

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: P242028

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

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242028
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: PRS410D010-S4M12-41SWWMW
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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 594.0 lumens
Efficiency: N/A
Efficacy: 59.4 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

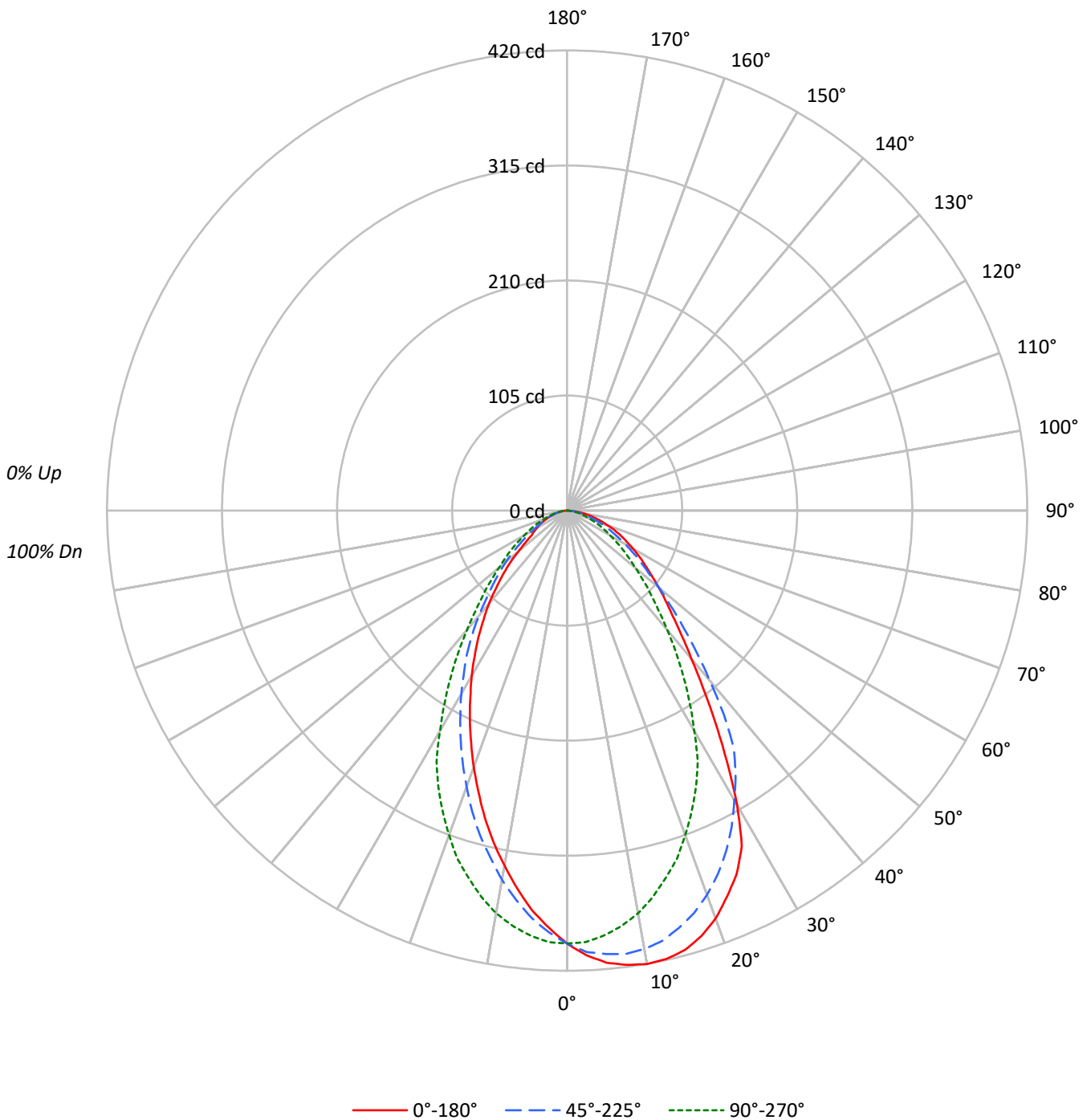
Input Watts (W): 10
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	30250	30250	30250
5°	31825	29904	28137
10°	32660	29007	25579
15°	32902	27513	22989
20°	32273	25667	20291
25°	30928	23487	17744
30°	27408	20514	15388
35°	21968	17296	13185
40°	17596	14199	11091
45°	14733	11691	8985
50°	12980	9646	6907
55°	11610	8274	5338
60°	10563	6889	4899
65°	9780	5977	4528
70°	8728	4924	4028
75°	7985	4140	3549
80°	7053	3526	3086
85°	4391	2635	2635



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.7	6.2
10°-20°	98.1	16.5
20°-30°	130.3	21.9
30°-40°	122.8	20.7
40°-50°	89.8	15.1
50°-60°	59.0	9.9
60°-70°	35.5	6.0
70°-80°	17.5	2.9
80°-90°	4.2	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
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0°-30°	265.1	44.6
0°-40°	387.9	65.3
0°-60°	536.7	90.4
0°-90°	594.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	594.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	395	395	395	395	395	
5°	414	406	389	373	366	40
15°	415	394	347	307	290	117
25°	366	343	278	230	210	166
35°	235	265	185	159	141	148
45°	136	149	108	96	83	107
55°	87	82	62	52	40	78
65°	54	44	33	24	25	53
75°	27	20	14	12	12	29
85°	5	4	3	3	3	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°	395.2	395.2	395.2	395.2	395.2	395.2	395.2	395.2	395.2	395.2	395.2
2.5°	406.2	406.2	406.2	406.2	405.2	405.2	405.2	404.2	404.2	403.2	403.2
5°	414.2	414.2	413.2	413.2	412.2	412.2	411.2	410.2	409.2	408.2	406.2
7.5°	418.2	418.2	417.2	417.2	416.2	416.2	415.2	414.2	412.2	410.2	408.2
10°	420.2	419.2	419.2	418.2	417.2	416.2	415.2	414.2	411.2	409.2	406.2
12.5°	419.2	418.2	418.2	416.2	415.2	414.2	413.2	411.2	408.2	405.2	402.2
15°	415.2	414.2	413.2	412.2	410.2	409.2	408.2	405.2	402.2	398.2	394.2
17.5°	407.2	406.2	406.2	404.2	402.2	401.2	400.2	397.2	393.2	389.2	385.2
20°	396.2	395.2	394.2	393.2	391.2	390.2	389.2	386.2	382.2	378.2	373.2
22.5°	381.2	380.2	380.2	379.2	377.2	376.2	375.2	372.2	369.2	364.2	359.2
25°	366.2	365.2	364.2	363.2	361.2	359.2	358.2	355.2	352.2	349.2	343.2
27.5°	345.2	346.2	346.2	345.2	344.2	343.2	342.2	338.2	334.2	330.1	325.1
30°	310.1	308.1	310.1	313.1	316.1	317.1	320.1	320.1	316.1	311.1	305.1
32.5°	271.1	272.1	273.1	277.1	281.1	282.1	284.1	290.1	295.1	292.1	286.1
35°	235.1	236.1	238.1	241.1	244.1	249.1	251.1	256.1	261.1	267.1	265.1
37.5°	203.1	204.1	206.1	208.1	213.1	215.1	219.1	223.1	231.1	236.1	235.1
40°	176.1	177.1	178.1	180.1	186.1	187.1	189.1	195.1	200.1	204.1	202.1
42.5°	155.1	154.1	156.1	158.1	161.1	162.1	164.1	168.1	172.1	174.1	174.1
45°	136.1	137.1	138.1	140.1	141.1	143.1	144.1	147.1	148.1	149.1	149.1
47.5°	122.1	122.1	123.1	124.1	125.1	126.1	127.1	128.1	128.1	128.1	127.1
50°	109.0	109.0	110.0	111.0	111.0	112.1	112.1	112.1	111.0	110.0	109.0
52.5°	97.0	97.0	98.0	99.0	99.0	99.0	99.0	98.0	97.0	96.0	94.0
55°	87.0	87.0	88.0	88.0	88.0	88.0	88.0	86.0	84.0	83.0	82.0
57.5°	78.0	78.0	78.0	78.0	78.0	78.0	77.0	75.0	74.0	72.0	71.0
60°	69.0	69.0	69.0	69.0	69.0	68.0	67.0	66.0	64.0	62.0	61.0
62.5°	61.0	61.0	61.0	61.0	60.0	59.0	59.0	57.0	56.0	54.0	52.0
65°	54.0	54.0	53.0	53.0	52.0	51.0	51.0	49.0	48.0	46.0	44.0
67.5°	47.0	46.0	46.0	46.0	45.0	44.0	43.0	42.0	41.0	39.0	37.0
70°	39.0	39.0	40.0	39.0	38.0	37.0	37.0	35.0	34.0	33.0	31.0
72.5°	33.0	33.0	33.0	32.0	32.0	31.0	30.0	29.0	28.0	27.0	25.0
75°	27.0	27.0	27.0	26.0	25.0	25.0	25.0	23.0	23.0	21.0	20.0
77.5°	21.0	21.0	21.0	20.0	20.0	20.0	19.0	18.0	17.0	17.0	16.0
80°	16.0	16.0	15.0	15.0	14.0	14.0	14.0	13.0	13.0	12.0	11.0
82.5°	11.0	10.0	10.0	10.0	10.0	10.0	9.0	9.0	8.0	8.0	7.0
85°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
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°	395.2	395.2	395.2	395.2	395.2	395.2	395.2	395.2	395.2	395.2	395.2
2.5°	401.2	401.2	400.2	399.2	398.2	398.2	397.2	396.2	395.2	394.2	392.2
5°	405.2	403.2	401.2	399.2	399.2	398.2	395.2	393.2	391.2	389.2	387.2
7.5°	405.2	402.2	400.2	397.2	396.2	394.2	391.2	388.2	385.2	382.2	379.2
10°	403.2	399.2	396.2	392.2	390.2	388.2	384.2	380.2	376.2	373.2	368.2
12.5°	397.2	393.2	389.2	384.2	382.2	380.2	375.2	370.2	366.2	361.2	357.2
15°	389.2	385.2	380.2	375.2	372.2	370.2	364.2	358.2	352.2	347.2	342.2
17.5°	380.2	374.2	369.2	363.2	360.2	356.2	350.2	344.2	338.2	333.1	327.1
20°	367.2	362.2	355.2	348.2	345.2	341.2	335.2	328.1	322.1	315.1	309.1
22.5°	354.2	347.2	340.2	332.1	329.1	325.1	318.1	310.1	304.1	297.1	290.1
25°	337.2	330.1	323.1	316.1	311.1	308.1	301.1	293.1	286.1	278.1	271.1
27.5°	319.1	312.1	305.1	297.1	293.1	289.1	280.1	272.1	264.1	258.1	250.1
30°	299.1	293.1	285.1	274.1	269.1	265.1	255.1	246.1	238.1	232.1	227.1
32.5°	279.1	270.1	259.1	248.1	243.1	238.1	228.1	220.1	214.1	208.1	202.1
35°	253.1	243.1	233.1	223.1	218.1	213.1	205.1	197.1	190.1	185.1	180.1
37.5°	229.1	218.1	207.1	198.1	193.1	189.1	180.1	174.1	168.1	163.1	158.1
40°	200.1	194.1	182.1	174.1	169.1	165.1	157.1	151.1	146.1	142.1	138.1
42.5°	172.1	169.1	159.1	151.1	147.1	144.1	137.1	132.1	127.1	123.1	121.1
45°	147.1	143.1	139.1	131.1	128.1	125.1	119.1	114.1	110.0	108.0	105.0
47.5°	126.1	123.1	119.1	113.1	110.0	108.0	103.0	99.0	96.0	94.0	92.0
50°	107.0	105.0	102.0	98.0	95.0	93.0	89.0	86.0	83.0	81.0	80.0
52.5°	92.0	90.0	87.0	84.0	82.0	80.0	77.0	74.0	73.0	71.0	69.0
55°	79.0	77.0	75.0	72.0	71.0	70.0	67.0	65.0	63.0	62.0	61.0
57.5°	69.0	67.0	64.0	62.0	61.0	60.0	58.0	56.0	54.0	53.0	52.0
60°	59.0	57.0	55.0	53.0	52.0	51.0	50.0	48.0	46.0	45.0	45.0
62.5°	51.0	49.0	47.0	45.0	45.0	44.0	42.0	41.0	40.0	39.0	38.0
65°	43.0	41.0	40.0	38.0	37.0	37.0	36.0	34.0	33.0	33.0	32.0
67.5°	36.0	35.0	33.0	32.0	31.0	31.0	29.0	29.0	28.0	27.0	26.0
70°	30.0	28.0	27.0	26.0	26.0	25.0	24.0	24.0	23.0	22.0	21.0
72.5°	24.0	23.0	22.0	21.0	21.0	20.0	20.0	19.0	18.0	18.0	17.0
75°	19.0	18.0	18.0	16.0	16.0	16.0	15.0	15.0	14.0	14.0	13.0
77.5°	15.0	14.0	13.0	13.0	12.0	12.0	12.0	11.0	11.0	11.0	10.0
80°	10.0	10.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0	8.0	7.0
82.5°	7.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0
85°	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	395.2	395.2	395.2	395.2	395.2	395.2	395.2	395.2	395.2	395.2	395.2
2.5°	391.2	390.2	389.2	389.2	388.2	387.2	387.2	386.2	385.2	384.2	383.2
5°	385.2	383.2	381.2	380.2	379.2	378.2	376.2	374.2	373.2	371.2	370.2
7.5°	376.2	373.2	371.2	369.2	368.2	365.2	363.2	361.2	358.2	357.2	355.2
10°	365.2	361.2	357.2	356.2	354.2	351.2	348.2	344.2	342.2	340.2	338.2
12.5°	352.2	348.2	343.2	341.2	339.2	335.2	331.1	328.1	324.1	322.1	319.1
15°	337.2	332.1	327.1	325.1	323.1	318.1	314.1	310.1	307.1	303.1	300.1
17.5°	321.1	315.1	309.1	307.1	305.1	300.1	296.1	291.1	288.1	284.1	281.1
20°	303.1	297.1	291.1	290.1	286.1	281.1	276.1	272.1	268.1	265.1	261.1
22.5°	284.1	278.1	273.1	270.1	267.1	262.1	257.1	253.1	249.1	244.1	241.1
25°	266.1	259.1	253.1	252.1	248.1	244.1	239.1	234.1	230.1	226.1	223.1
27.5°	245.1	240.1	234.1	231.1	229.1	224.1	220.1	215.1	211.1	207.1	204.1
30°	221.1	216.1	212.1	210.1	208.1	205.1	200.1	197.1	193.1	189.1	186.1
32.5°	198.1	195.1	191.1	189.1	188.1	184.1	182.1	179.1	175.1	172.1	169.1
35°	175.1	173.1	169.1	169.1	167.1	165.1	163.1	161.1	159.1	156.1	153.1
37.5°	155.1	153.1	150.1	148.1	148.1	146.1	145.1	143.1	142.1	140.1	138.1
40°	136.1	133.1	131.1	130.1	129.1	128.1	126.1	125.1	125.1	124.1	122.1
42.5°	117.1	116.1	114.1	113.1	114.1	112.1	112.1	111.0	109.0	108.0	107.0
45°	103.0	101.0	101.0	100.0	100.0	99.0	98.0	97.0	96.0	94.0	94.0
47.5°	90.0	89.0	88.0	88.0	87.0	87.0	86.0	85.0	84.0	83.0	81.0
50°	79.0	78.0	77.0	77.0	76.0	76.0	75.0	74.0	73.0	71.0	69.0
52.5°	69.0	68.0	67.0	67.0	66.0	66.0	65.0	63.0	62.0	61.0	59.0
55°	60.0	59.0	58.0	58.0	57.0	57.0	56.0	54.0	52.0	51.0	49.0
57.5°	51.0	51.0	50.0	50.0	49.0	48.0	47.0	45.0	44.0	43.0	41.0
60°	44.0	43.0	43.0	42.0	42.0	41.0	39.0	38.0	36.0	35.0	33.0
62.5°	37.0	37.0	36.0	35.0	35.0	33.0	32.0	31.0	30.0	28.0	29.0
65°	31.0	30.0	30.0	29.0	29.0	27.0	26.0	25.0	24.0	24.0	25.0
67.5°	26.0	25.0	24.0	24.0	23.0	22.0	21.0	21.0	21.0	21.0	21.0
70°	21.0	20.0	19.0	19.0	19.0	18.0	17.0	17.0	17.0	18.0	18.0
72.5°	17.0	16.0	15.0	15.0	14.0	14.0	14.0	14.0	14.0	15.0	15.0
75°	13.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
77.5°	10.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
80°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
82.5°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
85°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
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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CATALOG NUMBER: PRS410D010-S4M12-41SWWMW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	395.2	395.2	395.2	395.2	395.2	395.2	395.2	395.2
2.5°	383.2	383.2	383.2	382.2	382.2	382.2	382.2	381.2
5°	369.2	369.2	368.2	368.2	367.2	367.2	367.2	366.2
7.5°	353.2	352.2	352.2	351.2	350.2	349.2	349.2	348.2
10°	336.2	334.2	332.1	333.1	331.1	331.1	329.1	329.1
12.5°	317.1	315.1	315.1	313.1	311.1	311.1	310.1	310.1
15°	297.1	295.1	294.1	293.1	292.1	291.1	291.1	290.1
17.5°	277.1	276.1	275.1	274.1	272.1	271.1	270.1	269.1
20°	258.1	255.1	254.1	254.1	251.1	251.1	249.1	249.1
22.5°	238.1	235.1	235.1	234.1	232.1	230.1	230.1	229.1
25°	219.1	217.1	215.1	214.1	213.1	211.1	211.1	210.1
27.5°	200.1	198.1	197.1	196.1	194.1	193.1	192.1	191.1
30°	183.1	180.1	179.1	178.1	176.1	175.1	174.1	174.1
32.5°	166.1	163.1	163.1	161.1	160.1	158.1	157.1	157.1
35°	150.1	148.1	146.1	145.1	143.1	143.1	141.1	141.1
37.5°	134.1	132.1	132.1	130.1	128.1	127.1	126.1	125.1
40°	120.1	117.1	117.1	115.1	113.1	112.1	111.0	111.0
42.5°	106.0	103.0	102.0	101.0	99.0	97.0	97.0	96.0
45°	92.0	90.0	89.0	88.0	86.0	84.0	84.0	83.0
47.5°	79.0	78.0	76.0	75.0	74.0	72.0	71.0	71.0
50°	68.0	67.0	65.0	64.0	62.0	60.0	59.0	58.0
52.5°	57.0	56.0	55.0	54.0	52.0	50.0	49.0	48.0
55°	48.0	47.0	45.0	45.0	43.0	42.0	41.0	40.0
57.5°	39.0	38.0	37.0	37.0	36.0	36.0	36.0	36.0
60°	32.0	33.0	33.0	33.0	33.0	33.0	33.0	32.0
62.5°	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
65°	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
67.5°	21.0	21.0	22.0	21.0	21.0	21.0	21.0	21.0
70°	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
72.5°	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
75°	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
77.5°	10.0	10.0	9.0	9.0	10.0	10.0	9.0	10.0
80°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
82.5°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
85°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
87.5°	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

(END OF REPORT)