

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: NEO-RAY

Report Number: P331475-840

Luminaire Tested: **S122DIW-S290D710U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331475-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DIW-S290D710U840-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 710 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4079.4 lumens
Efficiency: N/A
Efficacy: 134.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Indirect

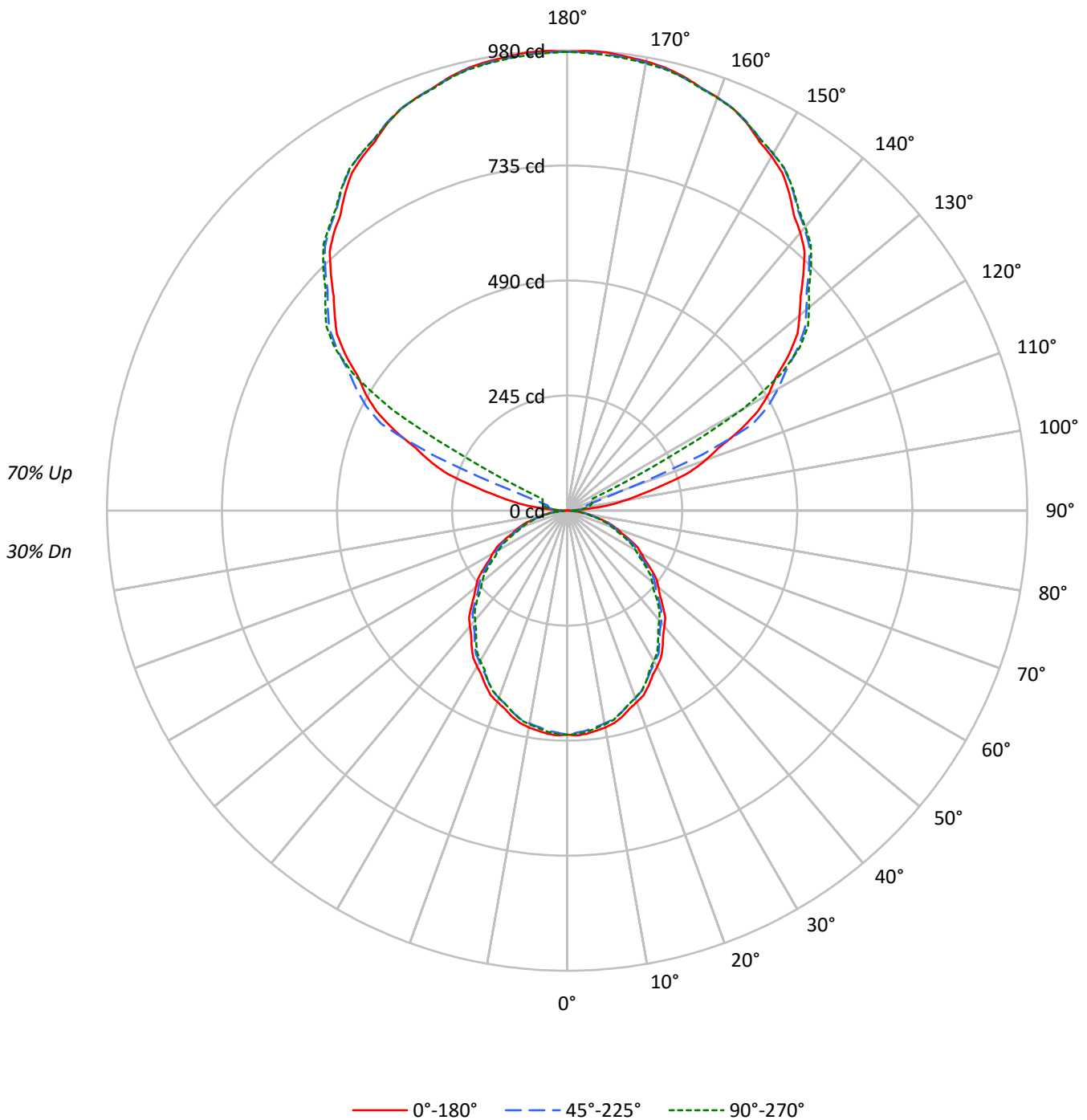
Input Watts (W): 30.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38	30					30														
1	93	89	85	82	83	80	77	74	63	61	59	47	46	45	33	32	32	25					25														
2	85	78	72	67	76	70	65	61	55	52	49	42	39	37	29	28	27	21					21														
3	77	68	61	56	69	61	55	51	49	44	41	37	34	32	26	24	23	18					18														
4	71	60	53	47	63	54	48	43	43	38	35	33	30	27	23	21	20	15					15														
5	65	54	46	40	58	48	42	37	39	34	30	29	26	23	21	19	17	13					13														
6	60	48	40	34	53	43	37	32	35	30	26	26	23	20	19	17	15	12					12														
7	55	43	35	30	49	39	32	28	31	26	23	24	21	18	17	15	13	10					10														
8	51	39	32	26	46	35	29	24	28	24	20	22	18	16	16	13	12	9					9														
9	47	36	28	23	42	32	26	22	26	21	18	20	17	14	15	12	11	8					8														
10	44	32	25	21	40	29	23	19	24	19	16	18	15	13	13	11	10	8					8														

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7703	7703	7703
5°	7733	7621	7666
10°	7688	7543	7581
15°	7590	7447	7438
20°	7455	7301	7290
25°	7322	7119	7119
30°	7150	6952	6893
35°	6991	6753	6654
40°	6787	6555	6431
45°	6588	6357	6202
50°	6373	6154	5935
55°	6145	5917	5695
60°	5896	5628	5422
65°	5624	5349	5100
70°	5282	4999	4763
75°	4810	4604	4492
80°	4258	4138	3924
85°	3483	3316	2983



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.9	1.1
10°-20°	126.2	3.1
20°-30°	185.5	4.5
30°-40°	215.5	5.3
40°-50°	215.3	5.3
50°-60°	187.7	4.6
60°-70°	138.8	3.4
70°-80°	78.6	1.9
80°-90°	23.6	0.6
90°-100°	32.6	0.8
100°-110°	119.5	2.9
110°-120°	319.5	7.8
120°-130°	527.3	12.9
130°-140°	560.8	13.7
140°-150°	521.3	12.8
150°-160°	419.1	10.3
160°-170°	270.1	6.6
170°-180°	93.0	2.3
0°-30°	356.6	8.7
0°-40°	572.2	14.0
0°-60°	975.2	23.9
0°-90°	1216.2	29.8
90°-120°	471.6	11.6
90°-150°	2081.0	51.0
90°-180°	2863.0	70.2
0°-180°	4079.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	477	477	477	477	477	
5°	477	475	470	474	473	45
15°	454	451	446	447	445	128
25°	411	407	400	400	400	189
35°	355	350	343	340	338	221
45°	288	285	278	274	272	223
55°	218	215	210	205	202	195
65°	147	144	140	136	134	146
75°	77	76	74	71	72	82
85°	19	18	18	17	16	22
90°	1	8	14	18	19	3
95°	46	24	28	31	30	56
105°	215	224	43	51	54	230
115°	406	419	436	124	58	400
125°	575	584	597	602	604	512
135°	711	722	729	736	735	549
145°	825	825	836	841	838	516
155°	908	903	911	914	909	418
165°	957	953	955	960	955	270
175°	979	974	976	980	974	93
180°	977	977	977	977	977	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1
2.5°	479.3	478.9	478.5	478.1	477.7	477.1	476.2	475.2	474.3	473.4	474.2
5°	477.1	476.7	476.3	475.8	475.4	474.7	473.6	472.5	471.3	470.2	471.0
7.5°	472.9	472.2	471.6	471.0	470.4	469.5	468.4	467.2	466.1	464.9	465.7
10°	468.9	468.2	467.5	466.8	466.0	465.0	463.8	462.6	461.4	460.1	460.9
12.5°	463.3	462.7	462.1	461.4	460.8	459.9	458.7	457.5	456.3	455.0	455.6
15°	454.1	453.5	452.9	452.3	451.7	450.8	449.4	448.1	446.8	445.5	445.9
17.5°	442.4	441.8	441.2	440.6	440.0	439.0	437.7	436.3	434.9	433.6	434.0
20°	433.9	433.3	432.7	432.1	431.5	430.5	429.1	427.7	426.3	424.9	425.2
22.5°	425.6	424.6	423.8	422.9	422.1	421.0	419.7	418.3	417.0	415.7	415.7
25°	411.0	410.2	409.4	408.6	407.8	406.5	404.8	403.0	401.3	399.6	399.8
27.5°	394.6	393.8	393.0	392.3	391.6	390.5	389.2	387.8	386.5	385.1	384.8
30°	383.5	382.7	381.9	381.1	380.2	379.1	377.6	376.1	374.5	372.9	372.6
32.5°	371.7	371.1	370.5	369.8	369.2	368.0	366.4	364.9	363.2	361.6	361.0
35°	354.7	353.6	352.5	351.5	350.5	349.2	347.6	346.0	344.4	342.6	342.0
37.5°	335.3	334.4	333.5	332.5	331.6	330.4	328.8	327.2	325.5	323.9	323.2
40°	322.0	321.2	320.4	319.6	318.8	317.6	315.9	314.3	312.7	311.0	310.1
42.5°	309.2	308.4	307.6	306.8	306.0	304.7	303.1	301.4	299.8	298.2	297.2
45°	288.5	287.8	287.1	286.4	285.7	284.6	283.1	281.6	280.0	278.4	277.3
47.5°	268.0	267.3	266.7	266.0	265.3	264.2	262.6	261.1	259.4	257.8	256.6
50°	253.7	253.2	252.7	252.2	251.7	250.6	249.2	247.8	246.4	245.0	243.6
52.5°	239.7	239.0	238.4	237.7	237.0	236.0	234.7	233.4	232.0	230.7	229.4
55°	218.3	217.7	217.1	216.5	215.9	215.0	213.8	212.6	211.4	210.2	208.8
57.5°	196.9	196.4	195.9	195.4	194.9	194.0	192.7	191.4	190.0	188.6	187.4
60°	182.6	182.2	181.8	181.4	181.0	180.1	178.6	177.2	175.7	174.3	173.2
62.5°	168.6	167.9	167.3	166.7	166.0	165.1	164.0	163.0	161.9	160.8	159.7
65°	147.2	146.6	146.0	145.4	144.8	144.0	143.0	142.0	141.0	140.0	139.0
67.5°	125.5	125.0	124.5	124.0	123.6	122.9	121.9	121.0	120.1	119.2	118.5
70°	111.9	111.5	111.1	110.7	110.3	109.7	108.8	107.9	106.8	105.9	105.2
72.5°	98.0	97.6	97.1	96.7	96.3	95.8	95.2	94.7	94.1	93.5	92.8
75°	77.1	76.9	76.6	76.4	76.2	75.9	75.4	74.8	74.3	73.8	73.2
77.5°	58.4	58.0	57.7	57.4	57.0	56.7	56.5	56.2	56.0	55.8	55.5
80°	45.8	45.7	45.6	45.5	45.4	45.3	45.1	44.9	44.7	44.5	44.2
82.5°	34.1	34.1	34.1	34.0	34.0	33.9	33.8	33.7	33.6	33.5	33.1
85°	18.8	18.7	18.6	18.5	18.4	18.3	18.2	18.1	18.0	17.9	17.6
87.5°	6.8	7.0	7.1	7.3	7.5	7.6	7.7	7.8	7.9	8.0	7.9
90°	0.7	2.4	4.1	5.9	7.6	9.1	10.4	11.6	12.9	14.1	14.9
92.5°	14.2	14.1	13.9	13.8	13.6	13.9	14.5	15.1	15.8	16.4	16.8
95°	45.9	40.8	35.5	30.4	25.2	23.1	24.2	25.3	26.5	27.6	28.4
97.5°	91.2	76.5	62.0	47.4	32.7	26.8	29.3	31.8	34.3	36.9	37.6
100°	125.1	103.6	82.1	60.6	39.1	29.6	32.3	34.9	37.7	40.3	41.5
102.5°	162.5	157.9	153.3	148.8	144.2	130.8	108.5	86.1	63.7	41.4	43.0
105°	214.9	219.6	224.4	229.0	233.8	214.7	171.8	128.9	86.0	43.1	44.8
107.5°	274.7	278.5	282.4	286.1	289.9	266.1	214.7	163.3	111.8	60.4	58.6
110°	313.2	316.5	319.8	323.1	326.4	305.3	259.9	214.5	169.2	123.7	108.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	349.4	352.3	355.3	358.1	361.0	356.9	345.7	334.5	323.3	312.0	254.8
115°	406.5	409.2	411.8	414.5	417.2	420.5	424.4	428.4	432.2	436.2	363.5
117.5°	457.6	460.5	463.5	466.5	469.5	472.3	475.0	477.8	480.4	483.1	465.5
120°	494.8	497.3	499.6	501.9	504.3	506.9	509.7	512.5	515.3	518.2	520.1
122.5°	526.5	529.1	531.5	534.0	536.4	539.3	542.3	545.4	548.5	551.6	552.7
125°	574.7	576.8	578.9	580.9	582.9	585.4	588.4	591.4	594.4	597.3	598.4
127.5°	618.4	620.7	623.0	625.2	627.5	629.8	632.0	634.2	636.4	638.6	640.3
130°	646.1	648.6	651.2	653.7	656.2	658.3	660.0	661.8	663.5	665.3	667.0
132.5°	674.5	676.6	678.7	680.9	683.0	684.9	686.6	688.3	690.1	691.9	693.3
135°	711.2	713.7	716.2	718.7	721.2	723.3	724.7	726.1	727.5	728.9	730.4
137.5°	748.4	750.1	751.9	753.7	755.4	757.1	758.7	760.3	761.9	763.6	765.1
140°	772.7	774.0	775.2	776.5	777.7	779.2	780.9	782.6	784.4	786.2	787.6
142.5°	793.0	794.2	795.4	796.5	797.6	799.1	801.1	803.1	805.1	807.1	808.4
145°	825.1	824.9	824.8	824.6	824.4	825.7	828.3	831.0	833.6	836.4	837.5
147.5°	852.8	852.3	851.7	851.1	850.5	851.5	854.1	856.8	859.4	862.0	862.9
150°	871.0	869.9	868.8	867.7	866.6	867.3	869.8	872.3	874.8	877.4	878.3
152.5°	886.3	885.0	883.8	882.5	881.3	881.9	884.3	886.7	889.1	891.5	892.4
155°	908.5	907.1	905.6	904.2	902.8	903.0	904.9	906.8	908.7	910.6	911.5
157.5°	925.8	924.6	923.4	922.2	921.1	921.1	922.4	923.7	925.0	926.3	927.5
160°	936.0	935.0	934.1	933.2	932.2	932.2	933.2	934.1	935.0	936.0	937.0
162.5°	945.0	944.1	943.2	942.2	941.3	941.2	942.0	942.9	943.7	944.5	945.5
165°	957.3	956.2	955.3	954.4	953.4	953.2	953.7	954.1	954.6	955.1	956.2
167.5°	966.2	965.3	964.4	963.4	962.5	962.3	962.7	963.1	963.6	964.0	965.1
170°	971.4	970.4	969.5	968.6	967.6	967.2	967.6	968.0	968.3	968.6	969.7
172.5°	974.7	973.8	972.9	971.9	971.0	970.7	971.0	971.3	971.6	971.9	973.0
175°	979.2	978.1	976.9	975.8	974.7	974.3	974.6	975.0	975.3	975.6	976.7
177.5°	979.9	979.0	978.1	977.2	976.3	975.9	976.0	976.2	976.3	976.4	977.3
180°	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1
2.5°	475.0	475.8	476.7	477.1	476.9	476.7	476.6	476.4
5°	471.9	472.7	473.5	473.8	473.6	473.4	473.2	473.0
7.5°	466.6	467.4	468.2	468.5	468.3	468.0	467.8	467.6
10°	461.8	462.6	463.4	463.6	463.3	463.0	462.7	462.4
12.5°	456.2	456.7	457.3	457.5	457.3	457.0	456.8	456.6
15°	446.3	446.7	447.1	447.1	446.6	446.1	445.6	445.0
17.5°	434.5	435.0	435.5	435.5	434.9	434.5	434.0	433.5
20°	425.5	425.8	426.1	426.0	425.6	425.2	424.7	424.3
22.5°	415.8	415.9	415.9	415.8	415.6	415.3	415.1	414.9
25°	400.0	400.2	400.4	400.4	400.2	400.0	399.8	399.6
27.5°	384.5	384.2	383.8	383.4	382.9	382.4	382.0	381.5
30°	372.3	372.0	371.7	371.4	371.0	370.6	370.2	369.7
32.5°	360.5	359.9	359.4	358.9	358.5	358.1	357.7	357.3
35°	341.4	340.8	340.2	339.7	339.2	338.7	338.2	337.6
37.5°	322.3	321.6	320.8	320.2	319.7	319.2	318.8	318.3
40°	309.2	308.3	307.4	306.7	306.3	305.9	305.5	305.1
42.5°	296.2	295.2	294.2	293.4	292.9	292.3	291.8	291.1
45°	276.2	275.1	274.0	273.2	272.8	272.4	272.0	271.6
47.5°	255.5	254.3	253.1	252.2	251.7	251.1	250.4	249.8
50°	242.2	240.7	239.2	238.3	237.8	237.3	236.8	236.3
52.5°	228.3	227.1	225.9	225.0	224.3	223.7	223.0	222.3
55°	207.6	206.4	205.2	204.4	203.9	203.3	202.8	202.3
57.5°	186.2	185.0	183.8	183.0	182.7	182.3	181.9	181.5
60°	172.1	171.0	169.9	169.2	168.8	168.5	168.2	167.9
62.5°	158.6	157.6	156.6	155.9	155.5	155.1	154.7	154.3
65°	138.0	137.1	136.2	135.5	135.0	134.5	134.0	133.5
67.5°	117.8	117.0	116.3	115.7	115.3	114.9	114.5	114.1
70°	104.5	103.8	103.1	102.6	102.2	101.7	101.3	100.9
72.5°	92.1	91.4	90.7	90.1	89.8	89.5	89.2	88.8
75°	72.6	72.0	71.4	71.2	71.4	71.6	71.8	72.0
77.5°	55.2	54.9	54.6	54.3	54.0	53.8	53.5	53.2
80°	43.9	43.6	43.3	43.0	42.8	42.6	42.4	42.2
82.5°	32.7	32.3	31.9	31.7	31.7	31.6	31.6	31.6
85°	17.3	17.0	16.7	16.5	16.4	16.3	16.2	16.1
87.5°	7.8	7.7	7.6	7.6	7.6	7.6	7.5	7.5
90°	15.8	16.5	17.3	17.9	18.2	18.5	18.8	19.1
92.5°	17.3	17.7	18.1	18.4	18.5	18.7	18.9	19.1
95°	29.2	29.9	30.7	31.0	30.9	30.7	30.6	30.4
97.5°	38.2	38.8	39.4	39.8	40.0	40.2	40.4	40.6
100°	42.8	44.0	45.3	46.2	46.5	46.8	47.1	47.4
102.5°	44.7	46.4	48.0	49.0	49.5	49.9	50.3	50.8
105°	46.6	48.3	50.0	51.2	51.8	52.5	53.1	53.7
107.5°	56.9	55.1	53.3	52.8	53.4	54.0	54.6	55.2
110°	92.3	76.5	60.9	53.3	53.9	54.6	55.2	55.8



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CATALOG NUMBER: S122DIW-S290D710U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	197.4	140.2	82.8	54.4	54.9	55.4	55.9	56.5
115°	290.7	217.9	145.2	103.2	91.9	80.6	69.3	58.0
117.5°	448.0	430.3	412.7	385.4	348.2	311.0	273.9	236.7
120°	522.0	523.8	525.7	516.0	494.8	473.6	452.4	431.2
122.5°	553.8	554.9	556.1	554.6	550.5	546.3	542.3	538.2
125°	599.6	600.7	601.8	602.6	603.0	603.5	604.0	604.4
127.5°	641.9	643.5	645.1	645.9	646.0	646.1	646.2	646.3
130°	668.7	670.4	672.2	673.0	672.8	672.7	672.5	672.4
132.5°	694.8	696.3	697.7	698.4	698.2	698.1	697.9	697.8
135°	732.1	733.6	735.2	735.8	735.5	735.2	734.9	734.6
137.5°	766.6	768.1	769.7	770.2	769.6	769.1	768.6	768.0
140°	789.0	790.4	791.8	792.1	791.3	790.5	789.7	789.0
142.5°	809.6	810.9	812.2	812.4	811.7	810.9	810.1	809.3
145°	838.5	839.6	840.7	840.9	840.1	839.3	838.5	837.8
147.5°	863.7	864.5	865.4	865.5	864.7	864.1	863.4	862.7
150°	879.2	880.2	881.1	881.2	880.4	879.6	878.8	878.1
152.5°	893.3	894.3	895.2	895.2	894.1	893.1	892.1	891.0
155°	912.4	913.4	914.3	914.1	912.9	911.7	910.4	909.2
157.5°	928.6	929.6	930.7	930.6	929.4	928.2	927.0	925.6
160°	937.9	938.9	939.8	939.7	938.6	937.5	936.4	935.3
162.5°	946.6	947.7	948.8	948.7	947.3	945.9	944.5	943.2
165°	957.4	958.4	959.5	959.5	958.4	957.4	956.2	955.1
167.5°	966.2	967.3	968.4	968.3	966.8	965.4	964.0	962.6
170°	970.8	971.8	972.9	972.8	971.4	970.0	968.6	967.1
172.5°	974.1	975.2	976.3	976.1	974.7	973.3	971.9	970.5
175°	977.9	978.9	980.0	979.8	978.2	976.6	975.0	973.5
177.5°	978.3	979.1	980.0	979.9	978.8	977.5	976.4	975.3
180°	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0

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