

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: P241994

Luminaire Tested: **PRS415D010-S4M12-41SWWC-3000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P241994
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1802-584-61)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PRS415D010-S4M12-41SWWC-3000K
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM SPECULAR
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 773.9 lumens
Efficiency: N/A
Efficacy: 64.5 lumens/watt
Spacing Criteria (0/90/45): 0.94 / 0.9 / 0.99
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')
CIE Type: Direct

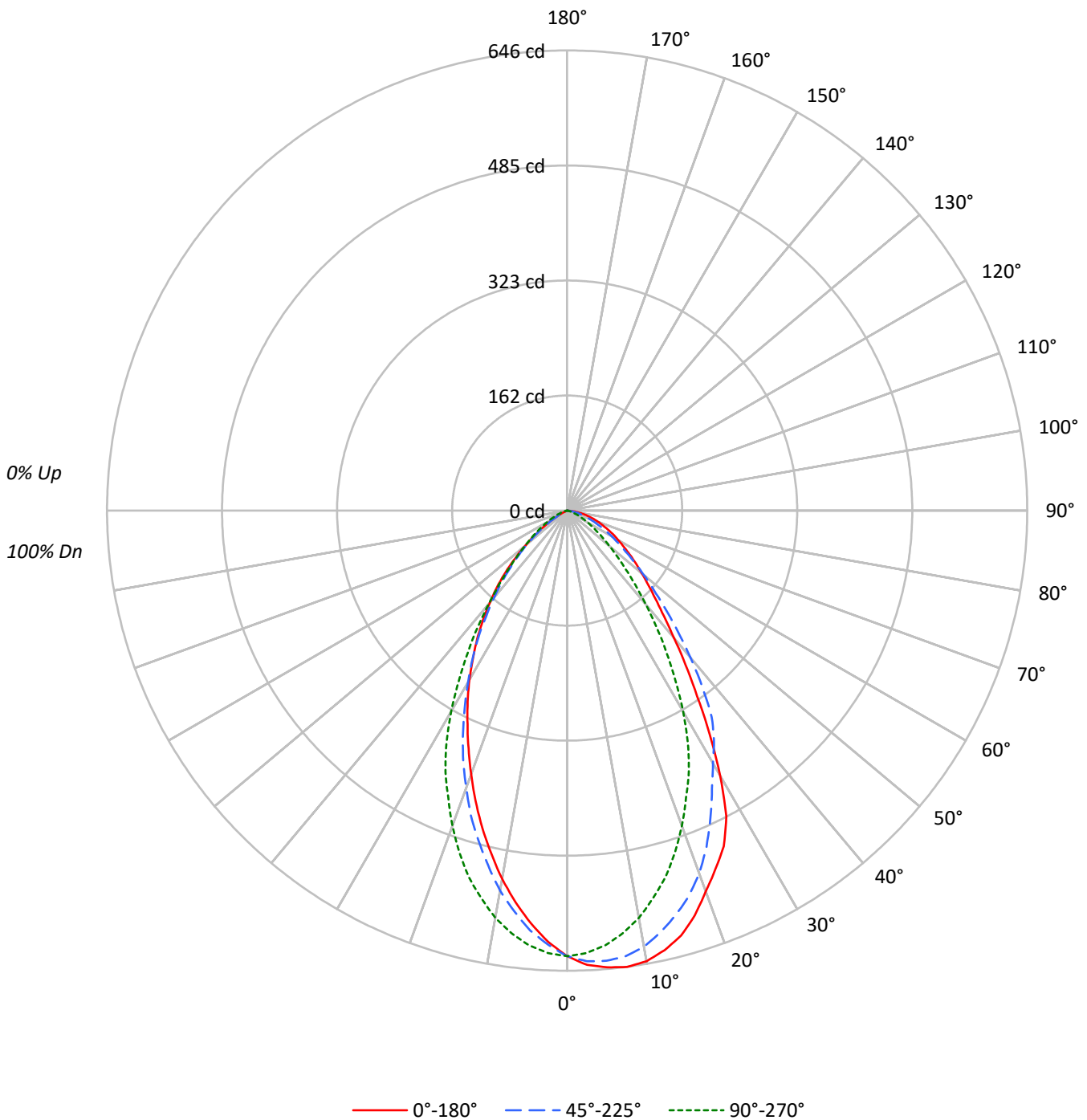
Input Watts (W): 12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	109	106	103	110	107	104	101	102	100	98	99	97	95	95	94	92	91					91			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	85	83	81					81			
3	98	90	84	79	96	89	83	79	86	81	77	83	79	76	81	78	75	73					73			
4	92	83	76	71	90	81	75	70	79	74	69	77	72	69	75	71	68	66					66			
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	70	65	62	60					60			
6	81	70	63	58	79	69	63	58	68	62	57	66	61	57	65	60	56	55					55			
7	76	65	58	53	74	64	58	53	63	57	52	62	56	52	60	55	52	50					50			
8	72	60	53	49	70	60	53	48	59	53	48	58	52	48	56	51	48	46					46			
9	68	56	50	45	66	56	49	45	55	49	45	54	48	44	53	48	44	43					43			
10	64	53	46	42	63	52	46	42	51	46	41	51	45	41	50	45	41	40					40			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	47878	47878	47878
5°	49452	47077	44703
10°	49922	45119	40813
15°	48957	42229	36515
20°	46340	38374	32085
25°	43917	34137	27938
30°	37997	28778	24235
35°	29705	22734	20567
40°	23281	17106	16847
45°	18944	12535	13239
50°	16243	9193	9193
55°	14252	6873	5498
60°	12614	4929	2557
65°	11428	3496	471
70°	10362	2305	0
75°	9138	1508	0
80°	7361	573	0
85°	4479	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	57.5	7.4
10°-20°	149.5	19.3
20°-30°	188.7	24.4
30°-40°	167.3	21.6
40°-50°	111.0	14.3
50°-60°	60.4	7.8
60°-70°	27.1	3.5
70°-80°	10.5	1.4
80°-90°	1.8	0.2
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°	395.8	51.1
0°-40°	563.1	72.8
0°-60°	734.5	94.9
0°-90°	773.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	773.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	626	626	626	626	626	
5°	644	634	613	592	582	61
15°	618	588	533	480	461	173
25°	520	476	404	346	331	235
35°	318	354	243	218	220	201
45°	175	194	116	112	122	137
55°	107	100	52	40	41	96
65°	63	49	19	1	3	63
75°	31	19	5	0	0	33
85°	5	3	0	0	0	7
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°	625.5	625.5	625.5	625.5	625.5	625.5	625.5	625.5	625.5	625.5	625.5
2.5°	638.4	637.1	637.1	637.1	635.8	635.8	635.8	635.8	634.5	633.3	633.3
5°	643.6	644.8	643.6	642.3	642.3	642.3	641.0	639.7	638.4	637.1	634.5
7.5°	646.1	644.8	644.8	643.6	642.3	641.0	639.7	638.4	635.8	633.3	630.7
10°	642.3	641.0	639.7	639.7	635.8	635.8	634.5	632.0	628.1	625.5	621.7
12.5°	632.0	632.0	630.7	629.4	625.5	625.5	623.0	620.4	616.5	611.4	606.2
15°	617.8	617.8	615.2	613.9	611.4	610.1	607.5	603.7	599.8	594.6	588.2
17.5°	595.9	595.9	594.6	592.1	590.8	589.5	585.6	583.1	577.9	572.8	567.6
20°	568.9	566.3	566.3	565.0	562.5	561.2	559.9	556.0	552.2	547.0	541.9
22.5°	544.4	543.2	539.3	536.7	532.9	530.3	529.0	523.9	521.3	517.4	511.0
25°	520.0	517.4	516.1	512.3	507.1	505.8	502.0	494.2	489.1	482.7	476.2
27.5°	484.0	484.0	485.2	484.0	478.8	477.5	474.9	468.5	458.2	447.9	440.2
30°	429.9	428.6	429.9	432.5	436.3	437.6	440.2	438.9	431.2	419.6	409.3
32.5°	372.0	372.0	377.1	381.0	384.8	386.1	388.7	395.1	395.1	391.3	383.6
35°	317.9	320.5	324.4	328.2	333.4	334.6	341.1	342.4	350.1	355.2	354.0
37.5°	272.9	275.4	276.7	280.6	285.7	287.0	289.6	298.6	307.6	314.1	311.5
40°	233.0	233.0	236.8	240.7	245.8	247.1	251.0	256.1	266.4	269.0	269.0
42.5°	200.8	202.1	203.4	205.9	209.8	212.4	214.9	222.7	227.8	231.7	229.1
45°	175.0	176.3	177.6	180.2	182.8	184.1	186.6	191.8	195.6	195.6	194.4
47.5°	154.5	154.5	155.7	157.0	159.6	160.9	163.5	166.0	167.3	166.0	164.7
50°	136.4	137.7	137.7	139.0	140.3	142.9	144.2	144.2	144.2	142.9	140.3
52.5°	121.0	121.0	122.3	122.3	124.8	126.1	126.1	126.1	124.8	122.3	118.4
55°	106.8	106.8	106.8	108.1	110.7	110.7	110.7	109.4	108.1	104.3	100.4
57.5°	94.0	95.2	95.2	95.2	96.5	96.5	96.5	95.2	92.7	88.8	84.9
60°	82.4	83.7	83.7	83.7	84.9	84.9	83.7	82.4	79.8	74.7	72.1
62.5°	73.4	73.4	73.4	73.4	73.4	73.4	72.1	69.5	66.9	63.1	60.5
65°	63.1	63.1	63.1	64.4	63.1	61.8	61.8	59.2	56.6	52.8	48.9
67.5°	54.1	54.1	54.1	54.1	52.8	52.8	51.5	48.9	46.3	43.8	39.9
70°	46.3	46.3	46.3	45.0	43.8	43.8	42.5	39.9	37.3	34.8	32.2
72.5°	38.6	38.6	38.6	37.3	36.0	34.8	34.8	32.2	29.6	27.0	25.7
75°	30.9	30.9	30.9	29.6	28.3	27.0	27.0	24.5	23.2	21.9	19.3
77.5°	24.5	24.5	23.2	21.9	21.9	20.6	20.6	19.3	18.0	15.4	14.2
80°	16.7	16.7	16.7	16.7	15.4	14.2	14.2	12.9	11.6	10.3	9.0
82.5°	11.6	11.6	10.3	10.3	9.0	9.0	9.0	7.7	7.7	6.4	5.1
85°	5.1	5.1	5.1	5.1	3.9	3.9	3.9	3.9	3.9	2.6	2.6
87.5°	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	1.3	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	625.5	625.5	625.5	625.5	625.5	625.5	625.5	625.5	625.5	625.5	625.5
2.5°	632.0	630.7	630.7	628.1	628.1	626.8	625.5	624.2	623.0	621.7	620.4
5°	633.3	630.7	628.1	625.5	625.5	623.0	620.4	617.8	616.5	612.7	610.1
7.5°	628.1	624.2	621.7	617.8	616.5	613.9	610.1	606.2	602.4	598.5	594.6
10°	617.8	612.7	608.8	604.9	601.1	599.8	594.6	590.8	584.3	580.5	576.6
12.5°	602.4	597.2	592.1	585.6	584.3	581.8	575.3	568.9	563.8	557.3	552.2
15°	583.1	577.9	570.2	565.0	561.2	557.3	552.2	545.7	538.0	532.9	526.4
17.5°	561.2	553.5	545.7	539.3	534.1	531.6	522.6	514.8	509.7	503.3	496.8
20°	535.4	526.4	517.4	508.4	504.5	499.4	491.7	484.0	476.2	471.1	462.1
22.5°	504.5	495.5	486.5	476.2	473.7	468.5	459.5	451.8	445.3	436.3	428.6
25°	469.8	462.1	455.6	446.6	441.5	436.3	428.6	419.6	410.6	404.2	395.1
27.5°	435.0	429.9	423.5	414.4	409.3	404.2	393.9	384.8	373.3	366.8	356.5
30°	401.6	397.7	388.7	379.7	370.7	366.8	352.7	342.4	332.1	325.6	317.9
32.5°	372.0	360.4	348.8	335.9	330.8	325.6	311.5	301.2	292.2	283.2	275.4
35°	338.5	320.5	307.6	296.0	289.6	284.5	272.9	261.3	253.6	243.3	238.1
37.5°	302.5	287.0	271.6	257.4	252.3	244.6	235.5	222.7	214.9	205.9	198.2
40°	263.9	253.6	236.8	222.7	216.2	211.1	199.5	189.2	178.9	171.2	166.0
42.5°	224.0	217.5	204.6	190.5	184.1	178.9	168.6	157.0	148.0	141.6	135.1
45°	190.5	185.3	175.0	162.2	154.5	149.3	139.0	128.7	121.0	115.8	112.0
47.5°	160.9	155.7	146.7	135.1	128.7	123.6	113.3	104.3	99.1	95.2	92.7
50°	135.1	128.7	121.0	113.3	106.8	101.7	92.7	86.2	81.1	77.2	75.9
52.5°	113.3	108.1	100.4	92.7	87.5	83.7	74.7	69.5	66.9	63.1	60.5
55°	95.2	90.1	83.7	75.9	72.1	68.2	61.8	57.9	54.1	51.5	48.9
57.5°	79.8	74.7	68.2	61.8	57.9	55.3	50.2	46.3	43.8	41.2	38.6
60°	66.9	61.8	56.6	50.2	47.6	45.0	41.2	37.3	34.8	32.2	29.6
62.5°	55.3	50.2	45.0	39.9	38.6	36.0	33.5	29.6	27.0	25.7	23.2
65°	46.3	41.2	36.0	32.2	30.9	28.3	25.7	23.2	20.6	19.3	18.0
67.5°	37.3	32.2	28.3	25.7	24.5	23.2	20.6	18.0	16.7	14.2	12.9
70°	29.6	25.7	21.9	19.3	18.0	16.7	15.4	14.2	11.6	10.3	9.0
72.5°	21.9	19.3	16.7	14.2	14.2	12.9	11.6	10.3	9.0	7.7	6.4
75°	16.7	14.2	12.9	10.3	10.3	9.0	7.7	6.4	5.1	5.1	3.9
77.5°	11.6	10.3	9.0	7.7	6.4	6.4	5.1	3.9	3.9	2.6	2.6
80°	7.7	6.4	5.1	3.9	3.9	3.9	2.6	2.6	2.6	1.3	1.3
82.5°	5.1	3.9	2.6	2.6	2.6	1.3	1.3	1.3	1.3	1.3	0.0
85°	1.3	1.3	1.3	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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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	625.5	625.5	625.5	625.5	625.5	625.5	625.5	625.5	625.5	625.5	625.5
2.5°	619.1	617.8	616.5	615.2	615.2	612.7	612.7	611.4	610.1	610.1	608.8
5°	607.5	604.9	602.4	601.1	601.1	597.2	594.6	593.4	592.1	590.8	588.2
7.5°	590.8	588.2	584.3	581.8	580.5	576.6	574.0	570.2	567.6	566.3	562.5
10°	571.5	567.6	561.2	559.9	557.3	553.5	549.6	545.7	541.9	538.0	535.4
12.5°	547.0	540.6	536.7	532.9	530.3	526.4	520.0	514.8	511.0	508.4	504.5
15°	520.0	513.6	508.4	504.5	502.0	496.8	489.1	485.2	480.1	474.9	473.7
17.5°	489.1	481.4	476.2	472.4	468.5	464.6	456.9	453.1	449.2	444.1	440.2
20°	455.6	447.9	442.8	437.6	433.8	429.9	424.7	418.3	414.4	411.9	406.7
22.5°	420.9	414.4	406.7	404.2	401.6	392.6	388.7	383.6	381.0	377.1	374.5
25°	387.4	378.4	373.3	369.4	365.5	359.1	352.7	348.8	346.2	343.7	339.8
27.5°	350.1	344.9	338.5	333.4	332.1	325.6	319.2	315.3	311.5	308.9	305.0
30°	310.2	303.8	298.6	298.6	296.0	290.9	288.3	283.2	278.0	276.7	275.4
32.5°	269.0	265.1	261.3	258.7	258.7	254.8	251.0	249.7	247.1	244.6	244.6
35°	231.7	227.8	224.0	222.7	222.7	220.1	218.8	217.5	217.5	216.2	214.9
37.5°	195.6	190.5	186.6	186.6	186.6	186.6	186.6	186.6	186.6	189.2	187.9
40°	162.2	159.6	158.3	157.0	157.0	157.0	158.3	158.3	159.6	162.2	163.5
42.5°	132.6	132.6	131.3	131.3	130.0	131.3	132.6	133.9	135.1	135.1	137.7
45°	110.7	109.4	108.1	108.1	109.4	108.1	109.4	112.0	112.0	113.3	114.6
47.5°	90.1	88.8	88.8	88.8	88.8	88.8	88.8	90.1	91.4	91.4	92.7
50°	73.4	72.1	70.8	72.1	70.8	70.8	72.1	72.1	72.1	73.4	73.4
52.5°	57.9	56.6	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3
55°	45.0	43.8	42.5	42.5	41.2	41.2	39.9	39.9	39.9	39.9	39.9
57.5°	36.0	33.5	32.2	30.9	30.9	28.3	27.0	27.0	25.7	25.7	25.7
60°	27.0	25.7	23.2	23.2	21.9	19.3	18.0	15.4	15.4	14.2	14.2
62.5°	20.6	19.3	18.0	16.7	15.4	12.9	10.3	7.7	5.1	5.1	6.4
65°	15.4	14.2	11.6	10.3	10.3	7.7	5.1	2.6	1.3	1.3	2.6
67.5°	11.6	10.3	7.7	6.4	5.1	3.9	1.3	0.0	0.0	0.0	0.0
70°	7.7	6.4	3.9	3.9	2.6	1.3	0.0	0.0	0.0	0.0	0.0
72.5°	5.1	3.9	2.6	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	2.6	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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: PRS415D010-S4M12-41SWWC-3000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	625.5	625.5	625.5	625.5	625.5	625.5	625.5	625.5
2.5°	607.5	607.5	607.5	607.5	606.2	606.2	606.2	606.2
5°	588.2	584.3	584.3	584.3	584.3	584.3	583.1	581.8
7.5°	561.2	558.6	558.6	557.3	557.3	556.0	556.0	554.7
10°	532.9	530.3	530.3	527.7	527.7	526.4	525.1	525.1
12.5°	500.7	498.1	498.1	498.1	495.5	495.5	493.0	493.0
15°	468.5	465.9	464.6	464.6	462.1	462.1	460.8	460.8
17.5°	435.0	433.8	431.2	431.2	429.9	427.3	427.3	427.3
20°	404.2	400.3	399.0	399.0	395.1	395.1	393.9	393.9
22.5°	370.7	368.1	366.8	365.5	363.0	364.3	361.7	361.7
25°	337.2	337.2	334.6	334.6	333.4	332.1	330.8	330.8
27.5°	305.0	305.0	303.8	303.8	302.5	301.2	301.2	302.5
30°	274.2	274.2	274.2	275.4	274.2	272.9	274.2	274.2
32.5°	244.6	244.6	245.8	244.6	245.8	245.8	245.8	245.8
35°	216.2	216.2	217.5	217.5	218.8	218.8	220.1	220.1
37.5°	187.9	190.5	190.5	190.5	193.1	193.1	194.4	194.4
40°	163.5	163.5	164.7	166.0	167.3	168.6	169.9	168.6
42.5°	139.0	139.0	140.3	141.6	142.9	144.2	145.4	145.4
45°	114.6	115.8	117.1	117.1	119.7	121.0	121.0	122.3
47.5°	92.7	95.2	95.2	95.2	96.5	97.8	99.1	97.8
50°	73.4	74.7	74.7	74.7	75.9	77.2	77.2	77.2
52.5°	55.3	56.6	56.6	56.6	57.9	57.9	57.9	59.2
55°	39.9	39.9	39.9	41.2	41.2	41.2	41.2	41.2
57.5°	25.7	25.7	25.7	27.0	28.3	28.3	27.0	27.0
60°	14.2	15.4	16.7	16.7	16.7	18.0	16.7	16.7
62.5°	7.7	9.0	9.0	9.0	9.0	9.0	9.0	9.0
65°	2.6	3.9	3.9	3.9	3.9	3.9	2.6	2.6
67.5°	1.3	1.3	1.3	1.3	1.3	0.0	1.3	1.3
70°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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

(END OF REPORT)