

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: P331473-935

Luminaire Tested: **S122DIW-S290D710U935-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331473-935  
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-S290D710U935-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 710 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3472.8 lumens  
Efficiency: N/A  
Efficacy: 114.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

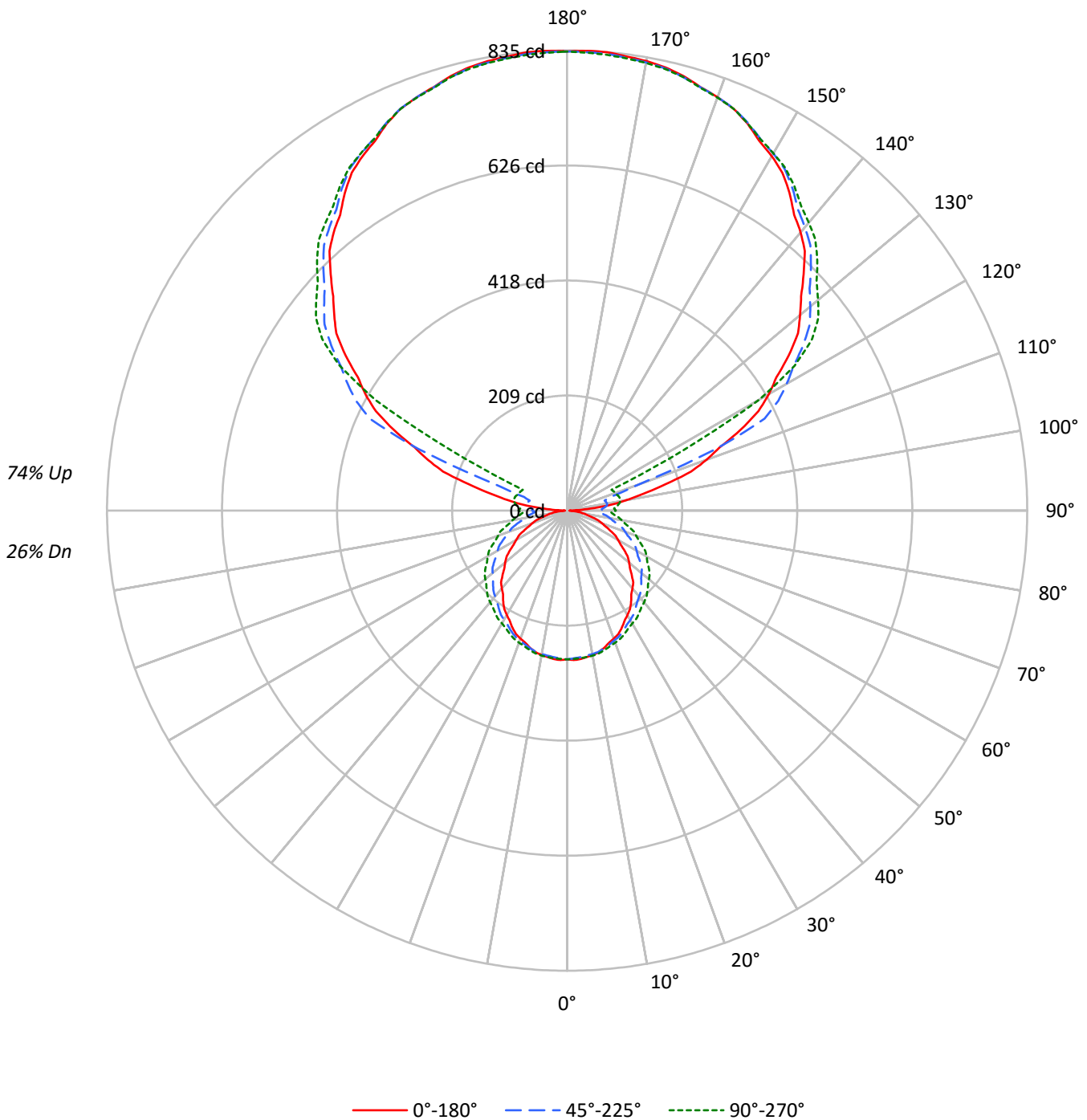
Input Watts (W): 30.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P331473-935

CATALOG NUMBER: S122DIW-S290D710U935-4F0-1E-UDD-D

**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	0
RCR																		
0	102	102	102	102	91	91	91	91	70	70	70	52	52	52	34	34	34	26
1	92	87	83	79	82	78	74	71	60	58	56	44	43	41	29	28	27	21
2	83	76	69	64	74	67	62	58	52	49	45	38	36	34	25	24	22	17
3	76	66	59	53	67	59	53	48	46	41	38	33	31	28	22	20	19	14
4	69	58	50	44	61	52	45	40	40	36	32	30	26	24	19	18	16	12
5	63	52	44	38	56	46	39	34	36	31	27	26	23	20	17	15	14	10
6	58	46	38	32	51	41	34	29	32	27	23	24	20	18	16	14	12	9
7	53	41	34	28	47	37	30	26	29	24	20	21	18	15	14	12	10	8
8	49	37	30	25	44	34	27	22	26	21	18	19	16	14	13	11	9	7
9	46	34	27	22	41	30	24	20	24	19	16	18	14	12	12	10	8	6
10	43	31	24	19	38	28	22	18	22	17	14	16	13	11	11	9	8	5

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

	0°	45°	90°
0°	4358	4358	4358
5°	4379	4195	4179
10°	4352	4070	4026
15°	4290	3939	3863
20°	4215	3798	3707
25°	4141	3663	3565
30°	4034	3524	3423
35°	3928	3389	3323
40°	3818	3275	3223
45°	3709	3172	3137
50°	3596	3079	3053
55°	3474	2979	2968
60°	3329	2876	2878
65°	3174	2756	2769
70°	3001	2623	2653
75°	2784	2499	2544
80°	2445	2366	2436
85°	2110	2255	2350



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	25.6	0.7
10°-20°	73.3	2.1
20°-30°	111.1	3.2
30°-40°	135.3	3.9
40°-50°	145.6	4.2
50°-60°	141.4	4.1
60°-70°	123.5	3.6
70°-80°	95.1	2.7
80°-90°	65.8	1.9
90°-100°	71.7	2.1
100°-110°	134.0	3.9
110°-120°	293.6	8.5
120°-130°	461.4	13.3
130°-140°	483.1	13.9
140°-150°	445.3	12.8
150°-160°	357.3	10.3
160°-170°	230.3	6.6
170°-180°	79.3	2.3
0°-30°	210.0	6.0
0°-40°	345.4	9.9
0°-60°	632.4	18.2
0°-90°	916.8	26.4
90°-120°	499.3	14.4
90°-150°	1889.2	54.4
90°-180°	2556.0	73.6
0°-180°	3472.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	270	270	270	270	270	
5°	271	269	267	269	269	26
15°	258	259	259	262	262	73
25°	235	237	241	245	247	108
35°	202	209	216	225	228	126
45°	166	177	190	202	206	128
55°	127	142	162	175	181	114
65°	87	106	129	145	150	86
75°	48	70	95	111	117	51
85°	14	38	63	79	85	15
90°	4	34	64	82	88	4
95°	42	42	68	86	90	50
105°	185	205	70	90	98	198
115°	348	364	395	141	89	343
125°	491	500	523	537	543	438
135°	607	616	626	639	642	469
145°	703	703	713	719	719	440
155°	775	770	776	779	775	357
165°	816	813	814	818	814	230
175°	835	831	832	835	830	79
180°	833	833	833	833	833	



TEST NUMBER: P331473-935

CATALOG NUMBER: S122DIW-S290D710U935-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	271.5	271.2	271.0	270.8	270.6	270.3	269.8	269.3	268.8	268.3	268.6
5°	270.7	270.4	270.2	269.9	269.6	269.2	268.7	268.2	267.7	267.2	267.7
7.5°	268.2	268.0	267.9	267.7	267.5	267.3	266.8	266.5	266.0	265.6	266.3
10°	266.4	266.2	266.0	265.9	265.7	265.4	265.2	264.9	264.7	264.4	265.1
12.5°	263.2	263.3	263.3	263.4	263.4	263.3	263.1	262.9	262.7	262.5	263.2
15°	258.1	258.3	258.5	258.6	258.8	258.9	258.9	258.9	258.9	258.9	259.7
17.5°	251.6	251.9	252.3	252.7	253.0	253.4	253.7	253.9	254.2	254.5	255.3
20°	247.2	247.6	248.1	248.5	248.9	249.3	249.7	250.0	250.4	250.7	251.7
22.5°	242.5	243.0	243.5	244.0	244.5	245.0	245.5	246.0	246.5	246.9	247.9
25°	234.7	235.3	235.9	236.5	237.1	237.8	238.6	239.4	240.1	240.9	241.9
27.5°	225.3	226.3	227.3	228.3	229.3	230.2	231.1	232.0	233.0	233.9	235.2
30°	219.0	220.2	221.3	222.4	223.5	224.7	225.8	227.0	228.1	229.2	230.6
32.5°	212.2	213.4	214.6	215.9	217.2	218.5	219.9	221.2	222.6	223.9	225.5
35°	202.2	203.7	205.2	206.6	208.1	209.7	211.4	213.0	214.6	216.3	218.2
37.5°	191.4	193.1	194.8	196.6	198.2	200.2	202.3	204.4	206.6	208.7	210.9
40°	184.3	186.1	188.0	189.9	191.8	194.0	196.3	198.7	201.0	203.4	205.6
42.5°	177.4	179.3	181.2	183.0	185.0	187.3	190.0	192.7	195.4	198.0	200.5
45°	165.8	168.2	170.6	172.9	175.2	177.9	181.0	184.0	187.0	190.1	192.8
47.5°	154.5	157.0	159.6	162.1	164.7	167.8	171.3	174.9	178.5	182.0	184.9
50°	146.7	149.4	152.1	154.7	157.5	160.7	164.7	168.6	172.5	176.4	179.3
52.5°	139.1	142.0	144.8	147.7	150.5	153.9	158.1	162.2	166.3	170.5	173.5
55°	127.1	130.3	133.4	136.5	139.7	143.4	148.0	152.5	157.0	161.5	164.7
57.5°	115.2	118.7	122.3	125.8	129.3	133.4	138.0	142.6	147.2	151.9	155.2
60°	106.8	110.6	114.3	118.0	121.7	126.1	131.0	136.0	140.9	145.9	149.2
62.5°	99.3	103.1	107.0	110.9	114.8	119.2	124.2	129.1	134.1	139.1	142.5
65°	86.8	91.1	95.3	99.6	103.8	108.6	113.7	118.8	124.0	129.1	132.7
67.5°	75.4	79.9	84.3	88.8	93.2	98.1	103.3	108.6	113.8	119.1	122.7
70°	67.2	71.8	76.3	80.8	85.3	90.3	95.7	101.1	106.5	111.8	115.6
72.5°	59.8	64.4	69.1	73.7	78.4	83.4	88.9	94.4	99.9	105.3	109.0
75°	48.1	53.0	57.9	62.7	67.6	72.8	78.4	83.9	89.5	95.1	98.8
77.5°	36.9	41.9	47.0	52.1	57.3	62.6	68.3	73.9	79.6	85.2	88.9
80°	29.4	34.6	40.0	45.2	50.5	56.1	61.6	67.3	72.9	78.6	82.2
82.5°	23.1	28.3	33.6	38.7	44.0	49.5	55.2	61.0	66.6	72.3	76.0
85°	14.1	19.5	24.9	30.2	35.6	41.1	46.7	52.3	57.8	63.4	67.0
87.5°	7.7	13.3	18.8	24.2	29.7	35.3	41.1	46.8	52.6	58.5	62.1
90°	4.5	11.0	17.6	24.0	30.6	37.1	43.7	50.5	57.1	63.7	67.8
92.5°	15.8	20.3	24.9	29.4	34.0	39.3	45.1	51.1	56.9	62.8	66.6
95°	42.3	41.9	41.7	41.3	41.0	43.9	50.0	56.2	62.3	68.4	72.5
97.5°	80.5	71.6	62.9	54.0	45.2	44.3	51.6	58.7	65.9	73.1	76.8
100°	109.4	94.3	79.1	64.1	48.9	44.9	52.0	59.2	66.3	73.4	77.7
102.5°	140.9	140.0	139.1	138.1	137.2	129.5	115.2	100.9	86.5	72.2	76.8
105°	185.2	191.7	198.3	204.8	211.4	198.6	166.5	134.5	102.5	70.4	74.9
107.5°	236.1	241.3	246.6	251.8	257.1	240.0	200.4	160.9	121.4	81.9	83.3
110°	268.5	273.1	277.7	282.2	286.8	271.8	237.4	202.9	168.5	134.1	123.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	299.5	303.4	307.4	311.3	315.2	314.4	308.9	303.4	297.9	292.4	246.3
115°	348.1	351.4	354.6	357.8	361.1	366.4	373.6	380.8	388.1	395.4	336.0
117.5°	391.2	394.4	397.6	400.8	404.0	408.5	414.4	420.3	426.3	432.1	419.7
120°	423.1	425.4	427.8	430.2	432.5	436.6	442.6	448.4	454.3	460.2	464.3
122.5°	450.1	452.4	454.6	456.8	459.1	463.2	469.1	475.0	480.9	486.8	490.1
125°	490.9	492.6	494.3	496.0	497.7	501.3	506.6	512.0	517.3	522.6	525.9
127.5°	528.1	529.9	531.8	533.6	535.5	538.4	542.6	546.7	550.9	555.0	558.5
130°	551.7	553.7	555.8	557.8	559.9	562.6	565.9	569.2	572.5	575.8	579.4
132.5°	575.8	577.6	579.3	581.0	582.7	585.0	587.9	590.8	593.7	596.6	599.9
135°	606.7	608.9	611.1	613.2	615.4	617.4	619.5	621.6	623.6	625.8	628.9
137.5°	638.4	640.0	641.4	642.9	644.4	646.0	647.7	649.5	651.3	653.0	655.9
140°	659.2	660.2	661.2	662.1	663.1	664.4	666.1	667.7	669.4	671.1	673.6
142.5°	676.6	677.4	678.3	679.2	680.1	681.4	683.1	684.8	686.6	688.3	690.4
145°	703.4	703.3	703.2	703.0	702.8	704.0	706.2	708.5	710.8	713.1	714.5
147.5°	727.1	726.7	726.2	725.7	725.1	726.0	728.2	730.5	732.7	734.9	735.7
150°	742.6	741.7	740.7	739.8	738.8	739.4	741.6	743.7	745.9	748.0	748.8
152.5°	755.6	754.6	753.5	752.4	751.4	751.9	754.0	756.0	758.0	760.1	760.9
155°	774.6	773.4	772.1	770.9	769.7	769.9	771.5	773.1	774.7	776.4	777.1
157.5°	789.4	788.3	787.3	786.3	785.3	785.3	786.4	787.6	788.7	789.8	790.7
160°	798.1	797.2	796.4	795.7	794.8	794.8	795.7	796.4	797.2	798.1	798.8
162.5°	805.7	804.9	804.2	803.3	802.5	802.5	803.1	803.9	804.6	805.3	806.2
165°	816.1	815.3	814.5	813.7	812.9	812.7	813.1	813.5	813.9	814.3	815.3
167.5°	823.8	823.0	822.3	821.4	820.6	820.4	820.8	821.1	821.6	821.9	822.9
170°	828.2	827.3	826.6	825.8	824.9	824.7	824.9	825.3	825.5	825.8	826.7
172.5°	831.0	830.3	829.5	828.6	827.9	827.6	827.9	828.1	828.4	828.6	829.6
175°	834.8	833.9	832.9	832.0	831.0	830.7	831.0	831.3	831.6	831.8	832.8
177.5°	835.4	834.7	833.9	833.2	832.4	832.1	832.2	832.3	832.4	832.5	833.3
180°	833.0	833.0	833.0	833.0	833.0	833.0	833.0	833.0	833.0	833.0	833.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	269.0	269.3	269.7	269.8	269.7	269.5	269.4	269.2
5°	268.2	268.7	269.2	269.4	269.3	269.2	269.1	269.1
7.5°	266.9	267.5	268.2	268.5	268.4	268.3	268.2	268.1
10°	265.8	266.5	267.2	267.5	267.4	267.3	267.3	267.2
12.5°	263.9	264.6	265.3	265.6	265.5	265.4	265.4	265.3
15°	260.5	261.3	262.1	262.4	262.3	262.3	262.2	262.1
17.5°	256.1	256.9	257.7	258.1	258.1	258.1	258.1	258.1
20°	252.6	253.6	254.5	255.0	255.0	255.0	255.0	255.0
22.5°	248.9	249.9	250.8	251.3	251.5	251.6	251.8	251.9
25°	243.1	244.1	245.1	245.7	246.0	246.2	246.5	246.8
27.5°	236.5	237.9	239.2	240.0	240.1	240.3	240.5	240.7
30°	232.0	233.4	234.8	235.6	235.8	236.1	236.3	236.6
32.5°	227.0	228.7	230.3	231.4	231.8	232.3	232.7	233.2
35°	220.2	222.1	223.9	225.2	225.8	226.4	227.0	227.6
37.5°	212.9	215.1	217.2	218.6	219.2	219.9	220.5	221.1
40°	207.9	210.2	212.4	214.0	214.7	215.5	216.3	217.1
42.5°	203.0	205.4	207.9	209.6	210.3	211.1	211.9	212.7
45°	195.4	198.2	200.9	202.7	203.5	204.4	205.3	206.1
47.5°	187.7	190.5	193.3	195.2	196.1	197.1	198.0	199.0
50°	182.3	185.3	188.2	190.2	191.1	192.1	193.0	194.0
52.5°	176.5	179.5	182.5	184.6	185.6	186.7	187.7	188.6
55°	167.8	170.9	174.1	176.2	177.3	178.5	179.6	180.7
57.5°	158.6	162.0	165.3	167.6	168.8	169.9	171.0	172.2
60°	152.5	155.8	159.1	161.4	162.6	163.8	165.1	166.3
62.5°	146.0	149.6	153.1	155.4	156.5	157.6	158.9	160.0
65°	136.2	139.7	143.4	145.7	146.8	147.9	149.0	150.2
67.5°	126.2	129.8	133.5	135.9	137.0	138.2	139.4	140.6
70°	119.3	123.0	126.8	129.2	130.3	131.3	132.3	133.4
72.5°	112.6	116.3	119.9	122.4	123.6	124.9	126.2	127.4
75°	102.5	106.2	110.0	112.4	113.6	114.7	115.8	116.9
77.5°	92.6	96.3	100.0	102.5	103.8	105.0	106.2	107.4
80°	85.9	89.5	93.2	95.7	96.9	98.1	99.3	100.5
82.5°	79.6	83.3	87.0	89.4	90.5	91.7	92.8	93.9
85°	70.7	74.3	78.0	80.4	81.6	82.8	84.0	85.2
87.5°	65.8	69.5	73.2	75.6	76.7	77.9	79.0	80.2
90°	72.0	76.1	80.2	83.0	84.3	85.6	87.0	88.3
92.5°	70.3	74.0	77.8	80.3	81.5	82.7	83.9	85.2
95°	76.5	80.4	84.4	86.8	87.7	88.6	89.5	90.5
97.5°	80.6	84.4	88.1	90.6	91.8	92.9	94.1	95.3
100°	82.1	86.4	90.6	93.4	94.6	95.8	97.0	98.2
102.5°	81.4	85.8	90.4	93.3	94.7	96.0	97.3	98.7
105°	79.5	83.9	88.4	91.4	93.0	94.5	95.9	97.5
107.5°	84.7	86.2	87.6	89.0	90.5	92.0	93.5	95.0
110°	112.8	102.2	91.6	87.0	88.5	90.0	91.5	93.0





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CATALOG NUMBER: S122DIW-S290D710U935-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	200.3	154.2	108.1	85.8	87.1	88.5	89.9	91.3
115°	276.6	217.1	157.7	123.6	115.0	106.3	97.6	88.9
117.5°	407.3	394.9	382.5	360.8	330.0	299.2	268.5	237.6
120°	468.3	472.3	476.4	469.8	452.7	435.6	418.4	401.3
122.5°	493.4	496.7	500.1	500.4	497.7	495.0	492.3	489.7
125°	529.2	532.4	535.7	538.0	539.2	540.4	541.6	542.7
127.5°	562.1	565.6	569.1	571.3	572.1	573.0	573.8	574.6
130°	582.9	586.4	590.0	592.1	592.6	593.2	593.7	594.3
132.5°	603.1	606.4	609.7	611.6	612.2	612.7	613.3	613.8
135°	632.1	635.2	638.4	640.2	640.6	641.0	641.4	641.9
137.5°	658.8	661.8	664.6	666.2	666.3	666.4	666.6	666.7
140°	676.2	678.8	681.4	682.7	682.5	682.3	682.2	682.1
142.5°	692.7	694.9	697.1	698.1	697.8	697.7	697.4	697.2
145°	716.0	717.4	718.8	719.5	719.3	719.0	718.8	718.6
147.5°	736.5	737.3	738.0	738.2	737.9	737.5	737.2	736.8
150°	749.6	750.4	751.2	751.3	750.6	749.9	749.2	748.6
152.5°	761.6	762.5	763.3	763.3	762.3	761.5	760.6	759.7
155°	777.9	778.8	779.5	779.4	778.3	777.3	776.2	775.2
157.5°	791.7	792.6	793.5	793.4	792.4	791.3	790.3	789.2
160°	799.6	800.5	801.2	801.2	800.2	799.3	798.4	797.5
162.5°	807.1	808.0	808.9	808.8	807.6	806.5	805.3	804.2
165°	816.2	817.1	818.0	818.0	817.1	816.2	815.3	814.3
167.5°	823.8	824.8	825.6	825.5	824.3	823.1	821.9	820.7
170°	827.7	828.5	829.5	829.4	828.2	827.0	825.8	824.6
172.5°	830.5	831.5	832.4	832.2	831.0	829.8	828.6	827.4
175°	833.7	834.6	835.5	835.3	834.0	832.7	831.3	830.0
177.5°	834.1	834.7	835.5	835.4	834.5	833.4	832.5	831.6
180°	833.0	833.0	833.0	833.0	833.0	833.0	833.0	833.0

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