

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: P242019

Luminaire Tested: **PRS415D010-S4M12-41SWWH-4000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242019
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: PRS415D010-S4M12-41SWWH-4000K
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM HAZE
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 776.3 lumens
Efficiency: N/A
Efficacy: 64.7 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

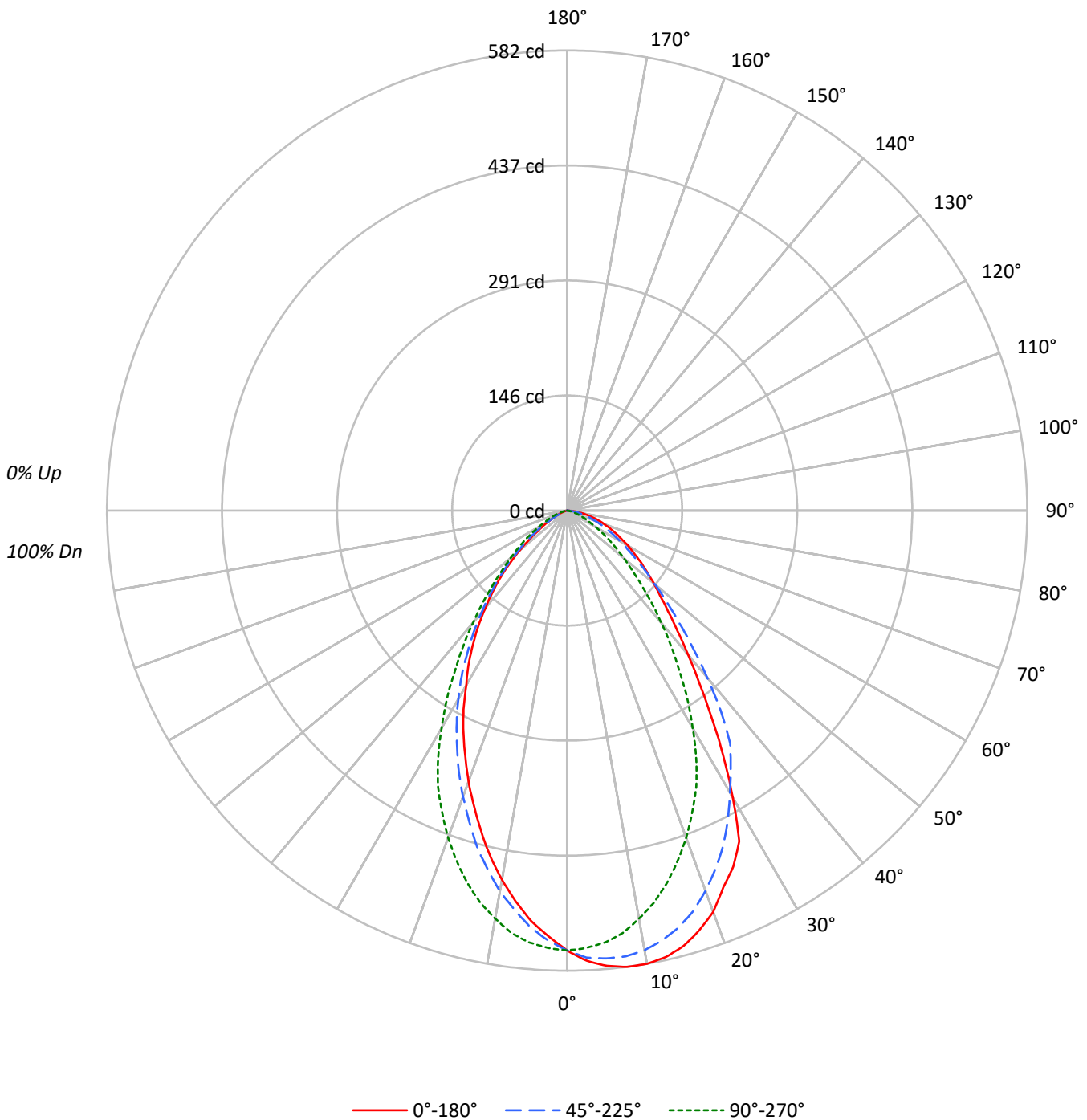
Input Watts (W): 12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	86	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	75	71	67	73	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°	42589	42589	42589
5°	44419	42129	40054
10°	45243	40727	36849
15°	45169	38639	33282
20°	44002	35865	29707
25°	41975	32625	26232
30°	37007	28053	22565
35°	29659	23099	19436
40°	23751	18485	16057
45°	19593	14332	12871
50°	17052	11098	9324
55°	15146	8648	5952
60°	13640	6414	3934
65°	12225	4655	2445
70°	11190	3335	1522
75°	9996	2011	799
80°	8331	1190	617
85°	5972	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	51.7	6.7
10°-20°	137.8	17.7
20°-30°	181.3	23.4
30°-40°	168.3	21.7
40°-50°	117.6	15.1
50°-60°	69.0	8.9
60°-70°	34.3	4.4
70°-80°	13.8	1.8
80°-90°	2.6	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°	370.8	47.8
0°-40°	539.1	69.4
0°-60°	725.7	93.5
0°-90°	776.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	776.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	556	556	556	556	556	
5°	578	569	548	529	521	55
15°	570	546	488	440	420	160
25°	497	467	386	330	311	226
35°	317	359	247	220	208	200
45°	181	200	132	123	119	142
55°	114	105	65	53	45	102
65°	68	54	26	11	14	67
75°	34	23	7	3	3	36
85°	7	4	0	0	0	8
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°	556.4	556.4	556.4	556.4	556.4	556.4	556.4	556.4	556.4	556.4	556.4
2.5°	570.0	568.6	568.6	568.6	568.6	567.3	567.3	567.3	565.9	565.9	565.9
5°	578.1	578.1	576.7	576.7	575.4	575.4	575.4	574.0	572.7	571.3	568.6
7.5°	582.1	582.1	580.8	580.8	579.4	578.1	578.1	575.4	574.0	571.3	568.6
10°	582.1	582.1	580.8	580.8	578.1	576.7	576.7	575.4	571.3	568.6	564.6
12.5°	578.1	578.1	576.7	575.4	574.0	572.7	571.3	568.6	564.6	560.5	556.4
15°	570.0	570.0	568.6	567.3	564.6	563.2	561.9	559.2	555.1	549.7	545.6
17.5°	556.4	556.4	555.1	553.7	552.4	549.7	548.3	544.3	540.2	536.2	530.8
20°	540.2	538.9	538.9	537.5	534.8	534.8	532.1	528.1	524.0	517.3	511.9
22.5°	515.9	517.3	517.3	514.6	511.9	511.9	509.2	507.8	502.4	497.0	490.3
25°	497.0	495.7	495.7	493.0	488.9	488.9	487.6	483.5	478.1	472.7	467.3
27.5°	471.4	470.0	470.0	470.0	466.0	466.0	463.3	457.9	452.5	448.4	440.3
30°	418.7	422.7	422.7	426.8	430.8	433.5	436.2	433.5	426.8	420.0	411.9
32.5°	367.4	370.1	372.8	376.8	382.2	386.3	390.3	394.4	399.8	393.0	384.9
35°	317.4	320.1	321.4	326.8	333.6	335.0	340.4	349.8	355.2	360.6	359.3
37.5°	274.2	275.5	278.2	282.3	287.7	291.7	295.8	302.5	312.0	320.1	318.7
40°	237.7	236.4	240.4	241.8	247.2	251.2	256.6	262.0	271.5	275.5	275.5
42.5°	206.6	206.6	208.0	210.7	214.7	217.4	220.1	225.6	233.7	235.0	235.0
45°	181.0	181.0	182.3	185.0	187.7	187.7	191.8	197.2	198.5	199.9	199.9
47.5°	159.4	160.7	160.7	162.1	163.4	166.1	167.5	170.2	170.2	170.2	170.2
50°	143.2	143.2	143.2	144.5	145.9	147.2	147.2	147.2	147.2	145.9	144.5
52.5°	127.0	127.0	127.0	128.3	128.3	129.7	129.7	128.3	127.0	125.6	124.3
55°	113.5	112.1	113.5	113.5	114.8	114.8	113.5	112.1	110.7	108.0	105.3
57.5°	99.9	99.9	99.9	99.9	101.3	99.9	99.9	98.6	95.9	93.2	90.5
60°	89.1	87.8	87.8	87.8	89.1	87.8	87.8	85.1	83.7	79.7	77.0
62.5°	77.0	77.0	77.0	78.3	77.0	77.0	75.6	72.9	71.6	68.9	66.2
65°	67.5	67.5	67.5	67.5	66.2	64.8	64.8	62.1	60.8	58.1	54.0
67.5°	58.1	58.1	58.1	58.1	56.7	55.4	55.4	52.7	51.3	48.6	45.9
70°	50.0	48.6	50.0	48.6	47.3	45.9	45.9	44.6	41.9	39.2	36.5
72.5°	41.9	41.9	41.9	40.5	39.2	37.8	37.8	35.1	33.8	32.4	29.7
75°	33.8	33.8	33.8	32.4	31.1	31.1	29.7	28.4	27.0	25.7	23.0
77.5°	25.7	25.7	25.7	25.7	24.3	23.0	23.0	21.6	20.3	18.9	17.6
80°	18.9	18.9	18.9	17.6	17.6	17.6	16.2	16.2	14.9	13.5	12.2
82.5°	12.2	12.2	12.2	12.2	10.8	10.8	10.8	9.5	9.5	8.1	6.8
85°	6.8	6.8	6.8	6.8	5.4	5.4	5.4	5.4	5.4	4.1	4.1
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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°	556.4	556.4	556.4	556.4	556.4	556.4	556.4	556.4	556.4	556.4	556.4
2.5°	564.6	563.2	561.9	560.5	560.5	559.2	557.8	556.4	555.1	553.7	553.7
5°	567.3	564.6	563.2	560.5	559.2	559.2	556.4	553.7	551.0	548.3	545.6
7.5°	565.9	563.2	559.2	556.4	555.1	552.4	549.7	545.6	541.6	538.9	534.8
10°	560.5	556.4	552.4	547.0	545.6	542.9	538.9	533.5	529.4	524.0	520.0
12.5°	552.4	547.0	541.6	536.2	533.5	530.8	525.4	518.6	513.2	507.8	501.1
15°	538.9	534.8	526.7	521.3	517.3	514.6	507.8	501.1	494.3	487.6	482.2
17.5°	522.7	517.3	510.5	502.4	498.4	495.7	487.6	478.1	471.4	464.6	459.2
20°	506.5	498.4	490.3	482.2	476.8	474.1	464.6	455.2	448.4	440.3	432.2
22.5°	484.9	475.4	467.3	457.9	453.8	448.4	440.3	429.5	420.0	413.3	403.8
25°	459.2	452.5	441.6	432.2	426.8	422.7	411.9	403.8	394.4	386.3	376.8
27.5°	433.5	424.1	416.0	406.5	399.8	394.4	384.9	374.1	364.7	353.9	345.8
30°	405.2	398.4	387.6	372.8	366.0	360.6	348.5	336.3	326.8	317.4	310.6
32.5°	376.8	363.3	351.2	337.7	330.9	325.5	312.0	302.5	291.7	283.6	276.9
35°	343.1	329.5	316.0	299.8	294.4	287.7	275.5	266.1	255.3	247.2	241.8
37.5°	309.3	293.1	278.2	266.1	260.7	252.6	241.8	231.0	222.8	216.1	209.3
40°	272.8	259.3	245.8	231.0	225.6	220.1	209.3	201.2	190.4	185.0	179.6
42.5°	232.3	226.9	213.4	201.2	194.5	189.1	178.3	170.2	163.4	158.0	152.6
45°	197.2	193.1	183.7	171.5	167.5	162.1	152.6	143.2	137.8	132.4	128.3
47.5°	167.5	163.4	156.7	145.9	140.5	136.4	128.3	121.6	116.2	110.7	108.0
50°	141.8	137.8	131.0	124.3	120.2	114.8	108.0	102.6	97.2	93.2	90.5
52.5°	120.2	116.2	109.4	104.0	101.3	97.2	90.5	86.4	81.0	78.3	75.6
55°	102.6	98.6	93.2	87.8	85.1	81.0	75.6	70.2	67.5	64.8	62.1
57.5°	87.8	82.4	78.3	74.3	71.6	67.5	62.1	59.4	55.4	52.7	50.0
60°	74.3	70.2	66.2	60.8	58.1	56.7	51.3	47.3	44.6	41.9	39.2
62.5°	62.1	58.1	54.0	50.0	48.6	45.9	41.9	37.8	35.1	32.4	31.1
65°	51.3	48.6	44.6	40.5	39.2	36.5	32.4	29.7	27.0	25.7	24.3
67.5°	43.2	39.2	36.5	32.4	31.1	29.7	25.7	23.0	21.6	20.3	17.6
70°	33.8	31.1	28.4	25.7	24.3	23.0	20.3	17.6	16.2	14.9	13.5
72.5°	27.0	24.3	21.6	18.9	17.6	17.6	14.9	13.5	12.2	10.8	9.5
75°	21.6	18.9	16.2	14.9	13.5	12.2	10.8	9.5	8.1	6.8	6.8
77.5°	14.9	13.5	12.2	9.5	9.5	8.1	6.8	6.8	5.4	5.4	4.1
80°	10.8	9.5	8.1	6.8	5.4	5.4	4.1	4.1	2.7	2.7	2.7
82.5°	6.8	5.4	4.1	4.1	4.1	2.7	2.7	2.7	1.4	1.4	1.4
85°	2.7	2.7	1.4	1.4	1.4	1.4	1.4	1.4	0.0	0.0	0.0
87.5°	1.4	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°	556.4	556.4	556.4	556.4	556.4	556.4	556.4	556.4	556.4	556.4	556.4
2.5°	552.4	551.0	549.7	548.3	548.3	548.3	545.6	545.6	544.3	542.9	542.9
5°	544.3	541.6	538.9	538.9	536.2	534.8	533.5	530.8	529.4	528.1	526.7
7.5°	530.8	528.1	524.0	522.7	521.3	518.6	514.6	513.2	509.2	507.8	506.5
10°	515.9	510.5	507.8	503.8	503.8	498.4	495.7	491.6	488.9	486.2	483.5
12.5°	497.0	490.3	484.9	483.5	480.8	475.4	472.7	467.3	464.6	461.9	459.2
15°	475.4	470.0	463.3	460.6	457.9	452.5	448.4	444.3	440.3	436.2	433.5
17.5°	451.1	445.7	437.6	434.9	433.5	426.8	421.4	416.0	411.9	409.2	405.2
20°	425.4	418.7	411.9	409.2	406.5	401.1	395.7	390.3	384.9	380.9	378.2
22.5°	397.1	389.0	383.6	380.9	378.2	371.4	367.4	362.0	357.9	353.9	351.2
25°	370.1	362.0	355.2	352.5	348.5	343.1	339.0	335.0	329.5	325.5	322.8
27.5°	339.0	330.9	325.5	324.1	320.1	316.0	310.6	305.2	302.5	298.5	295.8
30°	305.2	299.8	295.8	291.7	290.4	286.3	283.6	279.6	275.5	271.5	267.4
32.5°	270.1	266.1	260.7	260.7	259.3	256.6	253.9	251.2	248.5	245.8	241.8
35°	237.7	232.3	229.6	229.6	226.9	225.6	225.6	222.8	220.1	218.8	217.4
37.5°	205.3	202.6	198.5	198.5	197.2	197.2	195.8	194.5	194.5	194.5	193.1
40°	175.6	172.9	170.2	168.8	168.8	168.8	167.5	168.8	168.8	168.8	168.8
42.5°	148.6	147.2	144.5	144.5	144.5	144.5	144.5	144.5	144.5	145.9	145.9
45°	127.0	124.3	122.9	121.6	122.9	121.6	121.6	122.9	122.9	124.3	122.9
47.5°	105.3	105.3	102.6	102.6	102.6	102.6	102.6	102.6	102.6	102.6	104.0
50°	89.1	86.4	86.4	85.1	85.1	85.1	85.1	85.1	83.7	85.1	85.1
52.5°	74.3	71.6	71.6	70.2	70.2	68.9	68.9	67.5	67.5	67.5	67.5
55°	60.8	58.1	58.1	56.7	56.7	55.4	55.4	54.0	52.7	52.7	51.3
57.5°	48.6	45.9	45.9	44.6	44.6	43.2	41.9	40.5	39.2	39.2	37.8
60°	37.8	36.5	35.1	35.1	33.8	32.4	31.1	28.4	27.0	27.0	25.7
62.5°	29.7	28.4	27.0	25.7	25.7	23.0	21.6	18.9	17.6	16.2	17.6
65°	23.0	21.6	20.3	18.9	17.6	16.2	13.5	12.2	10.8	12.2	12.2
67.5°	16.2	14.9	13.5	13.5	12.2	10.8	8.1	8.1	8.1	8.1	9.5
70°	12.2	10.8	9.5	8.1	6.8	5.4	5.4	5.4	5.4	5.4	6.8
72.5°	8.1	6.8	5.4	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
75°	5.4	4.1	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
77.5°	4.1	2.7	1.4	1.4	1.4	1.4	1.4	2.7	2.7	1.4	2.7
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	0.0	0.0	0.0	1.4	1.4	0.0	1.4	1.4	0.0	1.4	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: PRS415D010-S4M12-41SWWH-4000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	556.4	556.4	556.4	556.4	556.4	556.4	556.4	556.4
2.5°	542.9	541.6	541.6	540.2	540.2	541.6	540.2	538.9
5°	524.0	524.0	524.0	522.7	521.3	521.3	521.3	521.3
7.5°	503.8	502.4	502.4	502.4	501.1	498.4	498.4	498.4
10°	480.8	478.1	478.1	476.8	476.8	475.4	475.4	474.1
12.5°	456.5	453.8	452.5	451.1	449.8	448.4	449.8	448.4
15°	430.8	428.1	425.4	425.4	424.1	421.4	421.4	420.0
17.5°	402.5	398.4	398.4	397.1	394.4	394.4	393.0	391.7
20°	374.1	371.4	370.1	368.7	367.4	364.7	364.7	364.7
22.5°	345.8	343.1	341.7	341.7	340.4	337.7	337.7	336.3
25°	318.7	316.0	314.7	313.3	312.0	312.0	310.6	310.6
27.5°	293.1	289.0	289.0	286.3	285.0	283.6	283.6	283.6
30°	264.7	263.4	260.7	262.0	258.0	258.0	258.0	255.3
32.5°	239.1	237.7	236.4	236.4	233.7	232.3	233.7	232.3
35°	214.7	213.4	212.0	210.7	209.3	209.3	208.0	208.0
37.5°	191.8	189.1	187.7	187.7	186.4	186.4	185.0	185.0
40°	167.5	167.5	166.1	164.8	163.4	162.1	160.7	160.7
42.5°	145.9	144.5	143.2	143.2	141.8	139.1	139.1	139.1
45°	124.3	122.9	121.6	121.6	120.2	118.9	117.5	118.9
47.5°	102.6	102.6	102.6	101.3	99.9	98.6	97.2	97.2
50°	85.1	83.7	83.7	83.7	81.0	79.7	78.3	78.3
52.5°	67.5	66.2	66.2	66.2	64.8	62.1	60.8	60.8
55°	51.3	51.3	51.3	50.0	48.6	47.3	45.9	44.6
57.5°	36.5	36.5	36.5	36.5	36.5	36.5	35.1	35.1
60°	25.7	27.0	27.0	28.4	28.4	27.0	25.7	25.7
62.5°	18.9	20.3	20.3	20.3	20.3	18.9	18.9	18.9
65°	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5
67.5°	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
70°	6.8	6.8	6.8	6.8	6.8	6.8	5.4	6.8
72.5°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
75°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
77.5°	1.4	2.7	1.4	1.4	1.4	1.4	1.4	1.4
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	1.4	1.4	0.0	0.0	0.0	0.0	1.4
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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