

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: P241998

Luminaire Tested: **PRS410D010-S4M12-41SWWC**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P241998
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: PRS410D010-S4M12-41SWWC
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM SPECULAR
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

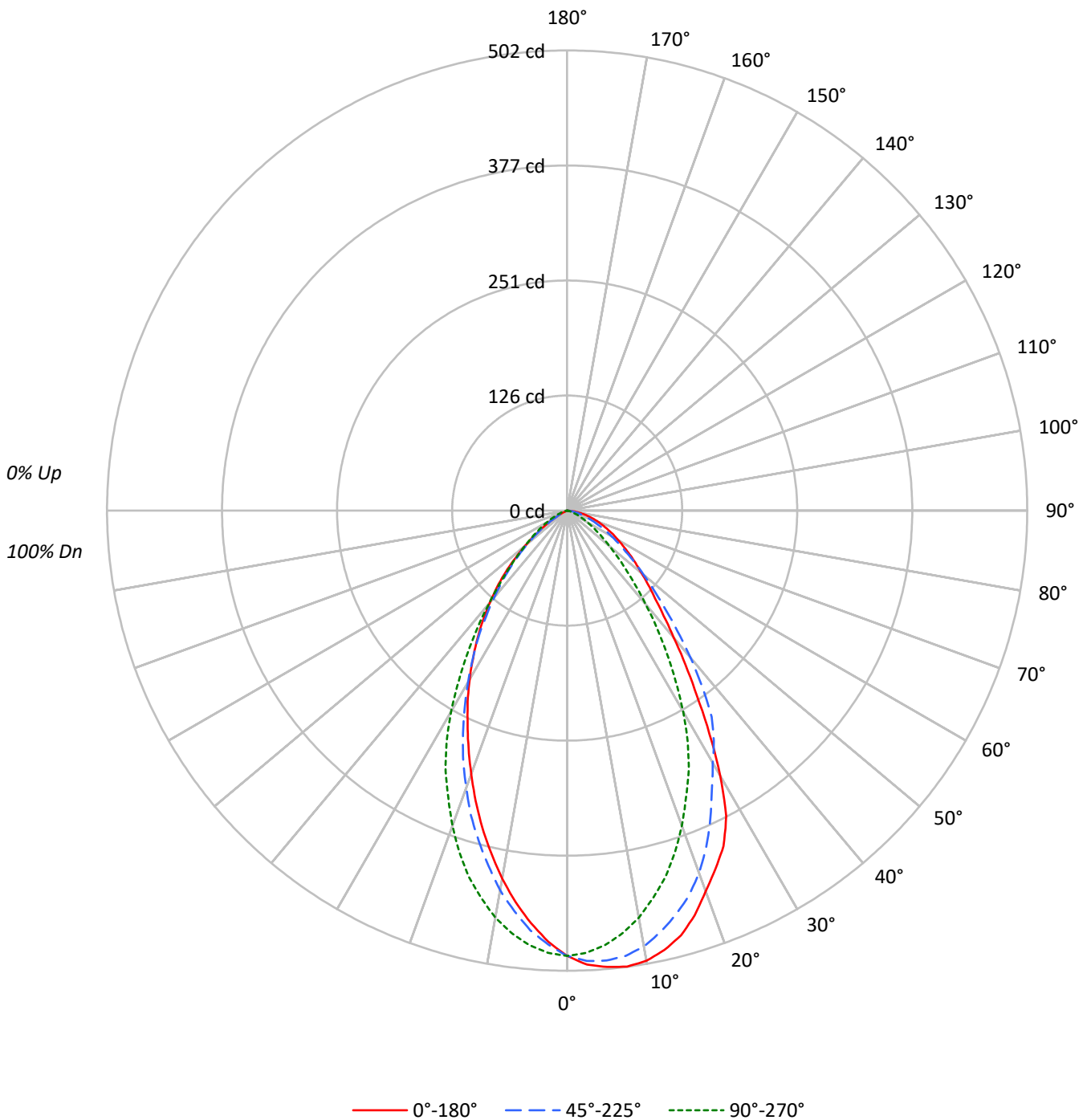
Lumens per Lamp: N/A
Luminaire Lumens: 601.0 lumens
Efficiency: N/A
Efficacy: 60.1 lumens/watt
Spacing Criteria (0/90/45): 0.94 / 0.9 / 0.99
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')
CIE Type: Direct

Input Watts (W): 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	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°	37185	37185	37185
5°	38395	36558	34714
10°	38761	35038	31696
15°	38021	32791	28353
20°	35987	29797	24909
25°	34103	26502	21697
30°	29503	22352	18817
35°	23071	17651	15969
40°	18076	13279	13080
45°	14711	9742	10284
50°	12611	7145	7145
55°	11076	5338	4270
60°	9798	3827	1990
65°	8875	2717	362
70°	8057	1790	0
75°	7098	1183	0
80°	5730	441	0
85°	3513	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.7	7.4
10°-20°	116.1	19.3
20°-30°	146.6	24.4
30°-40°	129.9	21.6
40°-50°	86.2	14.3
50°-60°	46.9	7.8
60°-70°	21.1	3.5
70°-80°	8.2	1.4
80°-90°	1.4	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°	307.3	51.1
0°-40°	437.3	72.8
0°-60°	570.4	94.9
0°-90°	601.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	601.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	486	486	486	486	486	
5°	500	493	476	460	452	48
15°	480	457	414	373	358	134
25°	404	370	314	269	257	183
35°	247	275	189	169	171	156
45°	136	151	90	87	95	107
55°	83	78	40	31	32	75
65°	49	38	15	1	2	49
75°	24	15	4	0	0	26
85°	4	2	0	0	0	5
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°	485.8	485.8	485.8	485.8	485.8	485.8	485.8	485.8	485.8	485.8	485.8
2.5°	495.8	494.8	494.8	494.8	493.8	493.8	493.8	493.8	492.8	491.8	491.8
5°	499.7	500.7	499.7	498.7	498.7	498.7	497.7	496.8	495.8	494.8	492.8
7.5°	501.7	500.7	500.7	499.7	498.7	497.7	496.8	495.8	493.8	491.8	489.8
10°	498.7	497.7	496.8	496.8	493.8	493.8	492.8	490.8	487.8	485.8	482.8
12.5°	490.8	490.8	489.8	488.8	485.8	485.8	483.8	481.8	478.8	474.8	470.8
15°	479.8	479.8	477.8	476.8	474.8	473.8	471.8	468.8	465.8	461.8	456.8
17.5°	462.8	462.8	461.8	459.8	458.8	457.8	454.8	452.8	448.8	444.8	440.8
20°	441.8	439.8	439.8	438.8	436.8	435.8	434.8	431.8	428.8	424.8	420.8
22.5°	422.8	421.8	418.8	416.8	413.8	411.8	410.8	406.8	404.8	401.8	396.8
25°	403.8	401.8	400.8	397.8	393.8	392.8	389.8	383.8	379.8	374.8	369.8
27.5°	375.8	375.8	376.8	375.8	371.8	370.8	368.8	363.8	355.8	347.8	341.8
30°	333.8	332.8	333.8	335.8	338.8	339.8	341.8	340.8	334.8	325.8	317.8
32.5°	288.9	288.9	292.9	295.9	298.8	299.8	301.8	306.8	306.8	303.8	297.9
35°	246.9	248.9	251.9	254.9	258.9	259.9	264.9	265.9	271.9	275.9	274.9
37.5°	211.9	213.9	214.9	217.9	221.9	222.9	224.9	231.9	238.9	243.9	241.9
40°	180.9	180.9	183.9	186.9	190.9	191.9	194.9	198.9	206.9	208.9	208.9
42.5°	155.9	156.9	157.9	159.9	162.9	164.9	166.9	172.9	176.9	179.9	177.9
45°	135.9	136.9	137.9	139.9	141.9	142.9	144.9	148.9	151.9	151.9	150.9
47.5°	119.9	119.9	120.9	121.9	123.9	124.9	126.9	128.9	129.9	128.9	127.9
50°	105.9	106.9	106.9	107.9	108.9	110.9	111.9	111.9	111.9	110.9	108.9
52.5°	94.0	94.0	95.0	95.0	97.0	98.0	98.0	98.0	97.0	95.0	92.0
55°	83.0	83.0	83.0	84.0	86.0	86.0	86.0	85.0	84.0	81.0	78.0
57.5°	73.0	74.0	74.0	74.0	75.0	75.0	75.0	74.0	72.0	69.0	66.0
60°	64.0	65.0	65.0	65.0	66.0	66.0	65.0	64.0	62.0	58.0	56.0
62.5°	57.0	57.0	57.0	57.0	57.0	57.0	56.0	54.0	52.0	49.0	47.0
65°	49.0	49.0	49.0	50.0	49.0	48.0	48.0	46.0	44.0	41.0	38.0
67.5°	42.0	42.0	42.0	42.0	41.0	41.0	40.0	38.0	36.0	34.0	31.0
70°	36.0	36.0	36.0	35.0	34.0	34.0	33.0	31.0	29.0	27.0	25.0
72.5°	30.0	30.0	30.0	29.0	28.0	27.0	27.0	25.0	23.0	21.0	20.0
75°	24.0	24.0	24.0	23.0	22.0	21.0	21.0	19.0	18.0	17.0	15.0
77.5°	19.0	19.0	18.0	17.0	17.0	16.0	16.0	15.0	14.0	12.0	11.0
80°	13.0	13.0	13.0	13.0	12.0	11.0	11.0	10.0	9.0	8.0	7.0
82.5°	9.0	9.0	8.0	8.0	7.0	7.0	7.0	6.0	6.0	5.0	4.0
85°	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
87.5°	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	485.8	485.8	485.8	485.8	485.8	485.8	485.8	485.8	485.8	485.8	485.8
2.5°	490.8	489.8	489.8	487.8	487.8	486.8	485.8	484.8	483.8	482.8	481.8
5°	491.8	489.8	487.8	485.8	485.8	483.8	481.8	479.8	478.8	475.8	473.8
7.5°	487.8	484.8	482.8	479.8	478.8	476.8	473.8	470.8	467.8	464.8	461.8
10°	479.8	475.8	472.8	469.8	466.8	465.8	461.8	458.8	453.8	450.8	447.8
12.5°	467.8	463.8	459.8	454.8	453.8	451.8	446.8	441.8	437.8	432.8	428.8
15°	452.8	448.8	442.8	438.8	435.8	432.8	428.8	423.8	417.8	413.8	408.8
17.5°	435.8	429.8	423.8	418.8	414.8	412.8	405.8	399.8	395.8	390.8	385.8
20°	415.8	408.8	401.8	394.8	391.8	387.8	381.8	375.8	369.8	365.8	358.8
22.5°	391.8	384.8	377.8	369.8	367.8	363.8	356.8	350.8	345.8	338.8	332.8
25°	364.8	358.8	353.8	346.8	342.8	338.8	332.8	325.8	318.8	313.8	306.8
27.5°	337.8	333.8	328.8	321.8	317.8	313.8	305.8	298.8	289.9	284.9	276.9
30°	311.8	308.8	301.8	294.9	287.9	284.9	273.9	265.9	257.9	252.9	246.9
32.5°	288.9	279.9	270.9	260.9	256.9	252.9	241.9	233.9	226.9	219.9	213.9
35°	262.9	248.9	238.9	229.9	224.9	220.9	211.9	202.9	196.9	188.9	184.9
37.5°	234.9	222.9	210.9	199.9	195.9	189.9	182.9	172.9	166.9	159.9	153.9
40°	204.9	196.9	183.9	172.9	167.9	163.9	154.9	146.9	138.9	132.9	128.9
42.5°	173.9	168.9	158.9	147.9	142.9	138.9	130.9	121.9	114.9	109.9	104.9
45°	147.9	143.9	135.9	125.9	119.9	115.9	107.9	99.9	94.0	90.0	87.0
47.5°	124.9	120.9	113.9	104.9	99.9	96.0	88.0	81.0	77.0	74.0	72.0
50°	104.9	99.9	94.0	88.0	83.0	79.0	72.0	67.0	63.0	60.0	59.0
52.5°	88.0	84.0	78.0	72.0	68.0	65.0	58.0	54.0	52.0	49.0	47.0
55°	74.0	70.0	65.0	59.0	56.0	53.0	48.0	45.0	42.0	40.0	38.0
57.5°	62.0	58.0	53.0	48.0	45.0	43.0	39.0	36.0	34.0	32.0	30.0
60°	52.0	48.0	44.0	39.0	37.0	35.0	32.0	29.0	27.0	25.0	23.0
62.5°	43.0	39.0	35.0	31.0	30.0	28.0	26.0	23.0	21.0	20.0	18.0
65°	36.0	32.0	28.0	25.0	24.0	22.0	20.0	18.0	16.0	15.0	14.0
67.5°	29.0	25.0	22.0	20.0	19.0	18.0	16.0	14.0	13.0	11.0	10.0
70°	23.0	20.0	17.0	15.0	14.0	13.0	12.0	11.0	9.0	8.0	7.0
72.5°	17.0	15.0	13.0	11.0	11.0	10.0	9.0	8.0	7.0	6.0	5.0
75°	13.0	11.0	10.0	8.0	8.0	7.0	6.0	5.0	4.0	4.0	3.0
77.5°	9.0	8.0	7.0	6.0	5.0	5.0	4.0	3.0	3.0	2.0	2.0
80°	6.0	5.0	4.0	3.0	3.0	3.0	2.0	2.0	2.0	1.0	1.0
82.5°	4.0	3.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	0.0
85°	1.0	1.0	1.0	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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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	485.8	485.8	485.8	485.8	485.8	485.8	485.8	485.8	485.8	485.8	485.8
2.5°	480.8	479.8	478.8	477.8	477.8	475.8	475.8	474.8	473.8	473.8	472.8
5°	471.8	469.8	467.8	466.8	466.8	463.8	461.8	460.8	459.8	458.8	456.8
7.5°	458.8	456.8	453.8	451.8	450.8	447.8	445.8	442.8	440.8	439.8	436.8
10°	443.8	440.8	435.8	434.8	432.8	429.8	426.8	423.8	420.8	417.8	415.8
12.5°	424.8	419.8	416.8	413.8	411.8	408.8	403.8	399.8	396.8	394.8	391.8
15°	403.8	398.8	394.8	391.8	389.8	385.8	379.8	376.8	372.8	368.8	367.8
17.5°	379.8	373.8	369.8	366.8	363.8	360.8	354.8	351.8	348.8	344.8	341.8
20°	353.8	347.8	343.8	339.8	336.8	333.8	329.8	324.8	321.8	319.8	315.8
22.5°	326.8	321.8	315.8	313.8	311.8	304.8	301.8	297.9	295.9	292.9	290.9
25°	300.8	293.9	289.9	286.9	283.9	278.9	273.9	270.9	268.9	266.9	263.9
27.5°	271.9	267.9	262.9	258.9	257.9	252.9	247.9	244.9	241.9	239.9	236.9
30°	240.9	235.9	231.9	231.9	229.9	225.9	223.9	219.9	215.9	214.9	213.9
32.5°	208.9	205.9	202.9	200.9	200.9	197.9	194.9	193.9	191.9	189.9	189.9
35°	179.9	176.9	173.9	172.9	172.9	170.9	169.9	168.9	168.9	167.9	166.9
37.5°	151.9	147.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	146.9	145.9
40°	125.9	123.9	122.9	121.9	121.9	121.9	122.9	122.9	123.9	125.9	126.9
42.5°	102.9	102.9	101.9	101.9	100.9	101.9	102.9	103.9	104.9	104.9	106.9
45°	86.0	85.0	84.0	84.0	85.0	84.0	85.0	87.0	87.0	88.0	89.0
47.5°	70.0	69.0	69.0	69.0	69.0	69.0	69.0	70.0	71.0	71.0	72.0
50°	57.0	56.0	55.0	56.0	55.0	55.0	56.0	56.0	56.0	57.0	57.0
52.5°	45.0	44.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0
55°	35.0	34.0	33.0	33.0	32.0	32.0	31.0	31.0	31.0	31.0	31.0
57.5°	28.0	26.0	25.0	24.0	24.0	22.0	21.0	21.0	20.0	20.0	20.0
60°	21.0	20.0	18.0	18.0	17.0	15.0	14.0	12.0	12.0	11.0	11.0
62.5°	16.0	15.0	14.0	13.0	12.0	10.0	8.0	6.0	4.0	4.0	5.0
65°	12.0	11.0	9.0	8.0	8.0	6.0	4.0	2.0	1.0	1.0	2.0
67.5°	9.0	8.0	6.0	5.0	4.0	3.0	1.0	0.0	0.0	0.0	0.0
70°	6.0	5.0	3.0	3.0	2.0	1.0	0.0	0.0	0.0	0.0	0.0
72.5°	4.0	3.0	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.0	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: PRS410D010-S4M12-41SWWC

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	485.8	485.8	485.8	485.8	485.8	485.8	485.8	485.8
2.5°	471.8	471.8	471.8	471.8	470.8	470.8	470.8	470.8
5°	456.8	453.8	453.8	453.8	453.8	453.8	452.8	451.8
7.5°	435.8	433.8	433.8	432.8	432.8	431.8	431.8	430.8
10°	413.8	411.8	411.8	409.8	409.8	408.8	407.8	407.8
12.5°	388.8	386.8	386.8	386.8	384.8	384.8	382.8	382.8
15°	363.8	361.8	360.8	360.8	358.8	358.8	357.8	357.8
17.5°	337.8	336.8	334.8	334.8	333.8	331.8	331.8	331.8
20°	313.8	310.8	309.8	309.8	306.8	306.8	305.8	305.8
22.5°	287.9	285.9	284.9	283.9	281.9	282.9	280.9	280.9
25°	261.9	261.9	259.9	259.9	258.9	257.9	256.9	256.9
27.5°	236.9	236.9	235.9	235.9	234.9	233.9	233.9	234.9
30°	212.9	212.9	212.9	213.9	212.9	211.9	212.9	212.9
32.5°	189.9	189.9	190.9	189.9	190.9	190.9	190.9	190.9
35°	167.9	167.9	168.9	168.9	169.9	169.9	170.9	170.9
37.5°	145.9	147.9	147.9	147.9	149.9	149.9	150.9	150.9
40°	126.9	126.9	127.9	128.9	129.9	130.9	131.9	130.9
42.5°	107.9	107.9	108.9	109.9	110.9	111.9	112.9	112.9
45°	89.0	90.0	91.0	91.0	93.0	94.0	94.0	95.0
47.5°	72.0	74.0	74.0	74.0	75.0	76.0	77.0	76.0
50°	57.0	58.0	58.0	58.0	59.0	60.0	60.0	60.0
52.5°	43.0	44.0	44.0	44.0	45.0	45.0	45.0	46.0
55°	31.0	31.0	31.0	32.0	32.0	32.0	32.0	32.0
57.5°	20.0	20.0	20.0	21.0	22.0	22.0	21.0	21.0
60°	11.0	12.0	13.0	13.0	13.0	14.0	13.0	13.0
62.5°	6.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
65°	2.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
67.5°	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0
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)