

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: P331474-840

Luminaire Tested: **S122DIW-S290D710U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331474-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,  
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-D1  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 710 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3694.2 lumens  
Efficiency: N/A  
Efficacy: 121.5 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

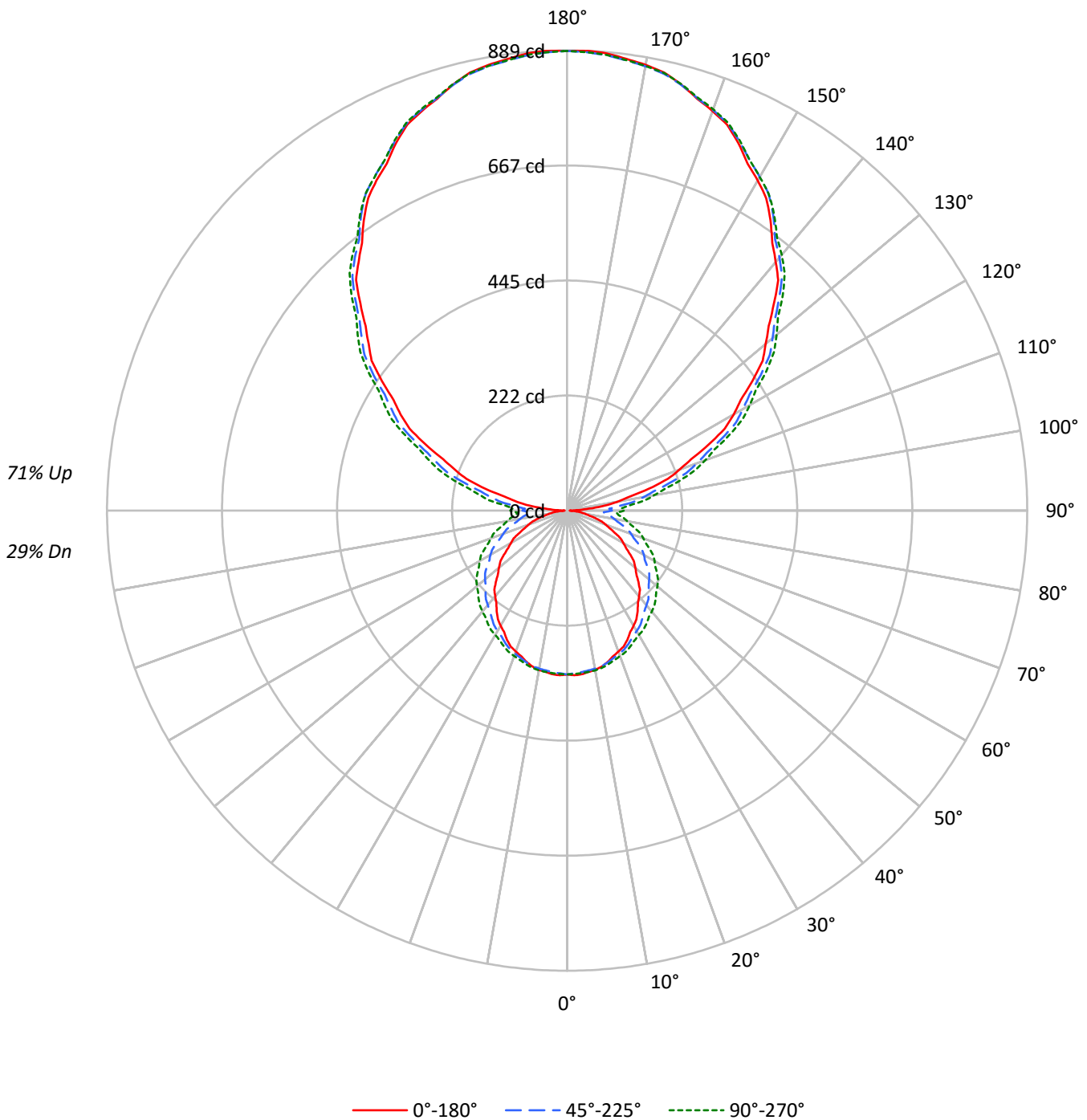
Input Watts (W): 30.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331474-840

CATALOG NUMBER: S122DIW-S290D710U840-4F0-1E-UDD-D1

### 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	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	92	92	92	92	72	72	72	54	54	54	37	37	37	29
1	92	88	84	80	82	79	75	72	61	59	57	46	44	43	31	30	29	23
2	84	76	70	64	74	68	63	58	53	50	46	40	37	35	27	25	24	18
3	76	66	59	53	68	60	53	48	47	42	38	35	32	29	24	22	20	15
4	69	58	51	45	62	52	46	40	41	36	32	31	27	25	21	19	17	13
5	63	52	44	38	56	47	40	34	37	32	28	27	24	21	19	16	15	11
6	58	46	38	32	52	42	35	30	33	28	24	25	21	18	17	15	13	9
7	54	42	34	28	48	37	31	26	30	25	21	22	19	16	15	13	11	8
8	50	38	30	25	44	34	27	23	27	22	18	20	17	14	14	12	10	7
9	46	34	27	22	41	31	24	20	24	20	16	19	15	13	13	11	9	7
10	43	31	24	19	38	28	22	18	22	18	14	17	14	11	12	10	8	6

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

	0°	45°	90°
0°	5112	5112	5112
5°	5137	4921	4901
10°	5105	4774	4722
15°	5033	4621	4531
20°	4944	4456	4348
25°	4857	4297	4181
30°	4733	4133	4015
35°	4608	3975	3898
40°	4476	3840	3780
45°	4351	3721	3681
50°	4218	3612	3581
55°	4076	3496	3482
60°	3902	3373	3374
65°	3723	3232	3247
70°	3523	3079	3110
75°	3270	2929	2984
80°	2861	2776	2858
85°	2484	2642	2759



TEST NUMBER: P331474-840

CATALOG NUMBER: S122DIW-S290D710U840-4F0-1E-UDD-D1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	30.0	0.8
10°-20°	86.0	2.3
20°-30°	130.3	3.5
30°-40°	158.8	4.3
40°-50°	170.8	4.6
50°-60°	165.9	4.5
60°-70°	144.8	3.9
70°-80°	111.5	3.0
80°-90°	78.4	2.1
90°-100°	107.8	2.9
100°-110°	212.4	5.7
110°-120°	323.6	8.8
120°-130°	406.7	11.0
130°-140°	446.7	12.1
140°-150°	433.3	11.7
150°-160°	362.6	9.8
160°-170°	240.5	6.5
170°-180°	84.1	2.3
0°-30°	246.3	6.7
0°-40°	405.1	11.0
0°-60°	741.7	20.1
0°-90°	1076.4	29.1
90°-120°	643.8	17.4
90°-150°	1930.6	52.3
90°-180°	2618.0	70.9
0°-180°	3694.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	317	317	317	317	317	
5°	318	316	313	316	316	30
15°	303	304	304	308	307	85
25°	275	278	283	288	289	127
35°	237	245	254	263	267	148
45°	194	207	223	237	242	150
55°	149	166	190	205	212	133
65°	102	125	151	170	176	101
75°	56	82	112	130	137	60
85°	17	45	74	93	100	18
90°	5	42	87	103	110	5
95°	43	72	101	117	122	48
105°	163	180	204	221	227	173
115°	302	312	330	343	346	298
125°	437	444	456	466	470	391
135°	565	573	579	588	589	436
145°	685	690	695	698	698	428
155°	783	785	788	791	789	360
165°	852	851	851	856	853	240
175°	886	884	883	888	884	84
180°	888	888	888	888	888	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6
2.5°	318.4	318.1	317.9	317.6	317.4	317.0	316.4	315.9	315.3	314.7	315.1
5°	317.5	317.2	316.9	316.6	316.2	315.8	315.2	314.6	314.0	313.4	314.0
7.5°	314.6	314.4	314.2	314.0	313.8	313.5	313.0	312.6	312.0	311.5	312.4
10°	312.5	312.3	312.0	311.8	311.6	311.3	311.0	310.7	310.4	310.1	310.9
12.5°	308.7	308.8	308.8	308.9	308.9	308.8	308.6	308.4	308.1	307.9	308.7
15°	302.8	303.0	303.2	303.4	303.6	303.7	303.7	303.7	303.7	303.7	304.6
17.5°	295.1	295.5	295.9	296.4	296.8	297.2	297.5	297.8	298.1	298.5	299.4
20°	289.9	290.4	290.9	291.4	292.0	292.5	292.9	293.3	293.7	294.1	295.2
22.5°	284.5	285.0	285.6	286.2	286.8	287.4	287.9	288.5	289.1	289.6	290.7
25°	275.3	276.0	276.7	277.4	278.1	278.9	279.8	280.7	281.7	282.6	283.8
27.5°	264.3	265.4	266.6	267.7	268.9	270.0	271.0	272.2	273.3	274.4	275.9
30°	256.9	258.2	259.5	260.8	262.2	263.6	264.9	266.2	267.5	268.8	270.4
32.5°	248.8	250.3	251.8	253.3	254.8	256.3	257.9	259.4	261.1	262.6	264.5
35°	237.2	238.9	240.7	242.4	244.1	245.9	247.9	249.8	251.8	253.7	255.9
37.5°	224.5	226.5	228.5	230.6	232.5	234.8	237.3	239.7	242.3	244.8	247.3
40°	216.1	218.3	220.6	222.8	225.0	227.5	230.2	233.1	235.8	238.5	241.2
42.5°	208.0	210.3	212.5	214.7	217.0	219.6	222.9	226.0	229.1	232.3	235.2
45°	194.5	197.2	200.1	202.8	205.5	208.6	212.3	215.8	219.3	223.0	226.1
47.5°	181.2	184.2	187.2	190.2	193.2	196.8	201.0	205.1	209.3	213.5	216.8
50°	172.1	175.2	178.3	181.5	184.7	188.5	193.2	197.7	202.3	206.9	210.4
52.5°	163.2	166.5	169.9	173.2	176.5	180.6	185.4	190.3	195.1	200.0	203.5
55°	149.1	152.8	156.4	160.1	163.8	168.2	173.6	178.8	184.2	189.5	193.2
57.5°	135.1	139.3	143.4	147.5	151.7	156.4	161.9	167.2	172.7	178.1	182.1
60°	125.2	129.7	134.0	138.4	142.8	147.8	153.7	159.5	165.3	171.1	175.0
62.5°	116.4	121.0	125.5	130.1	134.6	139.8	145.6	151.4	157.2	163.1	167.1
65°	101.8	106.8	111.8	116.8	121.8	127.3	133.3	139.4	145.4	151.4	155.6
67.5°	88.5	93.7	98.9	104.1	109.4	115.0	121.2	127.3	133.5	139.7	143.9
70°	78.9	84.2	89.5	94.8	100.1	105.9	112.2	118.6	124.9	131.2	135.6
72.5°	70.1	75.5	81.0	86.4	92.0	97.9	104.3	110.7	117.1	123.5	127.8
75°	56.5	62.1	67.9	73.5	79.3	85.3	91.9	98.5	104.9	111.5	115.8
77.5°	43.2	49.2	55.1	61.1	67.2	73.4	80.1	86.6	93.3	99.9	104.3
80°	34.4	40.6	46.9	53.0	59.3	65.7	72.3	79.0	85.5	92.2	96.4
82.5°	27.1	33.2	39.4	45.4	51.6	58.1	64.7	71.5	78.2	84.8	89.2
85°	16.6	22.8	29.2	35.4	41.8	48.2	54.7	61.3	67.8	74.3	78.6
87.5°	9.2	15.7	22.1	28.6	35.0	41.9	49.2	56.5	63.7	70.9	75.0
90°	5.4	13.2	21.2	29.1	37.0	46.0	56.2	66.4	76.5	86.7	90.5
92.5°	17.6	24.5	31.5	38.5	45.4	52.5	59.7	66.8	73.9	81.1	85.1
95°	42.6	49.1	55.5	62.0	68.5	74.9	81.4	87.9	94.2	100.7	104.6
97.5°	74.4	80.1	85.8	91.6	97.4	103.4	110.0	116.4	122.9	129.5	133.2
100°	98.4	103.5	108.6	113.7	118.8	124.4	130.7	136.8	143.1	149.3	153.1
102.5°	123.2	127.7	132.2	136.7	141.3	146.6	152.8	159.0	165.1	171.3	175.1
105°	163.4	166.8	170.4	173.8	177.2	181.8	187.4	193.1	198.6	204.3	208.2
107.5°	204.4	207.5	210.6	213.7	216.8	220.9	225.9	231.1	236.1	241.2	244.7
110°	230.4	233.5	236.5	239.5	242.6	246.6	251.6	256.5	261.6	266.5	269.8



TEST NUMBER: P331474-840

CATALOG NUMBER: S122DIW-S290D710U840-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	259.1	261.9	264.6	267.3	270.0	273.7	278.3	283.0	287.5	292.2	295.0
115°	301.5	303.7	305.8	307.9	310.0	313.3	317.5	321.7	326.0	330.2	333.2
117.5°	343.4	345.5	347.5	349.6	351.6	354.4	357.7	360.9	364.3	367.6	370.2
120°	371.5	373.3	375.1	376.8	378.5	380.7	383.5	386.3	389.0	391.7	394.7
122.5°	397.4	399.1	400.9	402.6	404.3	406.7	409.6	412.5	415.5	418.3	420.7
125°	437.1	438.6	440.1	441.5	443.0	445.1	448.0	450.7	453.4	456.3	458.5
127.5°	476.2	478.0	479.8	481.6	483.3	485.2	487.3	489.3	491.4	493.4	495.3
130°	500.8	502.8	504.8	507.0	509.0	510.9	512.7	514.5	516.3	518.2	520.3
132.5°	528.4	530.0	531.7	533.3	535.0	536.6	538.4	540.1	541.8	543.5	545.1
135°	564.7	566.5	568.4	570.3	572.1	573.7	575.0	576.3	577.7	579.1	581.1
137.5°	603.6	605.0	606.5	607.9	609.5	610.7	611.6	612.4	613.3	614.2	615.9
140°	626.9	628.3	629.8	631.2	632.5	633.7	634.8	635.8	636.8	637.9	639.5
142.5°	651.0	652.3	653.7	655.1	656.5	657.5	658.1	658.7	659.3	659.9	661.4
145°	684.9	686.1	687.2	688.4	689.6	690.6	691.7	692.7	693.7	694.7	695.5
147.5°	715.7	717.0	718.4	719.8	721.2	722.3	723.0	723.6	724.3	725.0	725.4
150°	736.6	737.6	738.6	739.6	740.6	741.4	742.1	742.8	743.5	744.2	744.7
152.5°	755.2	756.2	757.2	758.2	759.2	760.1	760.9	761.7	762.5	763.4	764.0
155°	783.0	783.6	784.1	784.6	785.1	785.6	786.1	786.6	787.1	787.6	788.4
157.5°	806.9	807.3	807.6	807.9	808.3	808.6	808.9	809.2	809.5	809.8	810.9
160°	821.3	821.6	821.9	822.3	822.6	822.9	823.0	823.2	823.3	823.5	824.6
162.5°	834.5	834.6	834.7	834.7	834.8	834.9	835.1	835.3	835.4	835.6	836.7
165°	852.0	851.8	851.7	851.5	851.4	851.3	851.3	851.3	851.3	851.3	852.4
167.5°	866.8	866.3	865.8	865.3	864.7	864.4	864.4	864.3	864.3	864.3	865.5
170°	874.5	874.0	873.5	873.0	872.5	872.2	872.0	871.8	871.7	871.5	872.7
172.5°	879.9	879.4	878.9	878.4	877.9	877.6	877.4	877.3	877.1	876.9	878.1
175°	886.5	886.1	885.6	885.0	884.5	884.1	883.7	883.4	883.1	882.7	883.9
177.5°	889.2	888.8	888.4	888.0	887.6	887.3	887.0	886.8	886.5	886.2	887.0
180°	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0



TEST NUMBER: P331474-840

CATALOG NUMBER: S122DIW-S290D710U840-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6
2.5°	315.5	315.9	316.3	316.5	316.3	316.1	316.0	315.8
5°	314.6	315.2	315.8	316.0	315.9	315.8	315.7	315.6
7.5°	313.1	313.8	314.6	314.9	314.8	314.7	314.6	314.5
10°	311.7	312.6	313.4	313.8	313.7	313.6	313.5	313.4
12.5°	309.5	310.3	311.1	311.5	311.4	311.3	311.2	311.1
15°	305.5	306.5	307.4	307.8	307.7	307.6	307.5	307.4
17.5°	300.4	301.3	302.3	302.8	302.8	302.8	302.8	302.8
20°	296.3	297.4	298.5	299.1	299.1	299.1	299.1	299.1
22.5°	292.0	293.1	294.2	294.8	295.0	295.1	295.3	295.5
25°	285.1	286.3	287.5	288.2	288.5	288.8	289.1	289.4
27.5°	277.4	279.0	280.5	281.4	281.7	281.9	282.1	282.4
30°	272.1	273.8	275.4	276.3	276.6	276.9	277.2	277.5
32.5°	266.3	268.2	270.1	271.4	271.9	272.5	273.0	273.5
35°	258.2	260.4	262.7	264.2	264.9	265.6	266.3	267.0
37.5°	249.7	252.3	254.8	256.4	257.1	257.9	258.6	259.3
40°	243.9	246.5	249.1	251.0	251.9	252.8	253.7	254.6
42.5°	238.1	241.0	243.9	245.8	246.7	247.6	248.5	249.4
45°	229.2	232.5	235.6	237.7	238.7	239.7	240.8	241.8
47.5°	220.2	223.4	226.7	228.9	230.0	231.2	232.3	233.4
50°	213.8	217.3	220.8	223.1	224.2	225.3	226.4	227.5
52.5°	207.0	210.6	214.1	216.5	217.7	218.9	220.2	221.3
55°	196.8	200.5	204.2	206.6	207.9	209.3	210.7	212.0
57.5°	186.0	190.0	193.9	196.5	197.9	199.2	200.6	202.0
60°	178.8	182.8	186.6	189.2	190.7	192.1	193.6	195.0
62.5°	171.3	175.4	179.6	182.3	183.6	184.9	186.3	187.6
65°	159.8	163.9	168.1	170.9	172.2	173.5	174.8	176.1
67.5°	148.0	152.3	156.5	159.4	160.7	162.1	163.5	164.9
70°	140.0	144.3	148.8	151.6	152.8	154.0	155.2	156.4
72.5°	132.1	136.4	140.7	143.6	145.0	146.5	148.0	149.5
75°	120.3	124.6	129.1	131.9	133.2	134.5	135.8	137.1
77.5°	108.7	113.0	117.3	120.3	121.7	123.1	124.5	125.9
80°	100.8	105.0	109.4	112.2	113.6	115.0	116.4	117.9
82.5°	93.4	97.8	102.0	104.8	106.1	107.6	108.9	110.2
85°	82.9	87.2	91.5	94.3	95.7	97.1	98.6	100.0
87.5°	79.2	83.2	87.4	90.0	91.4	92.7	94.0	95.3
90°	94.3	98.1	101.8	104.3	105.7	107.1	108.5	109.9
92.5°	89.2	93.3	97.4	100.0	101.3	102.5	103.8	105.0
95°	108.5	112.3	116.2	118.6	119.5	120.4	121.3	122.2
97.5°	137.0	140.8	144.5	147.0	148.1	149.4	150.5	151.7
100°	156.8	160.6	164.4	166.7	167.7	168.6	169.6	170.6
102.5°	178.9	182.8	186.6	188.9	190.0	190.9	191.9	192.8
105°	212.1	216.0	219.9	222.5	223.6	224.7	225.8	226.9
107.5°	248.3	251.9	255.4	257.3	257.7	258.1	258.4	258.8
110°	273.1	276.3	279.6	281.6	282.2	282.8	283.4	284.0





TEST NUMBER: P331474-840

CATALOG NUMBER: S122DIW-S290D710U840-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	297.9	300.7	303.6	305.4	306.2	306.9	307.7	308.4
115°	336.1	338.9	341.8	343.6	344.3	344.9	345.5	346.1
117.5°	372.8	375.5	378.1	379.6	380.2	380.7	381.2	381.8
120°	397.5	400.3	403.1	405.0	405.6	406.2	406.8	407.4
122.5°	423.0	425.5	427.8	429.3	429.9	430.5	431.1	431.7
125°	460.7	463.0	465.2	466.8	467.5	468.3	469.0	469.8
127.5°	497.3	499.2	501.1	502.2	502.6	503.0	503.3	503.7
130°	522.4	524.5	526.6	527.8	527.9	528.1	528.2	528.4
132.5°	546.8	548.5	550.1	551.0	551.3	551.6	551.9	552.2
135°	583.0	585.0	586.9	588.1	588.4	588.8	589.1	589.4
137.5°	617.6	619.4	621.2	622.1	622.1	622.1	622.1	622.2
140°	641.2	642.8	644.4	645.2	645.1	645.1	645.0	645.0
142.5°	662.8	664.3	665.7	666.3	666.2	666.1	665.9	665.8
145°	696.2	697.0	697.8	698.1	697.9	697.8	697.6	697.5
147.5°	725.8	726.3	726.7	726.8	726.4	726.0	725.6	725.2
150°	745.1	745.6	746.1	746.1	745.6	745.1	744.7	744.2
152.5°	764.6	765.2	765.9	765.9	765.2	764.6	764.0	763.4
155°	789.2	790.1	790.9	791.1	790.6	790.1	789.6	789.1
157.5°	812.0	813.1	814.3	814.5	813.6	812.8	812.0	811.2
160°	825.6	826.6	827.6	827.7	827.1	826.4	825.8	825.1
162.5°	837.8	839.0	840.1	840.2	839.4	838.7	837.9	837.1
165°	853.6	854.7	856.0	856.2	855.3	854.4	853.6	852.8
167.5°	866.7	867.8	869.0	869.1	868.3	867.4	866.6	865.7
170°	873.8	875.0	876.2	876.3	875.3	874.2	873.2	872.2
172.5°	879.3	880.4	881.6	881.6	880.7	879.7	878.7	877.7
175°	885.0	886.3	887.5	887.5	886.5	885.6	884.5	883.5
177.5°	887.8	888.6	889.4	889.4	888.6	887.8	887.0	886.2
180°	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0

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