

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: P331473-830

Luminaire Tested: **S122DIW-S290D710U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331473-830  
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-S290D710U830-4F0-1E-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: 3801.7 lumens  
Efficiency: N/A  
Efficacy: 125.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

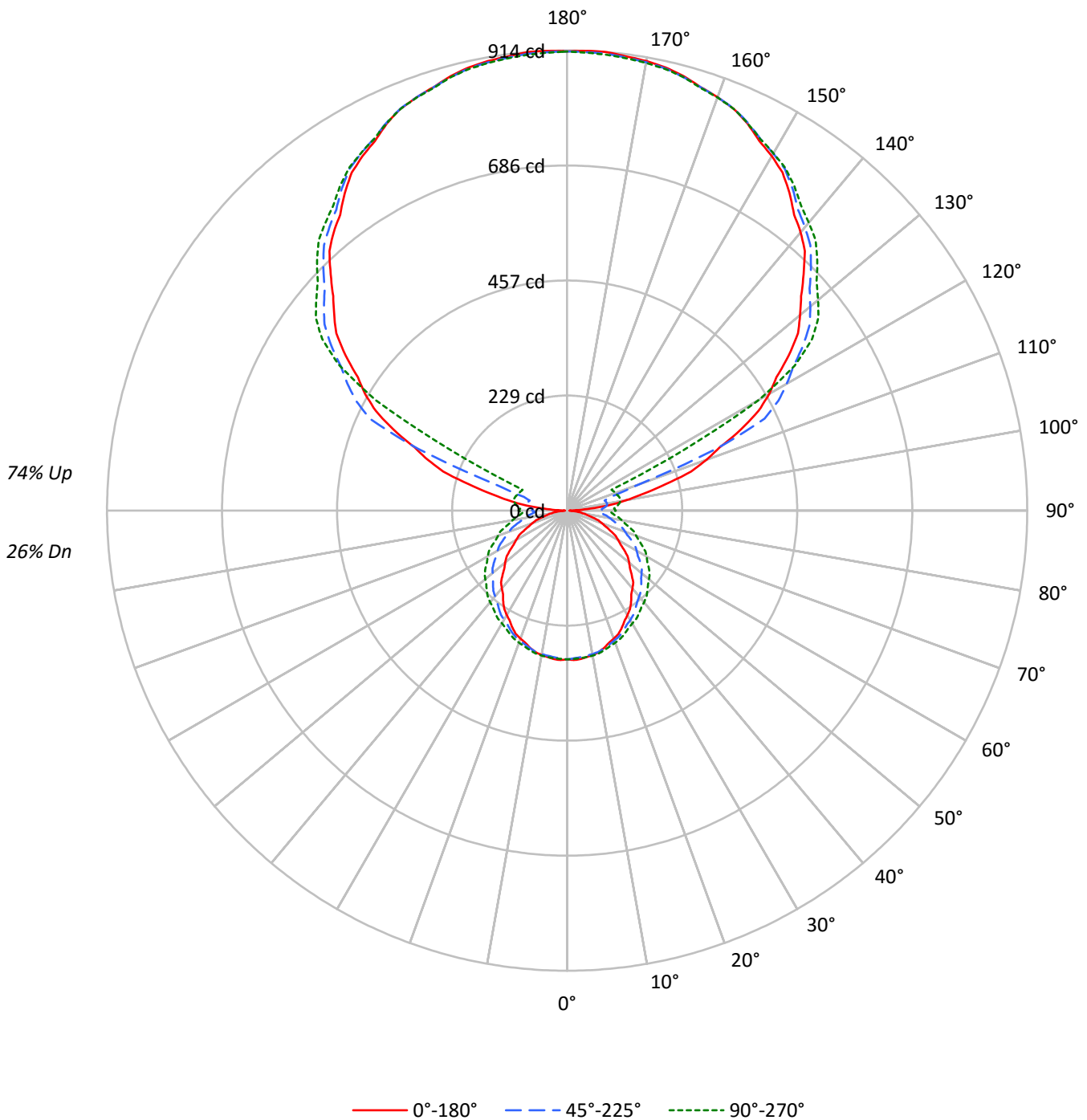
Input Watts (W): 30.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331473-830

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### Luminous Intensity Polar Plot





TEST NUMBER: P331473-830

CATALOG NUMBER: S122DIW-S290D710U830-4F0-1E-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°	4771	4771	4771
5°	4794	4593	4573
10°	4763	4457	4407
15°	4698	4312	4229
20°	4614	4159	4059
25°	4533	4009	3902
30°	4418	3857	3747
35°	4301	3711	3638
40°	4178	3584	3528
45°	4060	3473	3434
50°	3936	3371	3343
55°	3802	3261	3248
60°	3643	3149	3150
65°	3474	3016	3031
70°	3286	2872	2904
75°	3050	2735	2786
80°	2669	2592	2667
85°	2319	2468	2574



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	28.0	0.7
10°-20°	80.3	2.1
20°-30°	121.6	3.2
30°-40°	148.2	3.9
40°-50°	159.4	4.2
50°-60°	154.8	4.1
60°-70°	135.2	3.6
70°-80°	104.1	2.7
80°-90°	72.1	1.9
90°-100°	78.5	2.1
100°-110°	146.7	3.9
110°-120°	321.4	8.5
120°-130°	505.2	13.3
130°-140°	528.9	13.9
140°-150°	487.5	12.8
150°-160°	391.2	10.3
160°-170°	252.1	6.6
170°-180°	86.8	2.3
0°-30°	229.9	6.0
0°-40°	378.1	9.9
0°-60°	692.3	18.2
0°-90°	1003.6	26.4
90°-120°	546.6	14.4
90°-150°	2068.1	54.4
90°-180°	2798.0	73.6
0°-180°	3801.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	296	296	296	296	296	
5°	296	295	292	295	294	28
15°	283	283	283	287	287	80
25°	257	260	264	269	270	118
35°	221	229	237	246	249	138
45°	182	193	208	221	226	140
55°	139	155	177	192	198	124
65°	95	116	141	158	164	94
75°	53	77	104	122	128	56
85°	16	42	69	87	93	17
90°	5	37	70	89	97	5
95°	46	46	75	94	99	55
105°	203	224	77	98	107	217
115°	381	398	433	154	97	375
125°	537	547	572	588	594	479
135°	664	675	685	700	703	513
145°	770	770	781	787	787	482
155°	848	843	850	853	849	391
165°	893	890	892	896	892	252
175°	914	910	911	915	909	87
180°	912	912	912	912	912	



TEST NUMBER: P331473-830

CATALOG NUMBER: S122DIW-S290D710U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5
2.5°	297.2	296.9	296.7	296.4	296.2	295.9	295.3	294.8	294.3	293.7	294.1
5°	296.3	296.1	295.8	295.5	295.1	294.7	294.2	293.6	293.0	292.5	293.0
7.5°	293.6	293.4	293.2	293.0	292.8	292.6	292.1	291.7	291.2	290.8	291.5
10°	291.6	291.4	291.2	291.1	290.9	290.6	290.3	290.0	289.7	289.5	290.2
12.5°	288.1	288.2	288.2	288.3	288.3	288.2	288.0	287.9	287.6	287.4	288.1
15°	282.6	282.8	283.0	283.1	283.3	283.4	283.4	283.4	283.4	283.4	284.3
17.5°	275.4	275.8	276.2	276.6	277.0	277.4	277.7	278.0	278.2	278.6	279.5
20°	270.6	271.1	271.5	272.0	272.5	273.0	273.3	273.7	274.1	274.5	275.5
22.5°	265.5	266.0	266.6	267.1	267.7	268.2	268.7	269.3	269.8	270.3	271.4
25°	256.9	257.6	258.3	258.9	259.6	260.3	261.2	262.0	262.9	263.7	264.9
27.5°	246.7	247.7	248.8	249.9	251.0	252.0	253.0	254.0	255.1	256.1	257.5
30°	239.8	241.0	242.2	243.5	244.7	246.0	247.2	248.5	249.7	250.9	252.4
32.5°	232.2	233.7	235.0	236.4	237.8	239.2	240.7	242.1	243.6	245.1	246.9
35°	221.4	223.0	224.6	226.2	227.8	229.5	231.4	233.2	235.0	236.8	238.8
37.5°	209.5	211.4	213.3	215.2	217.0	219.1	221.5	223.8	226.1	228.5	230.8
40°	201.7	203.8	205.9	207.9	210.0	212.4	214.9	217.5	220.1	222.6	225.1
42.5°	194.2	196.2	198.3	200.4	202.6	205.0	208.0	210.9	213.9	216.8	219.5
45°	181.5	184.1	186.7	189.3	191.8	194.7	198.1	201.4	204.7	208.1	211.0
47.5°	169.1	171.9	174.7	177.5	180.3	183.7	187.6	191.4	195.4	199.3	202.4
50°	160.6	163.5	166.5	169.4	172.4	176.0	180.3	184.5	188.8	193.1	196.3
52.5°	152.3	155.4	158.5	161.6	164.8	168.5	173.1	177.6	182.1	186.6	189.9
55°	139.1	142.6	146.0	149.4	152.9	157.0	162.0	166.9	171.9	176.8	180.3
57.5°	126.1	130.0	133.8	137.7	141.6	146.0	151.1	156.1	161.2	166.3	169.9
60°	116.9	121.0	125.1	129.1	133.3	138.0	143.5	148.8	154.3	159.7	163.3
62.5°	108.7	112.9	117.2	121.4	125.6	130.4	135.9	141.3	146.8	152.2	156.0
65°	95.0	99.7	104.3	109.1	113.7	118.9	124.4	130.1	135.7	141.3	145.2
67.5°	82.6	87.5	92.3	97.2	102.1	107.4	113.1	118.9	124.6	130.4	134.3
70°	73.6	78.6	83.5	88.5	93.4	98.9	104.7	110.7	116.6	122.4	126.6
72.5°	65.4	70.5	75.6	80.7	85.9	91.3	97.4	103.3	109.3	115.3	119.3
75°	52.7	58.0	63.3	68.6	74.0	79.6	85.8	91.9	97.9	104.1	108.1
77.5°	40.3	45.9	51.5	57.0	62.7	68.5	74.7	80.9	87.1	93.2	97.4
80°	32.1	37.9	43.7	49.5	55.3	61.4	67.5	73.7	79.8	86.1	90.0
82.5°	25.3	31.0	36.8	42.4	48.2	54.2	60.4	66.7	73.0	79.2	83.2
85°	15.5	21.3	27.2	33.1	39.0	45.0	51.1	57.2	63.2	69.4	73.3
87.5°	8.5	14.5	20.5	26.5	32.5	38.6	45.0	51.3	57.6	64.0	68.0
90°	4.9	12.1	19.2	26.3	33.5	40.6	47.9	55.2	62.5	69.7	74.3
92.5°	17.2	22.2	27.2	32.2	37.2	43.0	49.4	55.9	62.3	68.7	72.9
95°	46.3	45.9	45.6	45.2	44.9	48.1	54.8	61.5	68.2	74.9	79.4
97.5°	88.1	78.4	68.8	59.1	49.5	48.5	56.5	64.3	72.1	80.0	84.1
100°	119.8	103.2	86.6	70.1	53.5	49.1	56.9	64.8	72.6	80.4	85.1
102.5°	154.3	153.3	152.2	151.2	150.1	141.8	126.1	110.5	94.7	79.1	84.1
105°	202.7	209.9	217.1	224.2	231.4	217.4	182.3	147.2	112.2	77.1	82.0
107.5°	258.4	264.2	269.9	275.7	281.4	262.7	219.4	176.2	132.9	89.6	91.2
110°	294.0	299.0	304.0	309.0	314.0	297.6	259.9	222.2	184.5	146.8	135.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	327.8	332.2	336.5	340.8	345.1	344.2	338.2	332.2	326.1	320.1	269.7
115°	381.1	384.7	388.2	391.7	395.3	401.1	409.0	416.9	424.9	432.8	367.8
117.5°	428.3	431.8	435.3	438.8	442.2	447.1	453.6	460.1	466.7	473.1	459.5
120°	463.2	465.7	468.3	470.9	473.4	478.0	484.5	490.9	497.4	503.8	508.2
122.5°	492.8	495.2	497.7	500.1	502.6	507.1	513.5	520.0	526.4	532.9	536.5
125°	537.3	539.2	541.1	543.0	544.9	548.7	554.6	560.4	566.3	572.1	575.7
127.5°	578.1	580.1	582.1	584.1	586.2	589.4	594.0	598.5	603.0	607.6	611.4
130°	604.0	606.1	608.4	610.7	612.9	615.9	619.5	623.1	626.7	630.3	634.2
132.5°	630.4	632.3	634.1	636.0	637.9	640.5	643.6	646.8	649.9	653.1	656.7
135°	664.2	666.6	668.9	671.3	673.6	675.9	678.2	680.4	682.7	685.0	688.4
137.5°	698.9	700.6	702.2	703.8	705.4	707.2	709.1	711.1	712.9	714.8	718.0
140°	721.6	722.7	723.8	724.8	725.9	727.4	729.2	730.9	732.8	734.6	737.4
142.5°	740.6	741.6	742.5	743.5	744.5	745.9	747.8	749.7	751.6	753.5	755.8
145°	770.1	769.9	769.8	769.6	769.4	770.6	773.1	775.6	778.1	780.6	782.2
147.5°	796.0	795.5	794.9	794.4	793.8	794.8	797.2	799.7	802.1	804.6	805.4
150°	812.9	811.9	810.9	809.8	808.8	809.5	811.8	814.2	816.5	818.9	819.7
152.5°	827.2	826.0	824.9	823.7	822.6	823.1	825.4	827.6	829.8	832.1	832.9
155°	847.9	846.6	845.3	844.0	842.6	842.8	844.6	846.3	848.1	849.9	850.7
157.5°	864.1	863.0	861.9	860.7	859.7	859.7	860.9	862.1	863.4	864.6	865.6
160°	873.6	872.7	871.9	871.0	870.1	870.1	871.0	871.9	872.7	873.6	874.5
162.5°	882.0	881.2	880.3	879.4	878.5	878.4	879.2	880.1	880.8	881.6	882.5
165°	893.4	892.5	891.6	890.8	889.9	889.7	890.1	890.5	891.0	891.5	892.5
167.5°	901.8	901.0	900.1	899.2	898.3	898.1	898.5	898.9	899.4	899.8	900.8
170°	906.6	905.7	904.8	904.0	903.1	902.8	903.1	903.4	903.7	904.0	905.0
172.5°	909.7	908.9	908.0	907.1	906.3	906.0	906.3	906.5	906.8	907.1	908.1
175°	913.9	912.9	911.8	910.8	909.7	909.4	909.6	910.0	910.3	910.6	911.6
177.5°	914.5	913.7	912.9	912.1	911.3	910.9	911.0	911.2	911.3	911.3	912.2
180°	911.9	911.9	911.9	911.9	911.9	911.9	911.9	911.9	911.9	911.9	911.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5
2.5°	294.5	294.8	295.2	295.4	295.2	295.0	294.9	294.7
5°	293.6	294.2	294.7	294.9	294.8	294.7	294.6	294.5
7.5°	292.2	292.8	293.6	293.9	293.8	293.7	293.6	293.5
10°	291.0	291.7	292.5	292.8	292.8	292.7	292.6	292.5
12.5°	288.9	289.6	290.4	290.8	290.7	290.6	290.5	290.4
15°	285.1	286.1	286.9	287.3	287.2	287.1	287.0	286.9
17.5°	280.4	281.3	282.1	282.6	282.6	282.6	282.6	282.6
20°	276.5	277.6	278.6	279.2	279.2	279.2	279.2	279.2
22.5°	272.5	273.5	274.6	275.1	275.3	275.4	275.6	275.8
25°	266.1	267.2	268.3	269.0	269.3	269.6	269.8	270.1
27.5°	258.9	260.4	261.8	262.7	262.9	263.1	263.3	263.5
30°	253.9	255.5	257.0	257.9	258.2	258.4	258.7	259.0
32.5°	248.5	250.3	252.1	253.3	253.7	254.3	254.8	255.2
35°	241.0	243.1	245.2	246.6	247.2	247.9	248.5	249.2
37.5°	233.1	235.4	237.8	239.3	240.0	240.7	241.4	242.0
40°	227.6	230.1	232.5	234.2	235.1	235.9	236.8	237.6
42.5°	222.3	224.9	227.6	229.4	230.3	231.1	232.0	232.8
45°	214.0	217.0	219.9	221.9	222.8	223.8	224.7	225.6
47.5°	205.5	208.5	211.6	213.7	214.7	215.7	216.8	217.8
50°	199.5	202.8	206.0	208.2	209.2	210.3	211.3	212.4
52.5°	193.2	196.5	199.8	202.1	203.2	204.3	205.5	206.5
55°	183.7	187.1	190.6	192.8	194.1	195.4	196.6	197.8
57.5°	173.6	177.3	181.0	183.4	184.7	186.0	187.2	188.5
60°	166.9	170.6	174.2	176.6	178.0	179.3	180.7	182.0
62.5°	159.9	163.7	167.6	170.1	171.4	172.6	173.9	175.1
65°	149.1	153.0	156.9	159.5	160.7	161.9	163.2	164.4
67.5°	138.2	142.1	146.1	148.7	150.0	151.3	152.6	153.9
70°	130.6	134.7	138.8	141.5	142.6	143.7	144.9	146.0
72.5°	123.3	127.3	131.3	134.0	135.3	136.8	138.2	139.5
75°	112.3	116.3	120.5	123.1	124.3	125.5	126.8	128.0
77.5°	101.4	105.5	109.5	112.3	113.6	114.9	116.2	117.5
80°	94.1	98.0	102.1	104.7	106.0	107.4	108.7	110.0
82.5°	87.2	91.2	95.2	97.8	99.1	100.4	101.6	102.8
85°	77.4	81.3	85.4	88.0	89.4	90.7	92.0	93.3
87.5°	72.0	76.1	80.1	82.8	84.0	85.3	86.5	87.8
90°	78.8	83.3	87.8	90.9	92.3	93.7	95.2	96.6
92.5°	77.0	81.1	85.2	87.9	89.3	90.6	91.9	93.2
95°	83.7	88.0	92.4	95.0	96.0	97.0	98.0	99.1
97.5°	88.2	92.4	96.4	99.2	100.5	101.7	103.0	104.3
100°	89.8	94.5	99.2	102.3	103.6	104.9	106.2	107.5
102.5°	89.1	94.0	99.0	102.2	103.7	105.1	106.5	108.0
105°	87.0	91.9	96.8	100.1	101.8	103.4	105.0	106.7
107.5°	92.7	94.3	95.9	97.5	99.1	100.8	102.4	104.0
110°	123.5	111.9	100.3	95.3	96.9	98.5	100.2	101.8





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CATALOG NUMBER: S122DIW-S290D710U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	219.2	168.8	118.3	93.9	95.4	96.9	98.4	99.9
115°	302.7	237.7	172.7	135.3	125.9	116.4	106.9	97.4
117.5°	445.9	432.3	418.7	395.0	361.3	327.5	293.9	260.1
120°	512.6	517.1	521.5	514.3	495.6	476.8	458.1	439.3
122.5°	540.2	543.8	547.4	547.8	544.9	541.9	538.9	536.0
125°	579.3	582.9	586.4	588.9	590.2	591.5	592.9	594.1
127.5°	615.3	619.2	623.0	625.4	626.3	627.3	628.1	629.1
130°	638.1	642.0	645.9	648.2	648.8	649.4	650.0	650.6
132.5°	660.3	663.8	667.4	669.5	670.1	670.7	671.4	671.9
135°	691.9	695.4	698.9	700.8	701.3	701.7	702.2	702.7
137.5°	721.2	724.4	727.5	729.2	729.4	729.5	729.7	729.8
140°	740.3	743.1	745.9	747.3	747.2	747.0	746.8	746.7
142.5°	758.3	760.7	763.1	764.2	763.9	763.7	763.5	763.3
145°	783.8	785.3	786.9	787.7	787.4	787.1	786.8	786.6
147.5°	806.3	807.1	807.9	808.1	807.8	807.4	807.0	806.6
150°	820.6	821.5	822.4	822.5	821.7	821.0	820.2	819.5
152.5°	833.8	834.7	835.6	835.6	834.5	833.6	832.6	831.6
155°	851.6	852.5	853.4	853.2	852.1	850.9	849.7	848.6
157.5°	866.7	867.6	868.6	868.6	867.4	866.3	865.2	863.9
160°	875.3	876.3	877.1	877.0	876.0	875.0	874.0	873.0
162.5°	883.5	884.5	885.5	885.4	884.1	882.9	881.6	880.3
165°	893.5	894.5	895.5	895.5	894.5	893.5	892.5	891.5
167.5°	901.8	902.9	903.8	903.7	902.4	901.1	899.8	898.4
170°	906.1	907.0	908.0	908.0	906.6	905.3	904.0	902.7
172.5°	909.2	910.2	911.3	911.1	909.7	908.4	907.1	905.8
175°	912.7	913.6	914.6	914.5	912.9	911.5	910.0	908.6
177.5°	913.0	913.8	914.6	914.5	913.5	912.4	911.3	910.3
180°	911.9	911.9	911.9	911.9	911.9	911.9	911.9	911.9

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