

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: P331473-940

Luminaire Tested: **S122DIW-S290D710U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331473-940  
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-S290D710U940-4F0-1E-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: 3596.6 lumens  
Efficiency: N/A  
Efficacy: 118.3 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

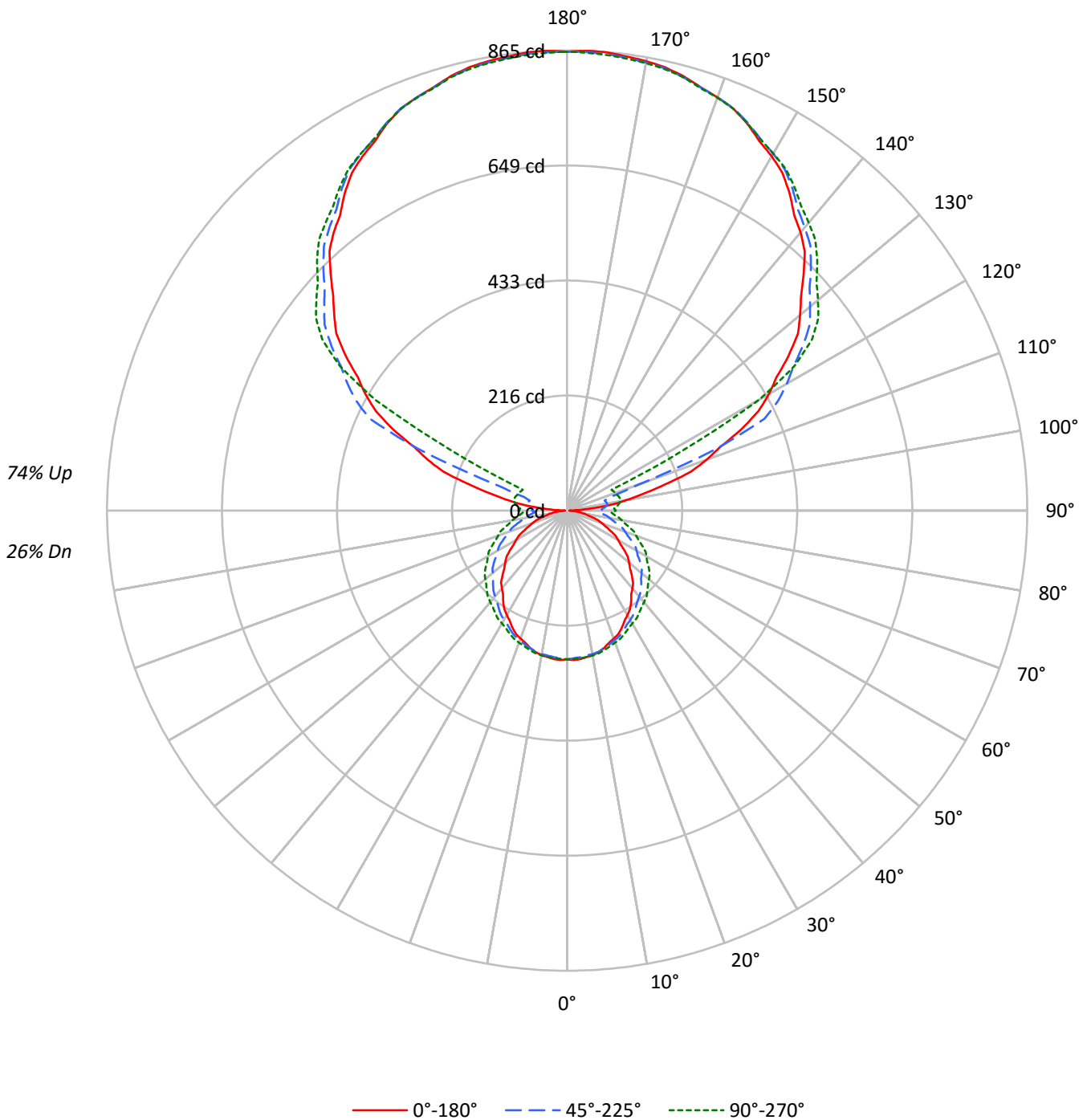
Input Watts (W): 30.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331473-940

CATALOG NUMBER: S122DIW-S290D710U940-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P331473-940

CATALOG NUMBER: S122DIW-S290D710U940-4F0-1E-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°	4514	4514	4514
5°	4536	4345	4328
10°	4507	4215	4169
15°	4443	4079	4001
20°	4366	3935	3839
25°	4289	3793	3693
30°	4180	3650	3544
35°	4070	3510	3442
40°	3952	3391	3338
45°	3841	3286	3250
50°	3723	3189	3162
55°	3597	3086	3074
60°	3447	2979	2980
65°	3288	2854	2867
70°	3108	2717	2746
75°	2883	2585	2636
80°	2528	2450	2524
85°	2185	2333	2436



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	26.5	0.7
10°-20°	75.9	2.1
20°-30°	115.1	3.2
30°-40°	140.2	3.9
40°-50°	150.8	4.2
50°-60°	146.5	4.1
60°-70°	127.9	3.6
70°-80°	98.4	2.7
80°-90°	68.2	1.9
90°-100°	74.3	2.1
100°-110°	138.8	3.9
110°-120°	304.0	8.5
120°-130°	477.9	13.3
130°-140°	500.4	13.9
140°-150°	461.2	12.8
150°-160°	370.1	10.3
160°-170°	238.5	6.6
170°-180°	82.1	2.3
0°-30°	217.5	6.0
0°-40°	357.7	9.9
0°-60°	654.9	18.2
0°-90°	949.5	26.4
90°-120°	517.1	14.4
90°-150°	1956.5	54.4
90°-180°	2647.0	73.6
0°-180°	3596.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	280	280	280	280	280	
5°	280	279	277	279	279	27
15°	267	268	268	272	271	75
25°	243	246	250	254	256	112
35°	210	216	224	233	236	131
45°	172	183	197	209	214	133
55°	132	147	167	181	187	118
65°	90	110	134	150	156	89
75°	50	73	98	115	121	53
85°	15	40	66	82	88	16
90°	5	35	66	85	91	5
95°	44	44	71	89	94	52
105°	192	212	73	93	101	205
115°	360	377	410	146	92	355
125°	508	517	541	556	562	453
135°	628	638	648	662	665	485
145°	728	728	738	745	744	456
155°	802	797	804	807	803	369
165°	845	842	843	847	843	239
175°	865	860	862	865	860	82
180°	863	863	863	863	863	



TEST NUMBER: P331473-940

CATALOG NUMBER: S122DIW-S290D710U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6
2.5°	281.2	280.9	280.7	280.4	280.3	279.9	279.4	278.9	278.4	277.9	278.2
5°	280.4	280.1	279.8	279.6	279.2	278.8	278.3	277.8	277.2	276.7	277.2
7.5°	277.8	277.6	277.4	277.2	277.1	276.8	276.3	276.0	275.5	275.1	275.8
10°	275.9	275.7	275.5	275.4	275.2	274.9	274.6	274.4	274.1	273.8	274.6
12.5°	272.6	272.7	272.7	272.8	272.8	272.7	272.5	272.3	272.1	271.9	272.6
15°	267.3	267.5	267.7	267.9	268.0	268.1	268.1	268.1	268.1	268.1	268.9
17.5°	260.6	260.9	261.3	261.7	262.1	262.4	262.7	263.0	263.2	263.6	264.4
20°	256.0	256.5	256.9	257.3	257.8	258.2	258.6	259.0	259.3	259.7	260.6
22.5°	251.2	251.6	252.2	252.7	253.2	253.8	254.2	254.8	255.3	255.7	256.7
25°	243.1	243.7	244.3	245.0	245.6	246.3	247.1	247.9	248.7	249.5	250.6
27.5°	233.4	234.3	235.4	236.4	237.5	238.4	239.3	240.3	241.3	242.3	243.6
30°	226.9	228.0	229.2	230.3	231.5	232.7	233.9	235.1	236.2	237.4	238.8
32.5°	219.7	221.1	222.3	223.6	225.0	226.3	227.7	229.1	230.5	231.8	233.5
35°	209.5	211.0	212.5	214.0	215.5	217.1	218.9	220.6	222.3	224.0	226.0
37.5°	198.2	200.0	201.8	203.6	205.3	207.3	209.6	211.7	213.9	216.2	218.4
40°	190.8	192.8	194.7	196.7	198.7	200.9	203.3	205.8	208.2	210.6	212.9
42.5°	183.7	185.7	187.6	189.6	191.6	193.9	196.8	199.6	202.3	205.1	207.7
45°	171.7	174.2	176.6	179.1	181.5	184.2	187.4	190.6	193.7	196.9	199.7
47.5°	160.0	162.6	165.3	167.9	170.6	173.8	177.5	181.1	184.9	188.5	191.5
50°	151.9	154.7	157.5	160.2	163.1	166.5	170.6	174.6	178.6	182.7	185.7
52.5°	144.1	147.0	150.0	152.9	155.9	159.4	163.7	168.0	172.3	176.6	179.7
55°	131.6	134.9	138.1	141.3	144.6	148.6	153.3	157.9	162.6	167.3	170.6
57.5°	119.3	123.0	126.6	130.3	133.9	138.1	142.9	147.7	152.5	157.3	160.8
60°	110.6	114.5	118.3	122.2	126.1	130.5	135.7	140.8	146.0	151.1	154.5
62.5°	102.8	106.8	110.8	114.9	118.9	123.4	128.6	133.7	138.8	144.0	147.6
65°	89.9	94.3	98.7	103.2	107.5	112.4	117.7	123.1	128.4	133.7	137.4
67.5°	78.1	82.8	87.3	91.9	96.6	101.6	107.0	112.4	117.9	123.3	127.1
70°	69.6	74.4	79.0	83.7	88.4	93.5	99.1	104.7	110.3	115.8	119.8
72.5°	61.9	66.7	71.5	76.3	81.2	86.4	92.1	97.7	103.4	109.1	112.9
75°	49.8	54.8	59.9	64.9	70.0	75.3	81.1	86.9	92.6	98.4	102.3
77.5°	38.2	43.4	48.7	53.9	59.3	64.8	70.7	76.5	82.4	88.2	92.1
80°	30.4	35.8	41.4	46.8	52.3	58.1	63.8	69.7	75.5	81.4	85.2
82.5°	23.9	29.3	34.8	40.1	45.6	51.3	57.2	63.1	69.0	74.9	78.7
85°	14.6	20.2	25.8	31.3	36.9	42.5	48.3	54.1	59.8	65.6	69.4
87.5°	8.0	13.7	19.4	25.1	30.8	36.6	42.5	48.5	54.5	60.5	64.3
90°	4.6	11.4	18.2	24.9	31.7	38.4	45.3	52.3	59.1	66.0	70.3
92.5°	16.3	21.0	25.8	30.5	35.2	40.7	46.7	52.9	58.9	65.0	68.9
95°	43.8	43.4	43.2	42.8	42.4	45.5	51.8	58.2	64.6	70.9	75.1
97.5°	83.4	74.2	65.1	55.9	46.8	45.9	53.4	60.8	68.2	75.7	79.5
100°	113.3	97.6	81.9	66.3	50.6	46.5	53.9	61.3	68.7	76.1	80.5
102.5°	146.0	145.0	144.0	143.0	142.0	134.1	119.3	104.5	89.6	74.8	79.5
105°	191.8	198.6	205.4	212.1	218.9	205.7	172.5	139.3	106.1	72.9	77.6
107.5°	244.5	249.9	255.4	260.8	266.3	248.5	207.6	166.7	125.7	84.8	86.3
110°	278.1	282.9	287.6	292.3	297.0	281.5	245.8	210.2	174.5	138.8	127.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	310.1	314.2	318.3	322.4	326.5	325.7	319.9	314.2	308.5	302.8	255.1
115°	360.5	363.9	367.3	370.6	374.0	379.4	386.9	394.4	402.0	409.5	347.9
117.5°	405.2	408.5	411.8	415.1	418.4	423.0	429.2	435.3	441.5	447.5	434.7
120°	438.2	440.6	443.1	445.5	447.9	452.2	458.3	464.4	470.6	476.6	480.8
122.5°	466.2	468.5	470.8	473.1	475.5	479.7	485.8	492.0	498.0	504.2	507.6
125°	508.4	510.1	511.9	513.7	515.5	519.2	524.7	530.2	535.7	541.3	544.7
127.5°	546.9	548.8	550.7	552.6	554.6	557.6	562.0	566.2	570.5	574.8	578.5
130°	571.4	573.5	575.6	577.7	579.9	582.6	586.1	589.5	592.9	596.3	600.0
132.5°	596.4	598.2	599.9	601.7	603.5	605.9	608.9	611.9	614.8	617.9	621.3
135°	628.4	630.6	632.8	635.1	637.3	639.4	641.6	643.7	645.9	648.1	651.3
137.5°	661.2	662.8	664.3	665.8	667.4	669.1	670.8	672.7	674.5	676.3	679.3
140°	682.7	683.8	684.7	685.7	686.8	688.1	689.8	691.5	693.3	695.0	697.7
142.5°	700.7	701.6	702.5	703.4	704.4	705.7	707.5	709.3	711.1	712.8	715.1
145°	728.5	728.3	728.3	728.1	727.9	729.1	731.4	733.8	736.1	738.5	740.0
147.5°	753.0	752.6	752.1	751.5	751.0	751.9	754.2	756.5	758.8	761.2	762.0
150°	769.1	768.1	767.1	766.2	765.2	765.8	768.0	770.3	772.5	774.7	775.5
152.5°	782.6	781.5	780.4	779.3	778.2	778.7	780.9	782.9	785.1	787.2	788.0
155°	802.2	800.9	799.7	798.4	797.2	797.4	799.1	800.7	802.4	804.1	804.9
157.5°	817.5	816.5	815.4	814.3	813.3	813.3	814.5	815.6	816.8	818.0	818.9
160°	826.5	825.6	824.8	824.0	823.1	823.1	824.0	824.8	825.6	826.5	827.3
162.5°	834.5	833.7	832.9	832.0	831.2	831.1	831.8	832.6	833.3	834.0	834.9
165°	845.3	844.4	843.6	842.8	841.9	841.7	842.1	842.5	842.9	843.4	844.4
167.5°	853.2	852.4	851.6	850.7	849.9	849.7	850.1	850.4	850.9	851.2	852.2
170°	857.7	856.8	856.0	855.2	854.3	854.1	854.3	854.7	855.0	855.2	856.2
172.5°	860.7	859.9	859.1	858.2	857.4	857.1	857.4	857.6	857.9	858.2	859.2
175°	864.6	863.6	862.6	861.7	860.7	860.3	860.6	860.9	861.2	861.5	862.5
177.5°	865.2	864.4	863.6	862.9	862.1	861.7	861.8	862.0	862.1	862.2	863.0
180°	862.7	862.7	862.7	862.7	862.7	862.7	862.7	862.7	862.7	862.7	862.7



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CATALOG NUMBER: S122DIW-S290D710U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6
2.5°	278.6	278.9	279.3	279.5	279.3	279.1	279.0	278.8
5°	277.8	278.3	278.8	279.0	278.9	278.8	278.7	278.7
7.5°	276.4	277.1	277.8	278.0	277.9	277.9	277.8	277.7
10°	275.3	276.0	276.7	277.1	277.0	276.9	276.8	276.7
12.5°	273.3	274.0	274.7	275.1	275.0	274.9	274.8	274.7
15°	269.7	270.6	271.4	271.8	271.7	271.6	271.5	271.4
17.5°	265.3	266.1	266.9	267.3	267.3	267.3	267.3	267.3
20°	261.6	262.6	263.6	264.1	264.1	264.1	264.1	264.1
22.5°	257.8	258.8	259.8	260.3	260.5	260.6	260.7	260.9
25°	251.7	252.8	253.9	254.5	254.8	255.0	255.3	255.6
27.5°	245.0	246.4	247.7	248.5	248.7	248.9	249.1	249.3
30°	240.2	241.7	243.2	244.0	244.2	244.5	244.8	245.0
32.5°	235.1	236.8	238.5	239.6	240.0	240.6	241.0	241.5
35°	228.0	230.0	231.9	233.3	233.9	234.5	235.1	235.8
37.5°	220.5	222.7	225.0	226.4	227.0	227.7	228.4	229.0
40°	215.3	217.7	220.0	221.6	222.4	223.2	224.0	224.8
42.5°	210.3	212.8	215.3	217.0	217.8	218.6	219.5	220.3
45°	202.4	205.3	208.0	209.9	210.8	211.7	212.6	213.5
47.5°	194.4	197.2	200.2	202.2	203.1	204.1	205.1	206.1
50°	188.8	191.9	194.9	197.0	198.0	198.9	199.9	200.9
52.5°	182.8	185.9	189.0	191.2	192.3	193.3	194.4	195.4
55°	173.8	177.0	180.3	182.4	183.6	184.9	186.0	187.2
57.5°	164.3	167.7	171.2	173.5	174.8	175.9	177.1	178.3
60°	157.9	161.4	164.8	167.1	168.4	169.6	170.9	172.2
62.5°	151.2	154.9	158.5	161.0	162.1	163.3	164.5	165.7
65°	141.1	144.7	148.5	150.9	152.0	153.2	154.4	155.5
67.5°	130.7	134.5	138.2	140.7	141.9	143.1	144.4	145.6
70°	123.6	127.4	131.3	133.8	134.9	136.0	137.1	138.1
72.5°	116.6	120.5	124.2	126.8	128.0	129.4	130.7	132.0
75°	106.2	110.0	114.0	116.5	117.6	118.8	119.9	121.1
77.5°	95.9	99.8	103.6	106.2	107.5	108.7	109.9	111.2
80°	89.0	92.7	96.6	99.1	100.3	101.6	102.8	104.1
82.5°	82.5	86.3	90.1	92.6	93.7	95.0	96.1	97.3
85°	73.2	77.0	80.8	83.3	84.5	85.8	87.0	88.3
87.5°	68.1	72.0	75.8	78.3	79.5	80.7	81.9	83.1
90°	74.5	78.8	83.1	86.0	87.3	88.6	90.1	91.4
92.5°	72.9	76.7	80.6	83.2	84.4	85.7	86.9	88.2
95°	79.2	83.3	87.4	89.9	90.9	91.8	92.7	93.7
97.5°	83.5	87.4	91.2	93.8	95.1	96.2	97.5	98.7
100°	85.0	89.4	93.8	96.8	98.0	99.2	100.5	101.7
102.5°	84.3	88.9	93.6	96.7	98.1	99.4	100.8	102.2
105°	82.3	86.9	91.6	94.7	96.3	97.8	99.3	100.9
107.5°	87.7	89.3	90.7	92.2	93.7	95.3	96.8	98.4
110°	116.8	105.8	94.9	90.2	91.7	93.2	94.8	96.3





TEST NUMBER: P331473-940

CATALOG NUMBER: S122DIW-S290D710U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	207.4	159.7	111.9	88.8	90.2	91.7	93.1	94.5
115°	286.4	224.9	163.4	128.0	119.1	110.1	101.1	92.1
117.5°	421.9	408.9	396.1	373.7	341.8	309.9	278.0	246.1
120°	485.0	489.2	493.4	486.6	468.9	451.1	433.4	415.6
122.5°	511.0	514.4	517.9	518.3	515.5	512.6	509.9	507.1
125°	548.0	551.4	554.8	557.1	558.4	559.6	560.9	562.0
127.5°	582.1	585.8	589.4	591.7	592.5	593.4	594.2	595.1
130°	603.7	607.3	611.1	613.2	613.8	614.4	614.9	615.5
132.5°	624.6	628.0	631.4	633.4	634.0	634.5	635.2	635.7
135°	654.6	657.9	661.2	663.0	663.4	663.9	664.3	664.8
137.5°	682.3	685.4	688.3	689.9	690.1	690.2	690.4	690.5
140°	700.3	703.0	705.7	707.0	706.9	706.7	706.5	706.4
142.5°	717.4	719.7	721.9	723.0	722.7	722.6	722.3	722.1
145°	741.5	743.0	744.5	745.2	744.9	744.7	744.4	744.2
147.5°	762.8	763.6	764.4	764.6	764.2	763.8	763.5	763.1
150°	776.3	777.2	778.0	778.1	777.4	776.7	776.0	775.3
152.5°	788.8	789.7	790.5	790.5	789.5	788.6	787.7	786.8
155°	805.7	806.6	807.4	807.2	806.1	805.0	803.9	802.8
157.5°	819.9	820.8	821.8	821.7	820.6	819.6	818.5	817.3
160°	828.1	829.0	829.8	829.7	828.8	827.8	826.9	825.9
162.5°	835.9	836.8	837.8	837.7	836.4	835.3	834.0	832.9
165°	845.3	846.2	847.2	847.2	846.2	845.3	844.4	843.4
167.5°	853.2	854.2	855.1	855.0	853.7	852.5	851.2	850.0
170°	857.2	858.1	859.1	859.0	857.7	856.5	855.2	854.0
172.5°	860.1	861.1	862.1	861.9	860.7	859.4	858.2	856.9
175°	863.4	864.3	865.3	865.1	863.7	862.4	860.9	859.6
177.5°	863.8	864.5	865.3	865.2	864.2	863.2	862.2	861.2
180°	862.7	862.7	862.7	862.7	862.7	862.7	862.7	862.7

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