	518.3	507.5	498.8	490.1	483.6
27.5°	531.4	520.5	507.5	501.0	496.7	485.8	477.1	466.3	457.6	448.9	442.4
30°	479.3	468.5	459.8	455.4	451.1	444.6	433.8	427.3	418.6	409.9	403.4
32.5°	429.4	422.9	414.2	409.9	407.7	399.1	394.7	388.2	379.5	373.0	366.5
35°	379.5	375.2	366.5	366.5	362.2	357.8	353.5	349.2	344.8	338.3	331.8
37.5°	336.2	331.8	325.3	321.0	321.0	316.6	314.5	310.1	308.0	303.6	299.3
40°	295.0	288.4	284.1	281.9	279.8	277.6	273.3	271.1	271.1	268.9	264.6
42.5°	253.7	251.6	247.2	245.1	247.2	242.9	242.9	240.7	236.4	234.2	232.1
45°	223.4	219.0	219.0	216.9	216.9	214.7	212.5	210.4	208.2	203.9	203.9
47.5°	195.2	193.0	190.9	190.9	188.7	188.7	186.5	184.3	182.2	180.0	175.7
50°	171.3	169.2	167.0	167.0	164.8	164.8	162.7	160.5	158.3	154.0	149.6
52.5°	149.6	147.5	145.3	145.3	143.1	143.1	141.0	136.6	134.5	132.3	128.0
55°	130.1	128.0	125.8	125.8	123.6	123.6	121.5	117.1	112.8	110.6	106.3
57.5°	110.6	110.6	108.4	108.4	106.3	104.1	101.9	97.6	95.4	93.3	88.9
60°	95.4	93.3	93.3	91.1	91.1	88.9	84.6	82.4	78.1	75.9	71.6
62.5°	80.2	80.2	78.1	75.9	75.9	71.6	69.4	67.2	65.1	60.7	62.9
65°	67.2	65.1	65.1	62.9	62.9	58.6	56.4	54.2	52.1	52.1	54.2
67.5°	56.4	54.2	52.1	52.1	49.9	47.7	45.5	45.5	45.5	45.5	45.5
70°	45.5	43.4	41.2	41.2	41.2	39.0	36.9	36.9	36.9	39.0	39.0
72.5°	36.9	34.7	32.5	32.5	30.4	30.4	30.4	30.4	30.4	32.5	32.5
75°	28.2	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0
77.5°	21.7	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
80°	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
82.5°	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
85°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
87.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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: P242035

CATALOG NUMBER: PRS420D010-S4M12-41SWWMW-4000K

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	856.7	856.7	856.7	856.7	856.7	856.7	856.7	856.7
2.5°	830.6	830.6	830.6	828.5	828.5	828.5	828.5	826.3
5°	800.3	800.3	798.1	798.1	795.9	795.9	795.9	793.8
7.5°	765.6	763.4	763.4	761.2	759.1	756.9	756.9	754.7
10°	728.7	724.4	720.0	722.2	717.9	717.9	713.5	713.5
12.5°	687.5	683.2	683.2	678.8	674.5	674.5	672.3	672.3
15°	644.1	639.8	637.6	635.5	633.3	631.1	631.1	628.9
17.5°	600.8	598.6	596.4	594.2	589.9	587.7	585.6	583.4
20°	559.5	553.0	550.9	550.9	544.4	544.4	540.0	540.0
22.5°	516.2	509.7	509.7	507.5	503.2	498.8	498.8	496.7
25°	475.0	470.6	466.3	464.1	462.0	457.6	457.6	455.4
27.5°	433.8	429.4	427.3	425.1	420.7	418.6	416.4	414.2
30°	396.9	390.4	388.2	386.0	381.7	379.5	377.4	377.4
32.5°	360.0	353.5	353.5	349.2	347.0	342.7	340.5	340.5
35°	325.3	321.0	316.6	314.5	310.1	310.1	305.8	305.8
37.5°	290.6	286.3	286.3	281.9	277.6	275.4	273.3	271.1
40°	260.3	253.7	253.7	249.4	245.1	242.9	240.7	240.7
42.5°	229.9	223.4	221.2	219.0	214.7	210.4	210.4	208.2
45°	199.5	195.2	193.0	190.9	186.5	182.2	182.2	180.0
47.5°	171.3	169.2	164.8	162.7	160.5	156.2	154.0	154.0
50°	147.5	145.3	141.0	138.8	134.5	130.1	128.0	125.8
52.5°	123.6	121.5	119.3	117.1	112.8	108.4	106.3	104.1
55°	104.1	101.9	97.6	97.6	93.3	91.1	88.9	86.8
57.5°	84.6	82.4	80.2	80.2	78.1	78.1	78.1	78.1
60°	69.4	71.6	71.6	71.6	71.6	71.6	71.6	69.4
62.5°	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9
65°	54.2	54.2	54.2	54.2	54.2	54.2	54.2	54.2
67.5°	45.5	45.5	47.7	45.5	45.5	45.5	45.5	45.5
70°	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0
72.5°	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5
75°	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0
77.5°	21.7	21.7	19.5	19.5	21.7	21.7	19.5	21.7
80°	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
82.5°	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
85°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
87.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)