

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: FAIL-SAFE

Report Number: P

Luminaire Tested: **4APN-28L930-X-UNV-NP**

Issue Date: 06/06/2024



**Test Information**

Test Method: LM-79-08  
Report Number: P  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 06/06/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 4APN-28L930-X-UNV-NP  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light w/ Nature Pattern Lens  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

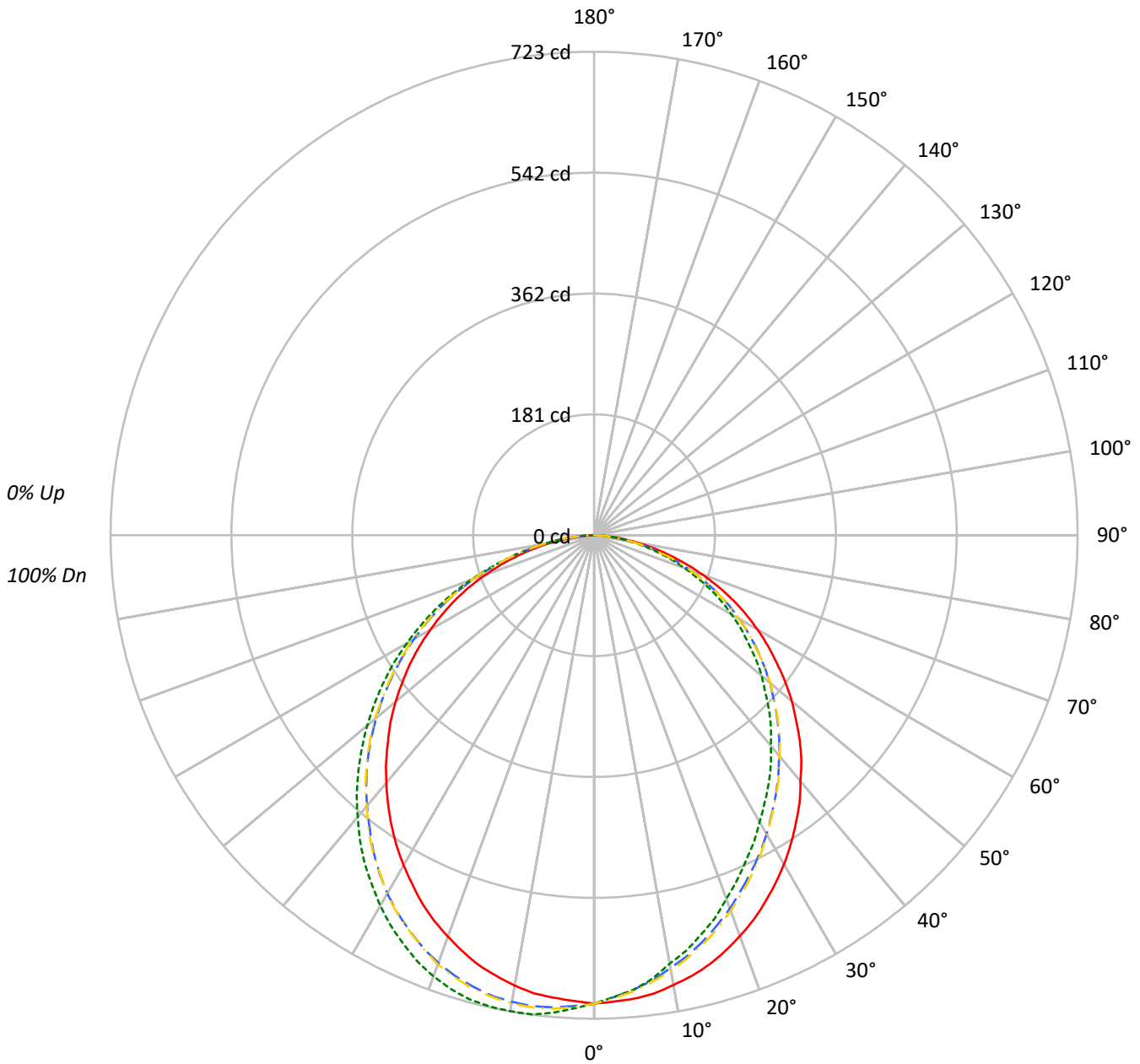
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1878.5 lumens  
Efficiency: N/A  
Efficacy: 58.3 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.33  
Luminous Opening: Rectangular (W 0.29' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 32.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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



— 0°-180°    - - 45°-225°    - · - 90°-270°    - - - 135°-315°



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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				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	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	109	104	100	96	106	102	98	95	98	94	92	94	91	89	90	88	86	86	86	86	84
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	76	72	72	72	72	70
3	90	80	72	65	88	78	71	65	75	69	64	73	67	62	70	65	61	61	61	61	59
4	83	71	62	55	81	70	61	55	67	60	54	65	59	54	63	57	53	53	53	53	51
5	76	63	54	48	74	62	54	48	60	53	47	58	52	47	56	51	46	46	46	46	44
6	70	57	48	42	68	56	48	42	54	47	41	53	46	41	51	45	41	41	41	41	38
7	65	52	43	37	64	51	43	37	49	42	37	48	41	36	47	41	36	36	36	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	33	43	37	32	32	32	32	30
9	57	43	35	30	55	43	35	30	42	35	30	41	34	29	40	34	29	29	29	29	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	27	27	27	25

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	6462	6462	6462	6462
5°	6442	6318	6428	6640
10°	6399	6094	6406	6770
15°	6350	5903	6358	6865
20°	6262	5679	6271	6892
25°	6163	5469	6186	6864
30°	6052	5276	6069	6812
35°	5926	5122	5953	6738
40°	5784	4952	5821	6623
45°	5676	4828	5686	6502
50°	5539	4696	5561	6357
55°	5366	4525	5405	6182
60°	5204	4386	5220	5966
65°	4999	4202	4999	5709
70°	4659	3890	4640	5322
75°	4235	3529	4181	4773
80°	3666	3034	3539	4086
85°	2848	2265	2689	3356



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	66.2	3.5
10°-20°	187.8	10.0
20°-30°	279.2	14.9
30°-40°	329.1	17.5
40°-50°	335.1	17.8
50°-60°	298.5	15.9
60°-70°	224.9	12.0
70°-80°	125.1	6.7
80°-90°	32.5	1.7
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
0°-30°	533.3	28.4
0°-40°	862.4	45.9
0°-60°	1496.0	79.6
0°-90°	1878.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1878.5	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	700	700	700	700	700	
5°	696	682	694	717	696	66
15°	665	618	666	719	665	187
25°	605	537	608	674	605	279
35°	526	455	528	598	526	329
45°	435	370	436	498	435	335
55°	334	281	336	384	334	299
65°	229	192	229	262	229	226
75°	119	99	117	134	119	126
85°	27	21	25	32	27	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	700.4	700.4	700.4	700.4	700.4	700.4	700.4	700.4	700.4	700.4	700.4
2.5°	698.0	698.0	698.9	695.6	691.7	690.1	689.4	688.5	690.1	690.9	690.1
5°	695.6	694.1	692.5	688.5	683.8	680.6	679.1	678.2	679.8	682.2	679.8
7.5°	690.9	687.7	684.6	679.1	673.5	668.7	666.3	664.8	666.3	668.7	667.2
10°	683.0	679.1	674.3	668.0	660.1	654.4	652.1	649.7	650.5	650.5	650.5
12.5°	675.1	669.6	664.0	656.1	647.3	641.0	637.0	633.9	635.4	636.3	636.3
15°	664.8	657.7	649.7	641.0	632.3	625.1	620.4	617.3	618.0	618.0	618.8
17.5°	652.1	644.2	636.3	625.9	615.6	607.7	602.2	598.2	599.8	600.6	601.4
20°	637.8	629.1	620.4	609.3	598.2	589.5	584.0	579.2	578.4	578.4	579.2
22.5°	622.8	613.3	603.0	591.1	579.2	569.7	564.2	559.4	558.6	558.6	559.4
25°	605.4	595.1	584.7	572.8	560.2	550.7	543.5	538.8	538.0	537.2	538.8
27.5°	587.1	576.8	566.6	554.7	541.2	531.6	524.5	519.7	518.2	517.4	519.0
30°	568.1	556.2	545.1	532.5	520.6	511.1	504.0	498.3	496.8	495.2	496.8
32.5°	547.5	535.6	523.7	511.1	499.2	489.7	482.6	477.0	475.4	474.6	476.2
35°	526.1	514.2	503.1	490.5	478.6	469.0	461.9	457.2	455.6	454.8	455.6
37.5°	504.7	492.8	481.7	469.0	457.2	447.6	440.5	435.8	435.0	434.2	435.0
40°	480.2	469.9	458.8	446.9	435.0	425.5	420.0	414.4	412.8	411.2	413.6
42.5°	458.8	448.5	437.4	426.2	414.4	404.9	398.6	393.8	392.2	391.4	392.2
45°	435.0	423.9	412.8	402.5	391.4	382.7	376.4	371.6	370.8	370.0	370.8
47.5°	409.6	400.1	390.7	380.3	369.3	360.5	355.0	350.2	348.6	347.0	348.6
50°	385.9	376.4	366.9	357.4	347.0	339.1	333.6	328.8	328.0	327.2	328.0
52.5°	360.5	351.0	342.2	332.7	324.1	316.2	310.6	306.7	305.8	305.1	305.8
55°	333.6	325.7	317.7	309.8	301.1	293.9	289.2	284.4	282.9	281.3	282.9
57.5°	308.2	301.1	293.2	285.3	277.3	271.0	266.2	262.3	261.5	260.6	261.5
60°	282.0	275.8	268.6	261.5	253.6	247.2	243.2	240.1	238.5	237.7	238.5
62.5°	255.9	249.6	244.1	237.0	229.8	225.1	221.1	217.9	216.3	215.5	216.3
65°	229.0	223.4	217.9	211.6	206.0	201.3	197.3	194.1	193.3	192.5	192.5
67.5°	201.3	196.5	191.8	186.2	179.9	175.1	171.1	168.7	168.0	167.2	168.0
70°	172.7	168.7	164.0	159.2	154.5	150.6	148.2	145.8	145.0	144.2	144.2
72.5°	145.8	142.6	138.7	134.7	130.7	126.8	124.4	122.8	122.0	121.2	121.2
75°	118.8	115.7	113.3	110.2	106.2	103.8	101.4	99.9	99.0	99.0	99.0
77.5°	93.5	91.1	88.7	85.6	83.2	80.9	79.2	78.5	77.6	77.6	77.6
80°	69.0	67.3	65.7	64.2	61.8	59.5	58.6	57.8	57.1	57.1	57.1
82.5°	46.7	45.9	44.3	42.8	41.2	40.4	39.6	38.8	38.8	38.8	38.8
85°	26.9	26.2	25.4	24.5	23.8	23.8	23.0	22.2	21.4	21.4	21.4
87.5°	11.1	11.1	11.1	10.3	9.5	9.5	9.5	9.5	9.5	9.5	9.5
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):**

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	700.4	700.4	700.4	700.4	700.4	700.4	700.4	700.4	700.4	700.4	700.4
2.5°	688.5	690.1	691.7	694.1	696.5	698.9	698.0	697.2	700.4	704.4	705.1
5°	678.2	679.8	682.2	686.2	690.1	693.3	694.1	694.1	700.4	706.0	707.5
7.5°	665.6	668.0	671.1	675.1	680.6	685.4	687.7	690.9	697.2	704.4	707.5
10°	649.7	653.7	658.4	664.0	669.6	675.1	679.8	683.8	691.7	699.6	704.4
12.5°	635.4	639.4	644.2	650.5	657.7	664.8	669.6	675.1	684.6	694.1	699.6
15°	619.6	623.5	629.1	635.4	643.4	651.3	658.4	665.6	675.1	685.4	691.7
17.5°	602.2	606.1	611.7	619.6	628.3	637.0	644.9	652.9	664.0	675.1	682.2
20°	580.8	586.3	593.5	601.4	611.7	622.0	629.9	638.7	650.5	662.4	670.3
22.5°	560.2	565.7	573.7	583.2	594.2	605.4	614.9	624.4	637.0	648.9	657.7
25°	540.4	546.7	554.7	564.2	574.4	585.6	596.6	607.7	620.4	633.0	641.8
27.5°	520.6	526.1	534.0	543.5	555.4	566.6	577.6	588.7	602.2	615.6	625.1
30°	498.3	504.7	511.9	521.4	534.0	546.7	557.8	569.7	583.2	596.6	606.1
32.5°	477.8	483.3	490.5	500.0	512.6	525.4	537.2	549.9	562.6	576.1	585.6
35°	457.2	462.8	469.9	479.3	492.1	504.7	516.6	528.5	541.2	553.8	563.3
37.5°	436.6	442.1	449.3	458.8	470.7	483.3	494.4	506.3	519.0	531.6	540.4
40°	415.2	420.7	426.2	435.8	447.6	460.4	471.4	483.3	496.0	508.7	517.4
42.5°	393.8	399.3	406.5	416.0	427.1	438.1	449.3	460.4	472.2	484.1	492.8
45°	372.4	377.2	384.3	393.0	404.1	414.4	425.5	435.8	447.6	458.8	467.5
47.5°	350.2	355.0	360.5	369.3	380.3	391.4	402.5	412.8	423.1	434.2	442.1
50°	328.8	333.6	339.9	347.9	358.1	368.4	377.9	387.4	397.8	408.1	415.2
52.5°	306.7	311.4	316.9	324.8	333.6	343.1	351.8	361.3	370.8	380.3	387.4
55°	284.4	287.7	292.4	299.5	309.1	318.6	327.2	336.0	344.6	352.6	359.8
57.5°	262.3	266.2	271.8	278.1	286.0	293.9	301.9	309.8	317.7	325.7	332.0
60°	240.1	243.2	247.2	252.7	260.6	267.8	275.8	282.9	290.0	297.2	302.7
62.5°	217.1	220.3	224.2	229.8	236.1	242.5	249.6	255.9	262.3	268.6	274.1
65°	193.3	196.5	200.4	205.2	210.8	216.3	222.7	229.0	233.7	238.5	244.1
67.5°	168.7	172.0	175.9	179.9	184.6	190.1	195.7	201.3	206.0	210.8	214.7
70°	145.0	147.3	151.3	154.5	158.5	162.5	167.2	172.0	175.1	179.1	183.8
72.5°	122.0	124.4	127.6	130.7	133.1	136.3	141.1	145.0	149.0	153.7	156.1
75°	99.9	101.4	103.8	106.2	108.5	110.9	114.1	117.3	120.4	122.8	125.9
77.5°	77.6	79.2	81.6	83.2	84.8	86.4	88.7	91.1	93.5	95.1	98.3
80°	57.1	58.6	60.2	61.8	63.3	65.0	65.7	66.6	69.7	72.1	73.7
82.5°	38.8	39.6	40.4	42.0	42.8	43.6	44.3	44.3	45.9	47.6	49.9
85°	22.2	23.0	23.8	23.8	23.8	23.8	24.5	25.4	26.2	27.8	29.3
87.5°	8.8	8.8	9.5	9.5	9.5	9.5	9.5	9.5	10.3	11.9	12.6
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):**

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	700.4	700.4	700.4	700.4	700.4	700.4	700.4	700.4	700.4	700.4	700.4
2.5°	704.4	705.1	706.8	707.5	708.4	708.4	709.1	709.9	708.4	706.8	706.0
5°	708.4	709.1	711.5	713.9	715.5	717.0	716.3	715.5	713.9	711.5	709.9
7.5°	709.1	711.5	713.9	717.0	719.4	722.6	721.0	719.4	716.3	713.1	710.8
10°	706.8	709.9	713.9	717.9	720.3	722.6	721.0	719.4	716.3	712.3	709.1
12.5°	703.6	707.5	712.3	716.3	718.7	721.8	719.4	717.0	713.1	709.1	705.1
15°	696.5	701.2	706.8	711.5	715.5	718.7	716.3	714.7	709.9	704.4	698.9
17.5°	687.7	694.1	699.6	705.1	708.4	711.5	709.9	708.4	702.8	696.5	690.1
20°	677.5	683.8	689.4	694.9	698.9	702.0	699.6	697.2	691.7	686.2	679.8
22.5°	664.8	671.1	677.5	683.0	687.0	690.1	687.0	683.0	677.5	671.9	665.6
25°	648.9	656.1	663.2	668.7	671.1	674.3	671.1	668.0	662.4	656.8	649.7
27.5°	633.0	640.2	647.3	652.9	655.3	658.4	655.3	652.1	646.5	641.0	633.9
30°	614.9	622.0	629.1	634.7	637.0	639.4	636.3	633.0	628.3	622.8	615.6
32.5°	594.2	601.4	607.0	612.5	615.6	618.8	615.6	613.3	607.7	600.6	593.5
35°	572.1	579.2	586.3	591.9	595.1	598.2	594.2	590.3	585.6	580.0	573.7
37.5°	547.5	555.4	563.3	569.7	572.1	575.2	572.1	568.1	563.3	557.8	550.7
40°	524.5	531.6	538.8	545.1	547.5	549.9	546.7	543.5	538.0	532.5	525.4
42.5°	500.7	507.9	514.2	519.7	522.1	525.4	522.1	518.2	514.2	509.5	503.1
45°	475.4	482.6	488.1	493.6	496.0	498.3	495.2	491.2	487.3	483.3	477.0
47.5°	449.3	455.6	461.2	466.7	468.3	470.7	467.5	465.1	461.2	457.2	451.6
50°	422.3	428.6	434.2	439.0	440.5	442.9	439.8	436.6	433.4	430.2	425.5
52.5°	394.6	400.1	405.7	410.5	412.0	413.6	410.5	407.2	404.1	400.9	396.2
55°	366.0	371.6	377.2	381.2	382.7	384.3	381.2	378.8	375.5	373.2	368.4
57.5°	337.5	343.1	347.9	351.8	353.4	355.0	351.8	348.6	346.2	343.9	339.9
60°	308.2	313.8	317.7	320.9	322.5	323.3	320.1	317.7	316.2	314.6	310.6
62.5°	279.7	283.7	287.7	290.0	291.5	292.4	290.0	288.4	286.8	285.3	282.0
65°	249.6	254.4	257.5	259.9	260.6	261.5	259.1	257.5	255.9	254.4	252.0
67.5°	219.4	223.4	225.8	228.2	229.0	229.0	229.0	228.2	226.6	224.2	221.8
70°	189.4	192.5	194.9	196.5	197.3	197.3	195.7	194.1	194.1	193.3	191.8
72.5°	158.5	160.9	162.5	164.0	164.0	164.0	164.0	164.8	164.0	162.5	160.1
75°	129.2	131.6	133.1	133.9	133.9	133.9	133.9	134.7	133.9	133.1	131.6
77.5°	101.4	103.0	103.8	104.6	104.6	104.6	105.4	106.2	105.4	104.6	103.8
80°	75.2	76.1	76.9	77.6	76.9	76.9	77.6	79.2	78.5	77.6	76.9
82.5°	51.5	52.3	53.1	53.1	53.8	54.7	54.7	54.7	54.7	53.8	53.1
85°	30.9	31.7	31.7	31.7	31.7	31.7	32.5	33.3	33.3	32.5	32.5
87.5°	14.3	15.0	14.3	13.5	12.6	12.6	14.3	15.9	15.9	15.0	15.0
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):**

	330°	340°	350°	360°
0°	700.4	700.4	700.4	700.4
2.5°	706.8	706.0	702.0	698.0
5°	709.1	706.8	701.2	695.6
7.5°	709.1	706.0	698.0	690.9
10°	705.1	700.4	691.7	683.0
12.5°	700.4	694.9	684.6	675.1
15°	693.3	687.0	675.8	664.8
17.5°	683.0	675.1	664.0	652.1
20°	672.7	664.0	650.5	637.8
22.5°	658.4	650.5	636.3	622.8
25°	642.6	633.9	619.6	605.4
27.5°	625.9	615.6	601.4	587.1
30°	607.0	596.6	582.3	568.1
32.5°	586.3	576.8	562.6	547.5
35°	565.7	555.4	541.2	526.1
37.5°	542.8	533.3	519.0	504.7
40°	518.2	508.7	494.4	480.2
42.5°	495.2	486.5	472.2	458.8
45°	469.9	461.2	447.6	435.0
47.5°	443.7	435.0	422.3	409.6
50°	418.3	409.6	397.8	385.9
52.5°	389.8	382.7	371.6	360.5
55°	362.1	355.0	343.9	333.6
57.5°	334.4	328.0	317.7	308.2
60°	305.1	298.7	290.8	282.0
62.5°	277.3	271.8	263.9	255.9
65°	248.0	243.2	236.1	229.0
67.5°	217.9	213.9	207.6	201.3
70°	187.8	183.0	178.3	172.7
72.5°	157.7	155.3	150.6	145.8
75°	129.2	126.8	122.8	118.8
77.5°	102.2	99.9	96.6	93.5
80°	75.2	73.7	71.3	69.0
82.5°	52.3	50.7	49.1	46.7
85°	31.7	30.1	28.5	26.9
87.5°	14.3	13.5	11.9	11.1
90°	0.0	0.0	0.0	0.0

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