

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: P838163

Luminaire Tested: **ORLG-24-4-INS-ASY2R-LD4-1LO-27-120-EDD-90**

Issue Date: 5/21/2024

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

**Test Information**

Test Method: LM-79-08
Report Number: P838163
Test Lab: INNOVATION CENTER(G2)
Issue Date: 5/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: ORLG-24-4-INS-ASY2R-LD4-1LO-27-120-EDD-90
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

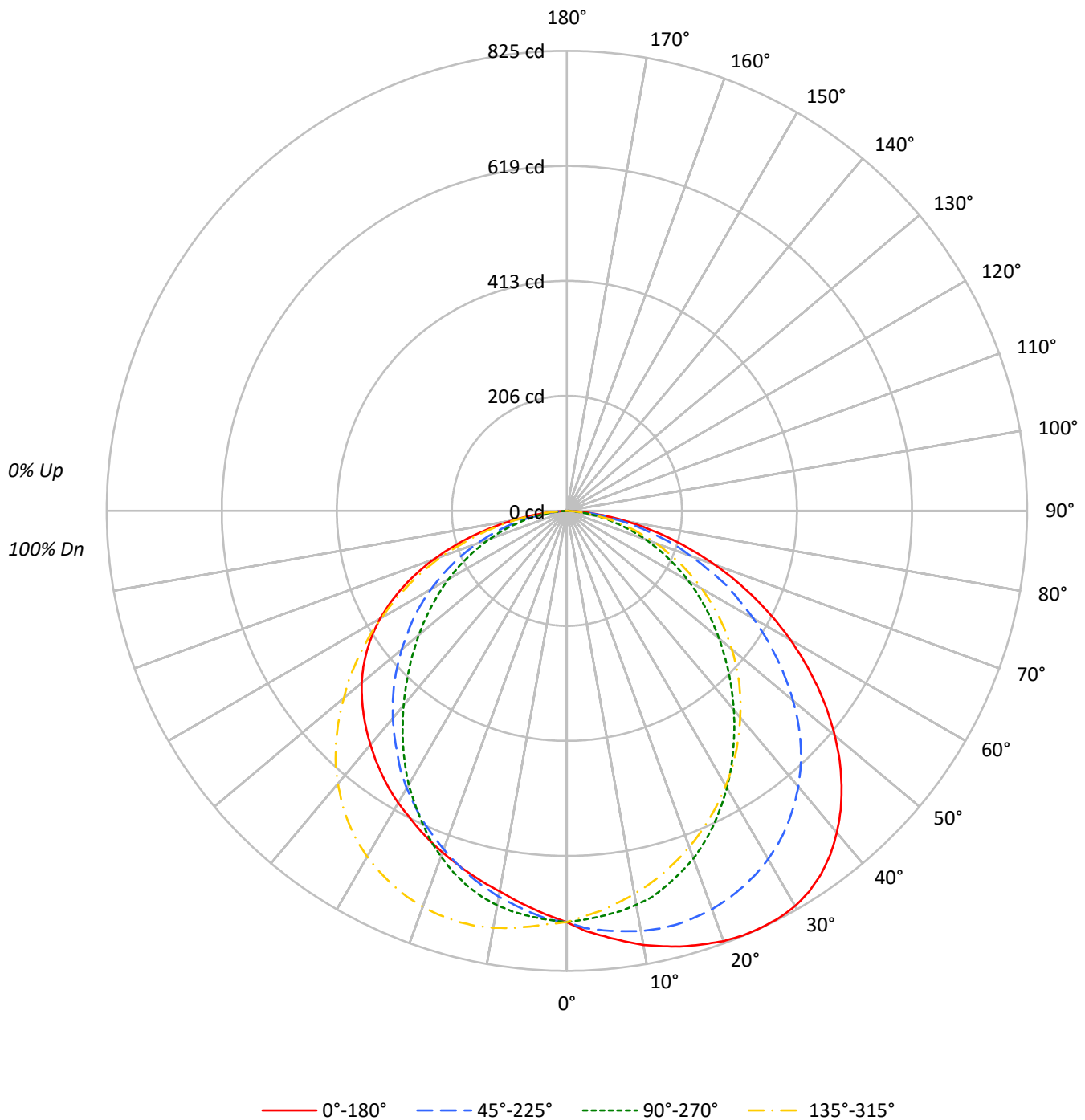
Lumens per Lamp: N/A
Luminaire Lumens: 2163.5 lumens
Efficiency: N/A
Efficacy: 92.5 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 23.4
Input Voltage (V): 120
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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	109	104	100	96	106	102	98	94	97	94	91		94	91	89		90
2	99	91	84	78	96	89	82	77	85	80	75		82	77	73		79
3	90	79	71	65	88	78	70	64	75	68	63		72	66	62		69
4	82	70	61	55	80	69	61	54	66	59	53		64	58	53		62
5	76	63	54	47	74	62	53	47	59	52	46		57	51	46		56
6	70	56	47	41	68	55	47	41	54	46	40		52	45	40		50
7	65	51	42	36	63	50	42	36	49	41	36		47	40	35		46
8	60	47	38	32	59	46	38	32	45	37	32		43	37	32		42
9	56	43	34	29	55	42	34	29	41	34	29		40	33	28		39
10	53	39	31	26	51	39	31	26	38	31	26		37	30	26		36

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	992	992	992	992
5°	1034	985	967	987
10°	1080	980	947	981
15°	1126	968	938	968
20°	1176	950	933	945
25°	1224	923	933	914
30°	1271	891	940	881
35°	1305	855	949	841
40°	1323	818	962	800
45°	1325	781	981	761
50°	1313	745	1005	725
55°	1285	712	1027	692
60°	1245	677	1041	660
65°	1189	637	1036	623
70°	1111	591	999	580
75°	1000	527	917	524
80°	848	441	770	448
85°	590	292	489	299



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.0	3.2
10°-20°	202.7	9.4
20°-30°	310.7	14.4
30°-40°	377.8	17.5
40°-50°	392.8	18.2
50°-60°	354.8	16.4
60°-70°	269.7	12.5
70°-80°	150.4	6.9
80°-90°	34.6	1.6
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°	583.5	27.0
0°-40°	961.3	44.4
0°-60°	1708.8	79.0
0°-90°	2163.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2163.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	737	737	737	737	737	
5°	766	729	716	730	766	74
15°	809	695	673	695	809	229
25°	825	622	629	616	825	381
35°	795	520	578	512	795	496
45°	696	410	516	400	696	536
55°	548	303	438	295	548	489
65°	374	200	325	196	374	369
75°	192	101	176	101	192	204
85°	38	19	32	19	38	48
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	737.4	737.4	737.4	737.4	737.4	737.4	737.4	737.4	737.4	737.4	737.4
2.5°	753.8	742.8	742.9	752.6	745.2	748.8	738.5	742.4	741.2	742.1	733.6
5°	765.6	753.8	753.6	761.9	753.6	755.1	742.1	744.7	740.9	738.5	729.3
7.5°	778.2	766.3	765.1	772.3	761.5	760.3	745.9	745.9	739.0	733.0	724.4
10°	790.6	778.4	776.8	782.3	768.9	764.9	747.4	744.7	735.5	726.6	717.3
12.5°	799.9	787.5	786.3	789.7	774.6	767.4	747.4	742.1	728.7	716.1	708.9
15°	808.6	795.9	792.6	794.4	777.0	767.4	745.0	736.7	719.5	703.0	694.6
17.5°	814.8	802.6	799.4	799.2	778.2	764.4	739.8	728.5	707.8	687.9	679.5
20°	821.0	808.8	804.7	801.6	777.9	760.5	732.3	717.0	692.9	670.5	663.5
22.5°	824.1	811.6	807.1	802.4	775.6	753.3	723.0	703.5	676.0	649.4	643.5
25°	824.6	811.7	806.9	800.2	771.1	744.7	710.9	687.4	656.6	627.0	622.0
27.5°	823.3	809.2	804.3	796.3	764.4	734.2	696.7	669.0	635.9	603.3	597.9
30°	818.4	804.2	799.5	789.0	755.0	721.3	681.0	648.5	613.1	578.3	573.7
32.5°	808.8	794.9	791.1	780.6	744.7	706.3	662.8	626.5	587.8	554.6	547.7
35°	794.7	780.8	778.4	767.4	730.2	688.4	642.8	602.4	560.9	527.1	520.3
37.5°	776.3	764.6	761.0	750.2	713.2	668.1	619.9	576.2	533.6	497.1	493.0
40°	753.1	742.1	739.3	729.7	693.4	645.6	595.2	549.2	505.4	471.5	465.6
42.5°	726.6	716.3	714.7	704.7	669.0	620.6	568.3	521.2	476.0	443.3	437.4
45°	696.5	686.5	686.2	676.7	642.3	592.9	540.1	492.8	447.2	413.4	410.3
47.5°	663.3	654.3	654.3	645.6	612.5	562.5	511.1	463.2	418.3	388.4	382.9
50°	627.2	618.7	616.2	611.9	579.7	529.3	480.4	434.3	389.8	361.2	355.9
52.5°	588.6	581.4	583.1	575.2	544.1	494.7	449.5	401.8	361.1	335.1	329.8
55°	548.0	537.7	539.3	536.3	506.9	459.1	414.7	375.0	332.8	308.4	303.4
57.5°	505.9	492.5	498.0	496.3	467.4	422.6	382.9	344.5	304.8	282.3	277.5
60°	462.7	449.8	455.5	453.9	426.8	386.2	350.0	314.4	276.9	256.5	251.7
62.5°	418.3	406.5	411.6	410.4	385.5	348.8	317.4	284.7	248.9	230.5	226.0
65°	373.6	362.3	366.9	366.0	343.0	315.1	283.8	253.9	220.7	204.7	200.2
67.5°	327.9	317.4	321.7	321.7	300.5	273.8	250.1	222.8	193.0	179.2	175.1
70°	282.4	272.6	276.4	276.1	258.2	236.5	216.1	191.6	165.0	153.6	150.2
72.5°	236.7	228.1	231.5	231.2	216.2	202.3	182.0	160.8	137.6	128.5	125.4
75°	192.3	184.2	187.5	187.2	174.9	161.9	148.3	130.7	110.8	104.4	101.3
77.5°	150.0	141.7	144.5	144.5	135.5	126.1	115.2	101.7	87.6	80.7	78.4
80°	109.4	105.4	104.1	104.2	98.2	92.0	86.5	73.5	63.1	58.5	56.9
82.5°	71.9	68.6	67.3	67.6	64.2	60.4	56.9	47.8	40.9	38.2	37.3
85°	38.2	35.8	34.6	35.4	34.7	32.7	31.0	24.8	20.5	19.4	18.9
87.5°	12.0	10.5	9.6	12.7	10.8	9.6	9.3	7.4	5.7	5.7	5.5
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	737.4	737.4	737.4	737.4	737.4	737.4	737.4	737.4	737.4	737.4	737.4
2.5°	736.4	736.4	729.7	728.1	727.5	728.3	721.6	720.4	730.0	726.8	719.4
5°	730.5	730.2	720.7	719.0	719.0	718.0	710.4	708.7	718.3	715.6	707.5
7.5°	723.3	722.3	711.1	709.9	708.2	707.5	699.1	697.9	706.1	704.4	696.8
10°	714.5	713.5	700.3	699.4	697.5	696.1	688.2	687.4	695.8	693.0	687.0
12.5°	703.0	701.1	687.5	686.7	685.1	684.6	676.9	676.5	685.8	683.1	676.7
15°	687.9	686.3	671.2	671.5	671.7	671.7	665.5	665.2	674.3	673.1	666.2
17.5°	671.2	669.1	654.7	655.7	656.9	658.3	653.5	654.3	664.0	662.4	656.2
20°	652.3	650.2	636.1	639.0	641.6	644.4	641.3	643.7	652.6	651.9	647.3
22.5°	631.1	629.1	616.0	620.5	624.8	629.9	628.5	631.3	640.8	640.6	636.5
25°	605.3	605.8	594.3	599.8	607.0	614.3	614.8	619.3	629.7	628.7	624.9
27.5°	581.2	581.9	569.7	579.0	588.6	597.9	600.2	606.4	617.0	616.2	612.9
30°	556.0	556.8	544.9	557.7	569.4	580.7	585.5	594.0	604.8	604.8	601.4
32.5°	529.6	531.2	518.8	535.8	549.4	562.7	571.1	579.9	592.2	591.9	589.0
35°	502.6	504.3	493.0	514.7	528.3	544.4	554.9	566.6	577.6	577.8	575.6
37.5°	475.1	477.2	466.8	490.6	506.1	525.2	538.6	550.3	562.5	563.2	561.1
40°	447.8	450.0	441.0	463.9	483.5	504.9	520.3	534.1	547.5	547.9	546.5
42.5°	420.4	422.8	416.1	438.5	460.7	483.5	501.8	517.4	531.2	532.0	530.5
45°	393.7	395.8	391.0	415.4	436.7	461.7	482.7	500.4	514.3	515.5	515.0
47.5°	367.3	369.1	364.8	387.2	411.8	438.3	462.5	482.2	497.0	498.3	498.0
50°	341.3	342.8	338.2	361.6	386.0	414.2	439.5	462.2	478.7	480.1	479.9
52.5°	315.5	317.0	313.1	337.7	359.9	389.6	417.1	441.7	458.1	460.1	460.5
55°	290.5	291.2	288.1	311.7	333.2	364.3	396.0	419.9	436.2	437.9	439.0
57.5°	265.6	265.8	263.2	285.7	306.4	338.2	371.4	396.5	412.0	413.7	415.2
60°	240.8	240.6	237.7	259.6	279.4	310.8	345.4	370.3	385.3	386.9	388.9
62.5°	216.2	215.7	213.1	233.3	251.8	283.0	317.7	341.8	356.1	357.1	359.9
65°	191.8	191.3	188.9	207.4	224.3	254.1	288.1	311.0	323.9	325.3	324.8
67.5°	167.7	166.7	164.8	181.5	196.8	224.3	257.0	278.8	289.5	290.7	294.0
70°	143.6	142.4	138.1	155.8	169.3	193.9	224.3	243.7	252.7	253.9	253.4
72.5°	119.9	118.7	114.0	130.4	141.7	163.2	190.4	206.6	214.3	215.4	215.4
75°	96.8	96.2	93.2	105.6	115.1	132.6	155.7	169.1	175.1	176.3	176.0
77.5°	74.7	74.1	71.2	81.9	89.3	102.3	120.9	131.4	135.9	137.3	140.2
80°	53.5	53.3	48.7	59.2	62.4	73.5	87.0	95.1	97.5	99.4	101.5
82.5°	34.2	34.4	29.8	38.7	40.1	47.1	55.6	60.5	62.3	63.8	65.4
85°	16.7	17.4	14.8	20.5	20.6	24.3	27.9	29.8	30.4	31.7	33.0
87.5°	4.3	5.0	2.8	5.8	5.2	6.7	7.7	8.3	8.1	8.9	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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	737.4	737.4	737.4	737.4	737.4	737.4	737.4	737.4	737.4	737.4	737.4
2.5°	721.8	727.3	724.5	733.5	736.9	731.4	741.0	741.2	734.3	742.4	746.9
5°	710.6	716.3	714.5	723.8	728.1	723.3	735.0	737.3	730.5	739.7	746.9
7.5°	699.2	705.9	703.7	713.2	718.3	714.5	727.1	730.7	725.6	735.5	745.2
10°	689.4	695.1	692.7	702.7	707.2	704.1	716.4	723.1	718.3	730.5	742.1
12.5°	679.8	684.4	681.7	690.0	694.3	690.3	705.4	711.6	708.2	720.9	735.7
15°	667.4	672.6	668.8	676.2	679.5	676.0	688.4	699.1	694.8	708.7	725.0
17.5°	658.0	660.9	655.7	661.6	663.5	658.8	671.4	681.9	678.8	693.9	712.8
20°	647.5	649.9	642.6	645.9	645.7	639.9	651.4	661.7	659.7	676.4	697.9
22.5°	635.8	637.0	628.5	629.2	628.9	619.3	629.6	640.1	639.2	656.1	680.1
25°	623.4	623.6	612.7	612.4	608.6	597.2	606.4	618.2	615.6	633.9	659.2
27.5°	611.2	609.4	596.4	593.3	587.3	573.7	581.8	592.4	590.9	608.8	636.8
30°	598.1	595.9	579.9	574.2	565.4	549.8	556.5	566.4	567.3	583.0	612.4
32.5°	585.7	580.0	562.3	554.1	543.1	524.8	528.4	538.6	540.0	555.8	586.1
35°	569.7	565.9	544.1	530.0	519.1	499.2	503.0	510.0	512.1	527.6	558.4
37.5°	554.6	548.6	525.3	508.1	494.2	473.2	474.2	481.5	483.5	499.2	529.6
40°	538.9	530.3	505.4	485.3	469.3	447.2	446.0	453.6	455.2	470.5	498.0
42.5°	522.2	511.9	483.9	461.9	443.5	421.1	418.7	425.2	426.9	441.9	468.9
45°	505.4	493.0	461.9	437.8	417.7	394.8	392.4	397.4	399.9	414.0	440.0
47.5°	487.5	473.0	439.2	412.3	391.5	368.6	365.7	370.7	372.8	386.7	411.3
50°	468.7	451.2	415.8	386.2	365.5	343.0	338.7	344.5	346.4	359.5	383.6
52.5°	448.1	428.7	390.8	359.9	339.2	317.7	312.6	318.2	320.5	333.2	355.4
55°	426.3	405.3	365.7	335.6	313.2	292.3	288.0	290.2	295.0	307.0	327.7
57.5°	401.7	380.8	339.2	308.6	287.1	267.0	263.4	265.4	269.9	281.6	300.2
60°	375.5	353.5	312.2	281.6	260.8	241.7	238.4	240.3	245.1	255.8	273.0
62.5°	349.7	324.9	284.3	253.9	235.0	217.3	216.4	215.7	220.2	230.5	245.6
65°	318.4	294.7	255.3	226.4	209.2	193.2	189.7	191.3	195.6	205.0	220.9
67.5°	284.9	263.4	225.5	198.8	183.5	169.3	166.3	167.0	171.5	179.8	193.5
70°	249.2	230.3	195.1	171.2	158.3	144.8	142.9	143.1	147.4	154.6	166.7
72.5°	211.9	194.9	164.3	143.8	133.1	123.5	121.8	119.7	123.7	129.9	140.2
75°	173.9	158.9	133.7	117.0	108.5	100.5	98.9	96.8	100.8	106.1	114.2
77.5°	135.5	123.5	103.9	91.0	84.5	78.4	77.1	74.8	78.8	82.7	89.1
80°	98.0	89.3	77.6	64.0	61.8	57.8	56.4	54.0	57.8	60.4	65.2
82.5°	63.3	57.5	50.7	41.3	40.9	38.0	37.3	34.6	38.0	39.6	43.2
85°	32.0	29.2	27.5	21.0	21.7	19.8	19.6	16.7	19.4	20.1	22.2
87.5°	9.1	9.6	8.6	5.2	6.5	6.2	6.2	4.5	6.2	6.2	7.1
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):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	737.4	737.4	737.4	737.4	737.4	737.4	737.4	737.4
2.5°	738.1	741.0	741.7	741.6	743.4	753.8	750.3	753.8
5°	739.8	746.4	748.1	750.5	753.6	765.3	761.5	765.6
7.5°	740.9	750.7	754.5	759.1	764.1	777.2	774.1	778.2
10°	740.9	753.6	759.1	766.8	773.6	788.7	785.8	790.6
12.5°	737.8	754.1	761.9	772.7	781.3	797.6	796.4	799.9
15°	731.4	751.5	762.2	776.1	786.8	805.0	804.5	808.6
17.5°	722.8	747.1	760.0	777.5	790.9	811.4	812.6	814.8
20°	712.0	738.6	755.5	777.0	793.8	816.4	817.9	821.0
22.5°	697.7	728.5	748.8	774.8	794.2	818.4	821.2	824.1
25°	680.8	716.3	740.0	770.5	792.5	818.3	822.1	824.6
27.5°	661.6	700.4	728.8	763.6	787.7	815.5	820.2	823.3
30°	639.2	683.6	716.1	754.6	781.1	810.4	815.3	818.4
32.5°	616.2	665.0	701.0	743.1	771.7	802.1	806.4	808.8
35°	591.0	642.5	682.7	728.3	759.4	788.9	792.1	794.7
37.5°	563.7	618.0	661.9	711.6	742.2	770.5	773.4	776.3
40°	535.5	592.4	638.5	691.2	721.8	747.9	751.0	753.1
42.5°	507.1	564.0	613.6	667.1	697.5	722.6	724.5	726.6
45°	478.4	534.6	585.5	640.4	670.5	694.1	694.8	696.5
47.5°	449.1	504.2	554.7	610.0	639.7	661.2	661.9	663.3
50°	419.7	473.7	521.9	577.1	606.2	628.9	625.8	627.2
52.5°	390.8	441.7	490.9	541.7	570.4	590.5	591.4	588.6
55°	362.4	410.4	455.7	504.5	531.9	547.5	547.0	548.0
57.5°	333.7	378.8	420.2	465.0	491.6	506.4	509.5	505.9
60°	304.5	346.8	383.9	424.4	450.2	462.5	466.2	462.7
62.5°	275.4	314.3	348.0	383.2	407.2	422.5	422.1	418.3
65°	246.3	281.6	311.7	341.6	362.4	377.7	377.1	373.6
67.5°	219.5	248.6	275.6	299.8	317.9	328.4	332.0	327.9
70°	189.9	215.0	238.8	258.2	273.2	282.6	286.1	282.4
72.5°	160.3	181.6	198.3	217.1	228.6	236.5	240.1	236.7
75°	131.1	148.6	162.2	176.8	184.9	191.6	195.8	192.3
77.5°	102.7	116.3	127.1	137.8	147.1	148.6	152.2	150.0
80°	75.7	85.5	93.4	100.5	107.2	107.9	110.8	109.4
82.5°	50.4	56.9	59.0	66.4	70.7	70.0	72.9	71.9
85°	26.7	30.6	34.2	36.5	38.9	36.6	39.2	38.2
87.5°	8.9	9.5	8.3	11.7	12.9	11.0	12.6	12.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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