

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: P331474-940

Luminaire Tested: **S122DIW-S290D710U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331474-940  
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-S290D710U940-4F0-1E-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: 3262.0 lumens  
Efficiency: N/A  
Efficacy: 107.3 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

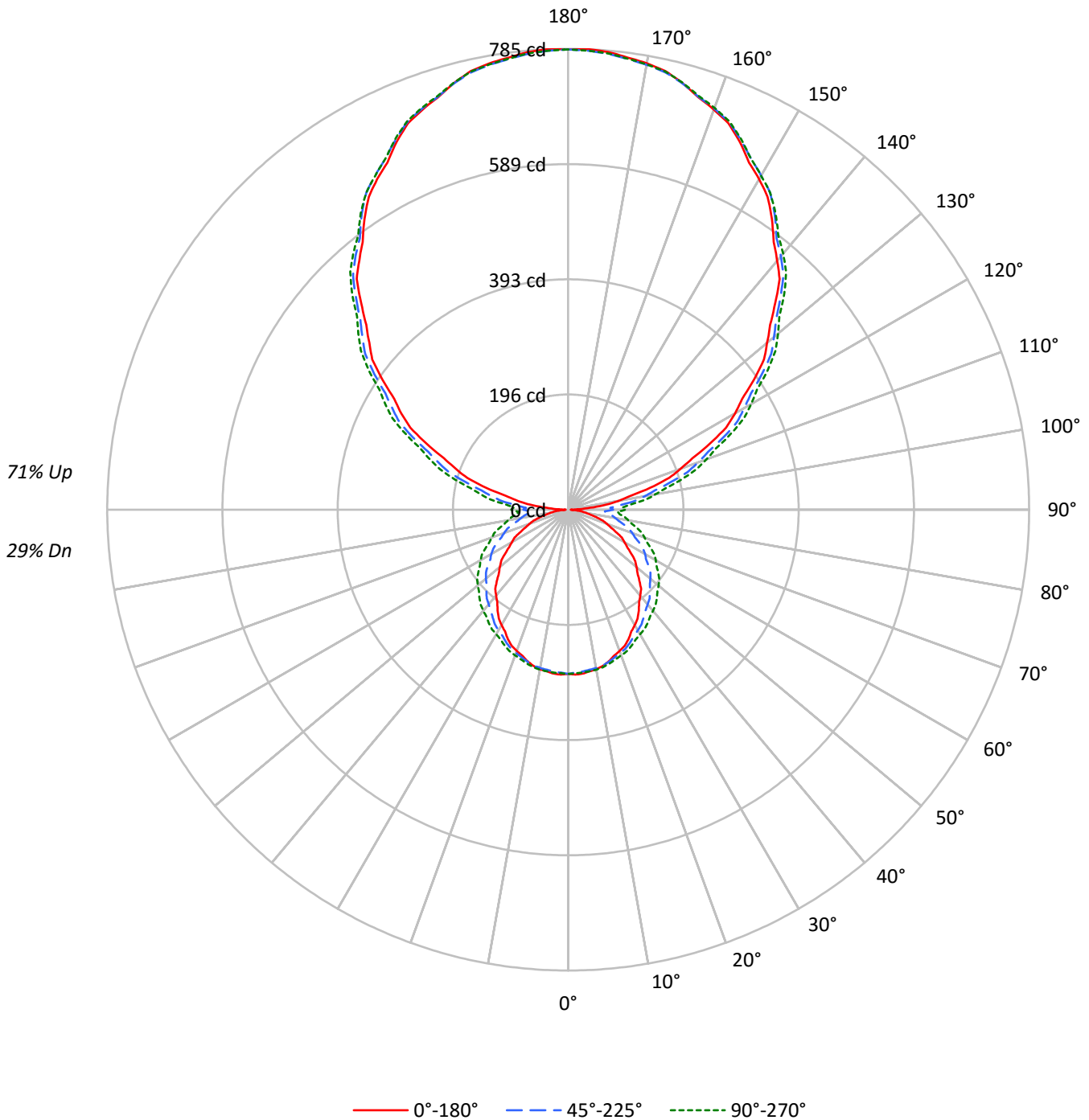
Input Watts (W): 30.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### 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°	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	0.8
10°-20°	75.9	2.3
20°-30°	115.1	3.5
30°-40°	140.2	4.3
40°-50°	150.8	4.6
50°-60°	146.5	4.5
60°-70°	127.9	3.9
70°-80°	98.4	3.0
80°-90°	69.2	2.1
90°-100°	95.2	2.9
100°-110°	187.6	5.7
110°-120°	285.7	8.8
120°-130°	359.1	11.0
130°-140°	394.5	12.1
140°-150°	382.6	11.7
150°-160°	320.2	9.8
160°-170°	212.4	6.5
170°-180°	74.2	2.3
0°-30°	217.5	6.7
0°-40°	357.7	11.0
0°-60°	654.9	20.1
0°-90°	950.5	29.1
90°-120°	568.5	17.4
90°-150°	1704.7	52.3
90°-180°	2312.0	70.9
0°-180°	3262.0	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	37	77	91	97	5
95°	38	63	89	104	108	42
105°	144	158	180	195	200	153
115°	266	275	292	303	306	263
125°	386	392	403	411	415	345
135°	499	506	511	519	520	385
145°	605	609	613	616	616	378
155°	691	693	695	698	697	318
165°	752	752	752	756	753	212
175°	783	781	779	784	780	74
180°	784	784	784	784	784	



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**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°	8.1	13.8	19.5	25.2	30.9	37.0	43.4	49.8	56.3	62.6	66.3
90°	4.7	11.7	18.7	25.7	32.6	40.7	49.7	58.7	67.6	76.6	79.9
92.5°	15.5	21.7	27.8	34.0	40.1	46.4	52.7	58.9	65.3	71.6	75.2
95°	37.6	43.3	49.0	54.8	60.5	66.2	71.9	77.6	83.2	88.9	92.4
97.5°	65.7	70.7	75.8	80.9	86.0	91.3	97.1	102.8	108.5	114.3	117.6
100°	86.9	91.4	95.9	100.4	104.9	109.9	115.4	120.8	126.4	131.8	135.2
102.5°	108.8	112.8	116.7	120.7	124.8	129.5	134.9	140.4	145.8	151.2	154.6
105°	144.3	147.3	150.4	153.5	156.5	160.5	165.5	170.5	175.4	180.4	183.9
107.5°	180.5	183.2	185.9	188.7	191.5	195.0	199.5	204.0	208.5	212.9	216.1
110°	203.4	206.2	208.8	211.5	214.2	217.8	222.1	226.5	231.0	235.3	238.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	228.8	231.2	233.6	236.0	238.4	241.7	245.8	249.9	253.9	258.0	260.5
115°	266.3	268.1	270.0	271.9	273.8	276.6	280.4	284.1	287.8	291.6	294.2
117.5°	303.2	305.1	306.8	308.7	310.5	312.9	315.8	318.7	321.6	324.6	326.9
120°	328.1	329.7	331.2	332.7	334.2	336.2	338.7	341.1	343.5	345.9	348.5
122.5°	350.9	352.4	354.0	355.5	357.0	359.1	361.7	364.3	366.8	369.3	371.5
125°	385.9	387.3	388.6	389.9	391.2	393.1	395.6	398.0	400.4	402.9	404.8
127.5°	420.4	422.0	423.7	425.3	426.8	428.5	430.3	432.0	433.9	435.7	437.4
130°	442.2	444.0	445.8	447.6	449.4	451.1	452.7	454.3	455.9	457.5	459.4
132.5°	466.5	468.0	469.5	470.9	472.4	473.9	475.4	476.9	478.4	479.9	481.3
135°	498.6	500.2	501.9	503.5	505.2	506.6	507.7	508.9	510.1	511.3	513.1
137.5°	533.0	534.2	535.6	536.8	538.1	539.2	540.0	540.7	541.5	542.3	543.9
140°	553.6	554.8	556.1	557.3	558.5	559.5	560.5	561.4	562.3	563.3	564.7
142.5°	574.8	576.0	577.2	578.5	579.7	580.6	581.1	581.7	582.2	582.7	584.0
145°	604.8	605.8	606.8	607.9	608.9	609.8	610.7	611.6	612.5	613.4	614.1
147.5°	632.0	633.1	634.4	635.6	636.9	637.8	638.4	638.9	639.5	640.2	640.5
150°	650.4	651.3	652.2	653.1	654.0	654.7	655.3	655.9	656.5	657.1	657.5
152.5°	666.8	667.7	668.6	669.5	670.4	671.2	671.9	672.6	673.3	674.0	674.6
155°	691.4	691.9	692.3	692.8	693.2	693.7	694.1	694.6	695.0	695.4	696.2
157.5°	712.5	712.8	713.1	713.4	713.7	714.0	714.3	714.5	714.8	715.1	716.0
160°	725.2	725.5	725.8	726.1	726.4	726.7	726.7	726.9	727.0	727.2	728.1
162.5°	736.8	736.9	737.0	737.0	737.1	737.2	737.4	737.5	737.6	737.8	738.8
165°	752.3	752.2	752.1	751.9	751.8	751.7	751.7	751.7	751.7	751.7	752.7
167.5°	765.4	764.9	764.5	764.0	763.6	763.3	763.3	763.2	763.2	763.2	764.2
170°	772.2	771.8	771.3	770.9	770.4	770.2	770.0	769.8	769.7	769.5	770.6
172.5°	776.9	776.5	776.1	775.6	775.2	774.9	774.7	774.6	774.5	774.3	775.3
175°	782.7	782.4	781.9	781.5	781.0	780.7	780.3	780.1	779.8	779.4	780.5
177.5°	785.2	784.8	784.4	784.1	783.7	783.5	783.2	783.0	782.7	782.5	783.2
180°	784.1	784.1	784.1	784.1	784.1	784.1	784.1	784.1	784.1	784.1	784.1



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**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°	69.9	73.5	77.1	79.5	80.7	81.9	83.0	84.2
90°	83.3	86.6	89.9	92.1	93.4	94.6	95.8	97.0
92.5°	78.7	82.4	86.0	88.3	89.4	90.5	91.7	92.7
95°	95.8	99.2	102.6	104.7	105.5	106.3	107.1	107.9
97.5°	121.0	124.3	127.6	129.8	130.8	131.9	132.9	133.9
100°	138.5	141.8	145.2	147.2	148.1	148.9	149.7	150.6
102.5°	158.0	161.4	164.8	166.8	167.7	168.5	169.4	170.2
105°	187.3	190.7	194.2	196.4	197.4	198.4	199.4	200.4
107.5°	219.3	222.4	225.5	227.2	227.6	227.9	228.2	228.5
110°	241.1	244.0	246.9	248.6	249.1	249.7	250.2	250.7





TEST NUMBER: P331474-940

CATALOG NUMBER: S122DIW-S290D710U940-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	263.1	265.6	268.0	269.7	270.4	271.0	271.7	272.3
115°	296.8	299.3	301.8	303.4	304.0	304.5	305.1	305.6
117.5°	329.2	331.5	333.9	335.2	335.7	336.2	336.6	337.2
120°	351.0	353.5	356.0	357.6	358.1	358.6	359.2	359.7
122.5°	373.5	375.7	377.7	379.1	379.6	380.1	380.7	381.2
125°	406.8	408.8	410.8	412.1	412.8	413.5	414.1	414.8
127.5°	439.1	440.8	442.5	443.4	443.8	444.2	444.4	444.8
130°	461.3	463.2	465.0	466.0	466.1	466.3	466.4	466.5
132.5°	482.9	484.3	485.7	486.5	486.8	487.1	487.3	487.6
135°	514.8	516.6	518.3	519.3	519.6	519.9	520.1	520.4
137.5°	545.4	546.9	548.5	549.3	549.3	549.3	549.3	549.4
140°	566.1	567.6	569.0	569.7	569.6	569.6	569.5	569.5
142.5°	585.2	586.6	587.8	588.4	588.3	588.2	588.0	587.9
145°	614.7	615.5	616.2	616.4	616.3	616.2	616.0	615.9
147.5°	640.9	641.3	641.7	641.8	641.4	641.1	640.7	640.3
150°	657.9	658.4	658.8	658.8	658.4	657.9	657.5	657.1
152.5°	675.1	675.6	676.3	676.3	675.6	675.1	674.6	674.0
155°	696.9	697.7	698.4	698.6	698.1	697.7	697.2	696.8
157.5°	717.0	718.0	719.0	719.2	718.5	717.7	717.0	716.3
160°	729.0	729.9	730.8	730.8	730.3	729.7	729.2	728.5
162.5°	739.8	740.8	741.8	741.9	741.2	740.6	739.9	739.1
165°	753.8	754.7	755.8	756.0	755.2	754.5	753.8	753.0
167.5°	765.3	766.2	767.3	767.4	766.7	765.9	765.2	764.4
170°	771.6	772.7	773.6	773.7	772.8	772.0	771.1	770.2
172.5°	776.4	777.4	778.5	778.5	777.7	776.8	775.9	775.0
175°	781.5	782.6	783.6	783.6	782.7	781.9	781.0	780.2
177.5°	783.9	784.6	785.3	785.3	784.6	783.9	783.2	782.5
180°	784.1	784.1	784.1	784.1	784.1	784.1	784.1	784.1

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