

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: P242008

Luminaire Tested: **PRS410D010-S4M12-41SWWH-3000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242008
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: PRS410D010-S4M12-41SWWH-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: 555.1 lumens
Efficiency: N/A
Efficacy: 55.5 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

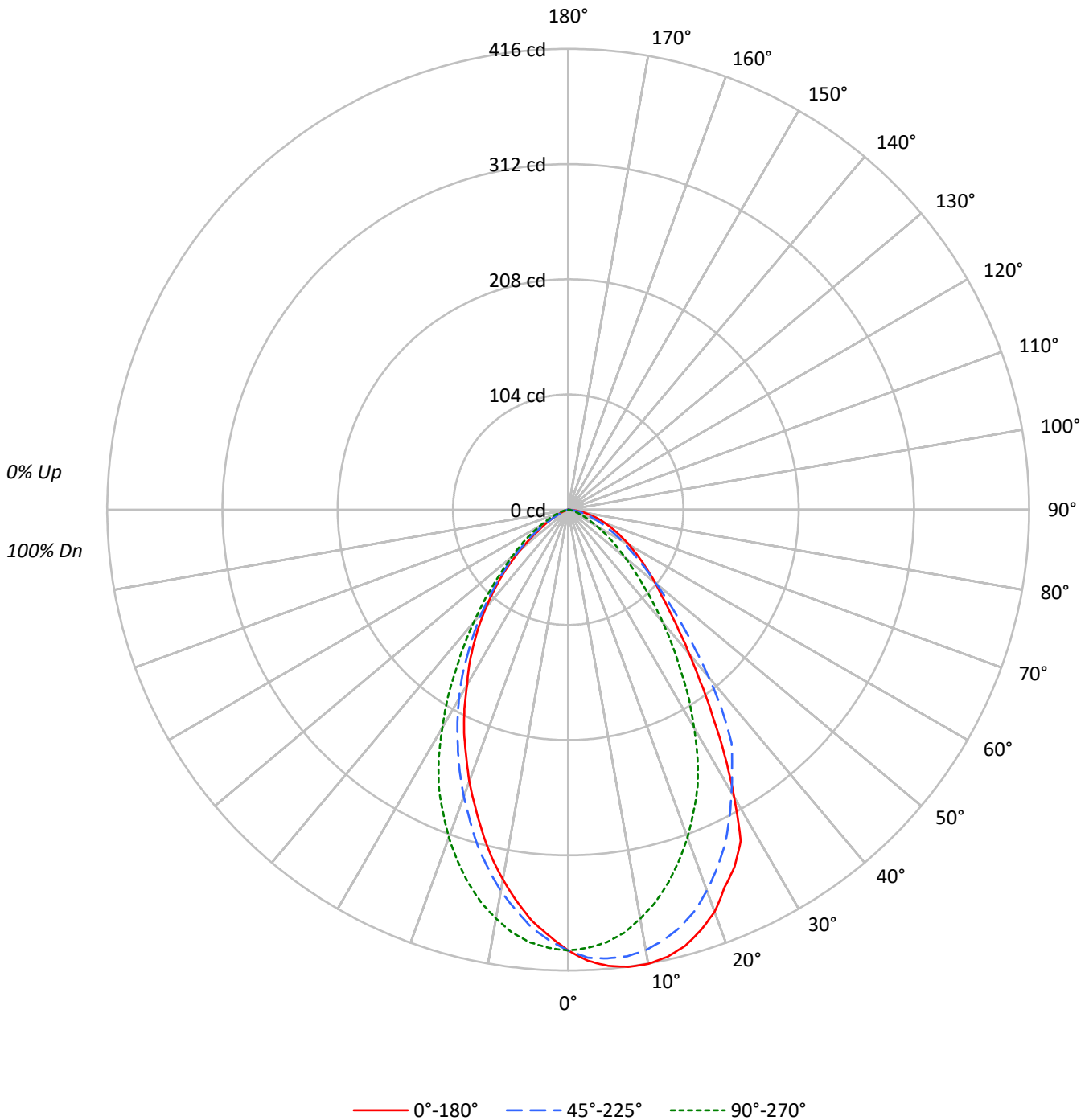
Input Watts (W): 10
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	30457	30457	30457
5°	31764	30127	28644
10°	32357	29123	26349
15°	32300	27624	23805
20°	31466	25642	21244
25°	30016	23327	18758
30°	26462	20063	16130
35°	21211	16511	13895
40°	16986	13219	11481
45°	14007	10240	9201
50°	12194	7931	6669
55°	10823	6192	4257
60°	9752	4577	2801
65°	8748	3314	1757
70°	7990	2372	1074
75°	7127	1420	562
80°	5951	838	441
85°	4216	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.0	6.7
10°-20°	98.5	17.7
20°-30°	129.7	23.4
30°-40°	120.4	21.7
40°-50°	84.1	15.1
50°-60°	49.4	8.9
60°-70°	24.5	4.4
70°-80°	9.9	1.8
80°-90°	1.8	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°	265.1	47.8
0°-40°	385.5	69.4
0°-60°	518.9	93.5
0°-90°	555.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	555.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	398	398	398	398	398	
5°	413	407	392	379	373	40
15°	408	390	349	315	300	114
25°	355	334	276	236	222	161
35°	227	257	177	157	149	143
45°	129	143	95	88	85	101
55°	81	75	46	38	32	73
65°	48	39	18	8	10	48
75°	24	16	5	2	2	26
85°	5	3	0	0	0	6
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°	397.9	397.9	397.9	397.9	397.9	397.9	397.9	397.9	397.9	397.9	397.9
2.5°	407.6	406.6	406.6	406.6	406.6	405.6	405.6	405.6	404.7	404.7	404.7
5°	413.4	413.4	412.4	412.4	411.4	411.4	411.4	410.5	409.5	408.5	406.6
7.5°	416.3	416.3	415.3	415.3	414.3	413.4	413.4	411.4	410.5	408.5	406.6
10°	416.3	416.3	415.3	415.3	413.4	412.4	412.4	411.4	408.5	406.6	403.7
12.5°	413.4	413.4	412.4	411.4	410.5	409.5	408.5	406.6	403.7	400.8	397.9
15°	407.6	407.6	406.6	405.6	403.7	402.7	401.8	399.8	396.9	393.1	390.2
17.5°	397.9	397.9	396.9	396.0	395.0	393.1	392.1	389.2	386.3	383.4	379.6
20°	386.3	385.3	385.3	384.4	382.5	382.5	380.5	377.6	374.7	369.9	366.0
22.5°	368.9	369.9	369.9	368.0	366.0	366.0	364.1	363.1	359.3	355.4	350.6
25°	355.4	354.4	354.4	352.5	349.6	349.6	348.6	345.8	341.9	338.0	334.2
27.5°	337.1	336.1	336.1	336.1	333.2	333.2	331.3	327.4	323.5	320.6	314.8
30°	299.4	302.3	302.3	305.2	308.1	310.0	311.9	310.0	305.2	300.4	294.6
32.5°	262.7	264.6	266.6	269.5	273.3	276.2	279.1	282.0	285.9	281.0	275.2
35°	227.0	228.9	229.9	233.7	238.5	239.5	243.4	250.1	254.0	257.9	256.9
37.5°	196.1	197.0	199.0	201.8	205.7	208.6	211.5	216.3	223.1	228.9	227.9
40°	170.0	169.0	171.9	172.9	176.7	179.6	183.5	187.4	194.1	197.0	197.0
42.5°	147.8	147.8	148.7	150.7	153.6	155.5	157.4	161.3	167.1	168.0	168.0
45°	129.4	129.4	130.4	132.3	134.2	134.2	137.1	141.0	142.0	142.9	142.9
47.5°	114.0	114.9	114.9	115.9	116.9	118.8	119.8	121.7	121.7	121.7	121.7
50°	102.4	102.4	102.4	103.3	104.3	105.3	105.3	105.3	105.3	104.3	103.3
52.5°	90.8	90.8	90.8	91.7	91.7	92.7	92.7	91.7	90.8	89.8	88.9
55°	81.1	80.2	81.1	81.1	82.1	82.1	81.1	80.2	79.2	77.3	75.3
57.5°	71.5	71.5	71.5	71.5	72.4	71.5	71.5	70.5	68.6	66.6	64.7
60°	63.7	62.8	62.8	62.8	63.7	62.8	62.8	60.8	59.9	57.0	55.0
62.5°	55.0	55.0	55.0	56.0	55.0	55.0	54.1	52.2	51.2	49.3	47.3
65°	48.3	48.3	48.3	48.3	47.3	46.4	46.4	44.4	43.5	41.5	38.6
67.5°	41.5	41.5	41.5	41.5	40.6	39.6	39.6	37.7	36.7	34.8	32.8
70°	35.7	34.8	35.7	34.8	33.8	32.8	32.8	31.9	29.9	28.0	26.1
72.5°	29.9	29.9	29.9	29.0	28.0	27.0	27.0	25.1	24.1	23.2	21.2
75°	24.1	24.1	24.1	23.2	22.2	22.2	21.2	20.3	19.3	18.3	16.4
77.5°	18.3	18.3	18.3	18.3	17.4	16.4	16.4	15.5	14.5	13.5	12.6
80°	13.5	13.5	13.5	12.6	12.6	12.6	11.6	11.6	10.6	9.7	8.7
82.5°	8.7	8.7	8.7	8.7	7.7	7.7	7.7	6.8	6.8	5.8	4.8
85°	4.8	4.8	4.8	4.8	3.9	3.9	3.9	3.9	3.9	2.9	2.9
87.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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°	397.9	397.9	397.9	397.9	397.9	397.9	397.9	397.9	397.9	397.9	397.9
2.5°	403.7	402.7	401.8	400.8	400.8	399.8	398.9	397.9	396.9	396.0	396.0
5°	405.6	403.7	402.7	400.8	399.8	399.8	397.9	396.0	394.0	392.1	390.2
7.5°	404.7	402.7	399.8	397.9	396.9	395.0	393.1	390.2	387.3	385.3	382.5
10°	400.8	397.9	395.0	391.1	390.2	388.2	385.3	381.5	378.6	374.7	371.8
12.5°	395.0	391.1	387.3	383.4	381.5	379.6	375.7	370.9	367.0	363.1	358.3
15°	385.3	382.5	376.7	372.8	369.9	368.0	363.1	358.3	353.5	348.6	344.8
17.5°	373.8	369.9	365.1	359.3	356.4	354.4	348.6	341.9	337.1	332.2	328.4
20°	362.2	356.4	350.6	344.8	340.9	339.0	332.2	325.5	320.6	314.8	309.1
22.5°	346.7	340.0	334.2	327.4	324.5	320.6	314.8	307.1	300.4	295.5	288.8
25°	328.4	323.5	315.8	309.1	305.2	302.3	294.6	288.8	282.0	276.2	269.5
27.5°	310.0	303.3	297.5	290.7	285.9	282.0	275.2	267.5	260.8	253.0	247.2
30°	289.7	284.9	277.2	266.6	261.7	257.9	249.2	240.5	233.7	227.0	222.1
32.5°	269.5	259.8	251.1	241.4	236.6	232.8	223.1	216.3	208.6	202.8	198.0
35°	245.3	235.7	226.0	214.4	210.5	205.7	197.0	190.3	182.5	176.7	172.9
37.5°	221.2	209.6	199.0	190.3	186.4	180.6	172.9	165.1	159.4	154.5	149.7
40°	195.1	185.4	175.8	165.1	161.3	157.4	149.7	143.9	136.2	132.3	128.4
42.5°	166.1	162.3	152.6	143.9	139.1	135.2	127.5	121.7	116.9	113.0	109.1
45°	141.0	138.1	131.3	122.7	119.8	115.9	109.1	102.4	98.5	94.6	91.7
47.5°	119.8	116.9	112.0	104.3	100.4	97.5	91.7	86.9	83.1	79.2	77.3
50°	101.4	98.5	93.7	88.9	86.0	82.1	77.3	73.4	69.5	66.6	64.7
52.5°	86.0	83.1	78.2	74.4	72.4	69.5	64.7	61.8	57.9	56.0	54.1
55°	73.4	70.5	66.6	62.8	60.8	57.9	54.1	50.2	48.3	46.4	44.4
57.5°	62.8	58.9	56.0	53.1	51.2	48.3	44.4	42.5	39.6	37.7	35.7
60°	53.1	50.2	47.3	43.5	41.5	40.6	36.7	33.8	31.9	29.9	28.0
62.5°	44.4	41.5	38.6	35.7	34.8	32.8	29.9	27.0	25.1	23.2	22.2
65°	36.7	34.8	31.9	29.0	28.0	26.1	23.2	21.2	19.3	18.3	17.4
67.5°	30.9	28.0	26.1	23.2	22.2	21.2	18.3	16.4	15.5	14.5	12.6
70°	24.1	22.2	20.3	18.3	17.4	16.4	14.5	12.6	11.6	10.6	9.7
72.5°	19.3	17.4	15.5	13.5	12.6	12.6	10.6	9.7	8.7	7.7	6.8
75°	15.5	13.5	11.6	10.6	9.7	8.7	7.7	6.8	5.8	4.8	4.8
77.5°	10.6	9.7	8.7	6.8	6.8	5.8	4.8	4.8	3.9	3.9	2.9
80°	7.7	6.8	5.8	4.8	3.9	3.9	2.9	2.9	1.9	1.9	1.9
82.5°	4.8	3.9	2.9	2.9	2.9	1.9	1.9	1.9	1.0	1.0	1.0
85°	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0
87.5°	1.0	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°	397.9	397.9	397.9	397.9	397.9	397.9	397.9	397.9	397.9	397.9	397.9
2.5°	395.0	394.0	393.1	392.1	392.1	392.1	390.2	390.2	389.2	388.2	388.2
5°	389.2	387.3	385.3	385.3	383.4	382.5	381.5	379.6	378.6	377.6	376.7
7.5°	379.6	377.6	374.7	373.8	372.8	370.9	368.0	367.0	364.1	363.1	362.2
10°	368.9	365.1	363.1	360.2	360.2	356.4	354.4	351.5	349.6	347.7	345.8
12.5°	355.4	350.6	346.7	345.8	343.8	340.0	338.0	334.2	332.2	330.3	328.4
15°	340.0	336.1	331.3	329.3	327.4	323.5	320.6	317.7	314.8	311.9	310.0
17.5°	322.6	318.7	312.9	311.0	310.0	305.2	301.3	297.5	294.6	292.6	289.7
20°	304.2	299.4	294.6	292.6	290.7	286.8	283.0	279.1	275.2	272.4	270.4
22.5°	283.9	278.1	274.3	272.4	270.4	265.6	262.7	258.8	255.9	253.0	251.1
25°	264.6	258.8	254.0	252.1	249.2	245.3	242.4	239.5	235.7	232.8	230.8
27.5°	242.4	236.6	232.8	231.8	228.9	226.0	222.1	218.3	216.3	213.4	211.5
30°	218.3	214.4	211.5	208.6	207.6	204.7	202.8	199.9	197.0	194.1	191.2
32.5°	193.2	190.3	186.4	186.4	185.4	183.5	181.6	179.6	177.7	175.8	172.9
35°	170.0	166.1	164.2	164.2	162.3	161.3	161.3	159.4	157.4	156.5	155.5
37.5°	146.8	144.9	142.0	142.0	141.0	141.0	140.0	139.1	139.1	139.1	138.1
40°	125.6	123.6	121.7	120.7	120.7	120.7	119.8	120.7	120.7	120.7	120.7
42.5°	106.2	105.3	103.3	103.3	103.3	103.3	103.3	103.3	103.3	104.3	104.3
45°	90.8	88.9	87.9	86.9	87.9	86.9	86.9	87.9	87.9	88.9	87.9
47.5°	75.3	75.3	73.4	73.4	73.4	73.4	73.4	73.4	73.4	73.4	74.4
50°	63.7	61.8	61.8	60.8	60.8	60.8	60.8	60.8	59.9	60.8	60.8
52.5°	53.1	51.2	51.2	50.2	50.2	49.3	49.3	48.3	48.3	48.3	48.3
55°	43.5	41.5	41.5	40.6	40.6	39.6	39.6	38.6	37.7	37.7	36.7
57.5°	34.8	32.8	32.8	31.9	31.9	30.9	29.9	29.0	28.0	28.0	27.0
60°	27.0	26.1	25.1	25.1	24.1	23.2	22.2	20.3	19.3	19.3	18.3
62.5°	21.2	20.3	19.3	18.3	18.3	16.4	15.5	13.5	12.6	11.6	12.6
65°	16.4	15.5	14.5	13.5	12.6	11.6	9.7	8.7	7.7	8.7	8.7
67.5°	11.6	10.6	9.7	9.7	8.7	7.7	5.8	5.8	5.8	5.8	6.8
70°	8.7	7.7	6.8	5.8	4.8	3.9	3.9	3.9	3.9	3.9	4.8
72.5°	5.8	4.8	3.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
75°	3.9	2.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
77.5°	2.9	1.9	1.0	1.0	1.0	1.0	1.0	1.9	1.9	1.0	1.9
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	0.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	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



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CATALOG NUMBER: PRS410D010-S4M12-41SWWH-3000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	397.9	397.9	397.9	397.9	397.9	397.9	397.9	397.9
2.5°	388.2	387.3	387.3	386.3	386.3	387.3	386.3	385.3
5°	374.7	374.7	374.7	373.8	372.8	372.8	372.8	372.8
7.5°	360.2	359.3	359.3	359.3	358.3	356.4	356.4	356.4
10°	343.8	341.9	341.9	340.9	340.9	340.0	340.0	339.0
12.5°	326.4	324.5	323.5	322.6	321.6	320.6	321.6	320.6
15°	308.1	306.2	304.2	304.2	303.3	301.3	301.3	300.4
17.5°	287.8	284.9	284.9	283.9	282.0	282.0	281.0	280.1
20°	267.5	265.6	264.6	263.7	262.7	260.8	260.8	260.8
22.5°	247.2	245.3	244.3	244.3	243.4	241.4	241.4	240.5
25°	227.9	226.0	225.0	224.1	223.1	223.1	222.1	222.1
27.5°	209.6	206.7	206.7	204.7	203.8	202.8	202.8	202.8
30°	189.3	188.3	186.4	187.4	184.5	184.5	184.5	182.5
32.5°	170.9	170.0	169.0	169.0	167.1	166.1	167.1	166.1
35°	153.6	152.6	151.6	150.7	149.7	149.7	148.7	148.7
37.5°	137.1	135.2	134.2	134.2	133.3	133.3	132.3	132.3
40°	119.8	119.8	118.8	117.8	116.9	115.9	114.9	114.9
42.5°	104.3	103.3	102.4	102.4	101.4	99.5	99.5	99.5
45°	88.9	87.9	86.9	86.9	86.0	85.0	84.0	85.0
47.5°	73.4	73.4	73.4	72.4	71.5	70.5	69.5	69.5
50°	60.8	59.9	59.9	59.9	57.9	57.0	56.0	56.0
52.5°	48.3	47.3	47.3	47.3	46.4	44.4	43.5	43.5
55°	36.7	36.7	36.7	35.7	34.8	33.8	32.8	31.9
57.5°	26.1	26.1	26.1	26.1	26.1	26.1	25.1	25.1
60°	18.3	19.3	19.3	20.3	20.3	19.3	18.3	18.3
62.5°	13.5	14.5	14.5	14.5	14.5	13.5	13.5	13.5
65°	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7
67.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
70°	4.8	4.8	4.8	4.8	4.8	4.8	3.9	4.8
72.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
75°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
77.5°	1.0	1.9	1.0	1.0	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0
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

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