

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: P331473-840

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331473-840
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-S290D710U840-4F0-1E-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: 4073.2 lumens
Efficiency: N/A
Efficacy: 134.0 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

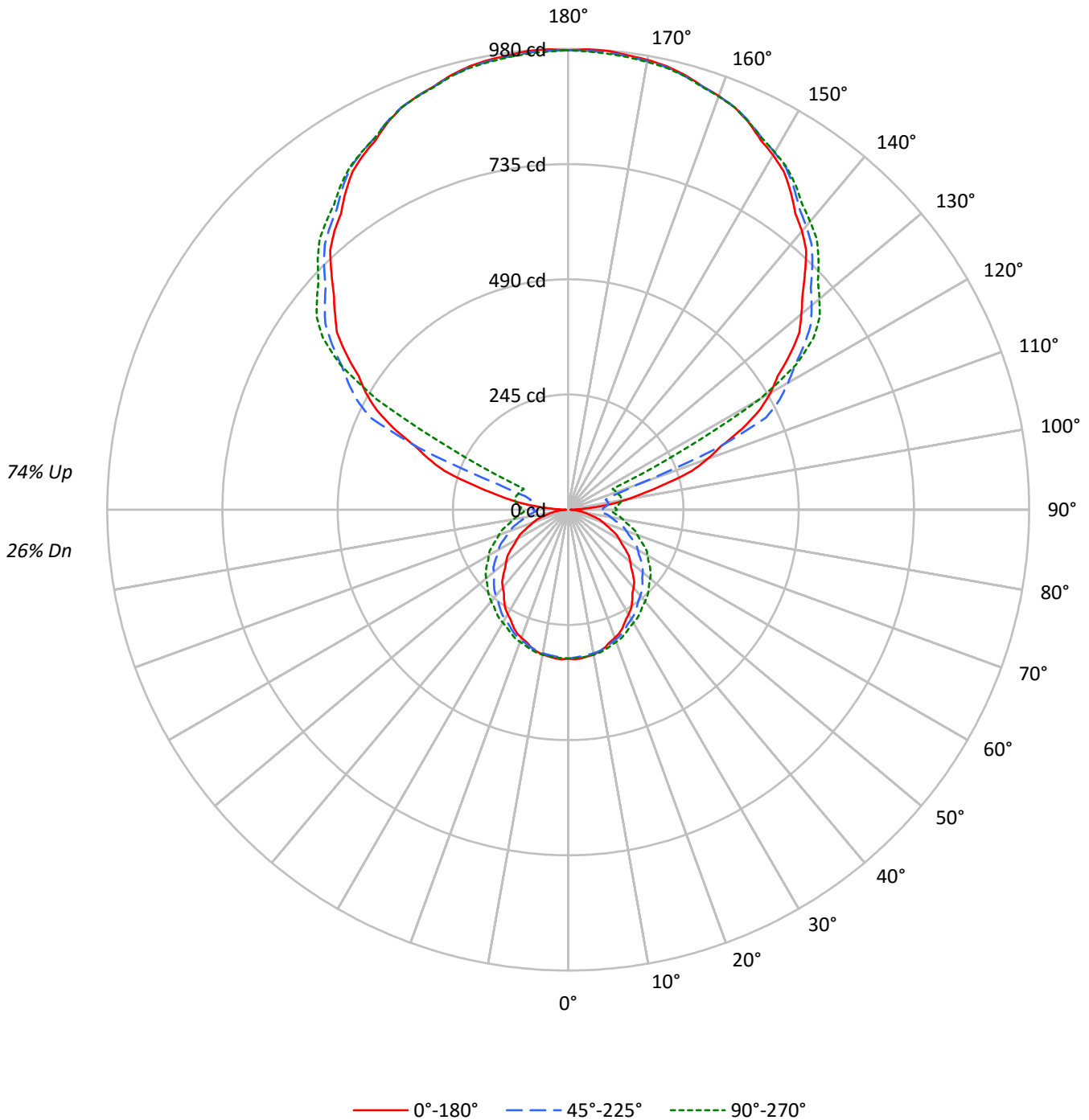
Input Watts (W): 30.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P331473-840

CATALOG NUMBER: S122DIW-S290D710U840-4F0-1E-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°	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



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.0	0.7
10°-20°	86.0	2.1
20°-30°	130.3	3.2
30°-40°	158.8	3.9
40°-50°	170.8	4.2
50°-60°	165.9	4.1
60°-70°	144.8	3.6
70°-80°	111.5	2.7
80°-90°	77.2	1.9
90°-100°	84.1	2.1
100°-110°	157.1	3.9
110°-120°	344.3	8.5
120°-130°	541.2	13.3
130°-140°	566.7	13.9
140°-150°	522.3	12.8
150°-160°	419.1	10.3
160°-170°	270.1	6.6
170°-180°	93.0	2.3
0°-30°	246.3	6.0
0°-40°	405.1	9.9
0°-60°	741.7	18.2
0°-90°	1075.3	26.4
90°-120°	585.6	14.4
90°-150°	2215.8	54.4
90°-180°	2998.0	73.6
0°-180°	4073.2	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	40	75	96	104	5
95°	50	50	80	100	106	59
105°	217	240	83	105	114	232
115°	408	427	464	165	104	402
125°	576	586	613	630	636	513
135°	712	723	734	750	753	550
145°	825	825	836	844	843	516
155°	908	903	911	914	909	418
165°	957	953	955	960	955	270
175°	979	974	976	980	974	93
180°	977	977	977	977	977	



TEST NUMBER: P331473-840

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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°	9.1	15.6	22.0	28.4	34.8	41.4	48.2	54.9	61.7	68.6	72.8
90°	5.3	12.9	20.6	28.2	35.9	43.5	51.3	59.2	67.0	74.7	79.6
92.5°	18.5	23.8	29.2	34.5	39.9	46.0	52.9	59.9	66.8	73.6	78.1
95°	49.6	49.2	48.9	48.5	48.1	51.5	58.7	65.9	73.1	80.3	85.0
97.5°	94.4	84.0	73.7	63.3	53.0	52.0	60.5	68.9	77.3	85.7	90.1
100°	128.4	110.6	92.8	75.1	57.4	52.6	61.0	69.4	77.8	86.1	91.2
102.5°	165.3	164.2	163.1	162.0	160.9	151.9	135.1	118.4	101.5	84.7	90.1
105°	217.2	224.9	232.6	240.2	247.9	233.0	195.3	157.7	120.2	82.6	87.9
107.5°	276.9	283.1	289.2	295.4	301.5	281.4	235.1	188.7	142.4	96.0	97.8
110°	315.0	320.3	325.7	331.0	336.4	318.8	278.4	238.0	197.6	157.2	144.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	351.2	355.9	360.5	365.2	369.7	368.8	362.3	355.9	349.4	343.0	288.9
115°	408.3	412.1	416.0	419.7	423.5	429.7	438.2	446.7	455.2	463.7	394.0
117.5°	458.9	462.6	466.4	470.1	473.8	479.1	486.0	493.0	500.0	506.9	492.3
120°	496.2	499.0	501.8	504.5	507.3	512.1	519.1	525.9	532.9	539.8	544.5
122.5°	528.0	530.6	533.2	535.8	538.5	543.3	550.2	557.1	564.0	571.0	574.8
125°	575.7	577.7	579.8	581.8	583.8	587.9	594.2	600.5	606.7	613.0	616.8
127.5°	619.4	621.6	623.7	625.8	628.0	631.5	636.4	641.3	646.1	651.0	655.1
130°	647.1	649.4	651.9	654.3	656.7	659.8	663.8	667.6	671.5	675.3	679.5
132.5°	675.4	677.4	679.4	681.5	683.5	686.2	689.5	693.0	696.3	699.7	703.6
135°	711.7	714.2	716.7	719.2	721.8	724.2	726.6	729.0	731.4	734.0	737.6
137.5°	748.8	750.6	752.3	754.1	755.8	757.7	759.7	761.8	763.9	765.9	769.3
140°	773.2	774.4	775.5	776.6	777.8	779.3	781.2	783.2	785.2	787.1	790.1
142.5°	793.6	794.6	795.6	796.6	797.7	799.2	801.2	803.2	805.3	807.3	809.8
145°	825.1	824.9	824.8	824.6	824.4	825.7	828.3	831.0	833.6	836.4	838.1
147.5°	852.8	852.3	851.7	851.1	850.5	851.5	854.1	856.8	859.4	862.0	862.9
150°	871.0	869.9	868.8	867.7	866.6	867.3	869.8	872.3	874.8	877.4	878.3
152.5°	886.3	885.0	883.8	882.5	881.3	881.9	884.3	886.7	889.1	891.5	892.4
155°	908.5	907.1	905.6	904.2	902.8	903.0	904.9	906.8	908.7	910.6	911.5
157.5°	925.8	924.6	923.4	922.2	921.1	921.1	922.4	923.7	925.0	926.3	927.5
160°	936.0	935.0	934.1	933.2	932.2	932.2	933.2	934.1	935.0	936.0	937.0
162.5°	945.0	944.1	943.2	942.2	941.3	941.2	942.0	942.9	943.7	944.5	945.5
165°	957.3	956.2	955.3	954.4	953.4	953.2	953.7	954.1	954.6	955.1	956.2
167.5°	966.2	965.3	964.4	963.4	962.5	962.3	962.7	963.1	963.6	964.0	965.1
170°	971.4	970.4	969.5	968.6	967.6	967.2	967.6	968.0	968.3	968.6	969.7
172.5°	974.7	973.8	972.9	971.9	971.0	970.7	971.0	971.3	971.6	971.9	973.0
175°	979.2	978.1	976.9	975.8	974.7	974.3	974.6	975.0	975.3	975.6	976.7
177.5°	979.9	979.0	978.1	977.2	976.3	975.9	976.0	976.2	976.3	976.4	977.3
180°	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0



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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°	77.2	81.5	85.8	88.7	90.0	91.4	92.7	94.1
90°	84.4	89.3	94.1	97.4	98.9	100.4	102.0	103.5
92.5°	82.5	86.8	91.3	94.2	95.6	97.0	98.5	99.9
95°	89.7	94.3	99.0	101.8	102.9	103.9	105.0	106.1
97.5°	94.5	99.0	103.3	106.2	107.7	109.0	110.4	111.8
100°	96.2	101.3	106.2	109.6	111.0	112.4	113.8	115.2
102.5°	95.4	100.7	106.0	109.5	111.1	112.6	114.1	115.7
105°	93.2	98.5	103.7	107.2	109.1	110.8	112.5	114.3
107.5°	99.4	101.1	102.7	104.4	106.1	108.0	109.7	111.4
110°	132.3	119.9	107.4	102.1	103.8	105.5	107.3	109.1



TEST NUMBER: P331473-840

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	234.9	180.9	126.7	100.6	102.2	103.8	105.4	107.0
115°	324.4	254.7	185.0	145.0	134.9	124.7	114.5	104.3
117.5°	477.8	463.1	448.6	423.2	387.1	350.9	314.9	278.7
120°	549.3	554.0	558.8	551.1	531.0	510.9	490.8	470.7
122.5°	578.8	582.6	586.5	586.9	583.8	580.6	577.4	574.3
125°	620.7	624.5	628.3	631.0	632.4	633.8	635.2	636.5
127.5°	659.2	663.4	667.5	670.0	671.1	672.1	673.0	674.0
130°	683.7	687.8	692.1	694.5	695.1	695.8	696.4	697.1
132.5°	707.4	711.2	715.1	717.3	718.0	718.6	719.3	719.9
135°	741.3	745.1	748.8	750.8	751.3	751.8	752.3	752.9
137.5°	772.7	776.2	779.5	781.3	781.5	781.6	781.8	781.9
140°	793.1	796.2	799.2	800.7	800.5	800.3	800.1	800.0
142.5°	812.4	815.1	817.6	818.8	818.5	818.3	818.0	817.8
145°	839.8	841.4	843.1	843.9	843.6	843.3	843.0	842.8
147.5°	863.8	864.7	865.7	865.9	865.5	865.1	864.6	864.2
150°	879.2	880.2	881.1	881.2	880.4	879.6	878.8	878.1
152.5°	893.3	894.3	895.2	895.2	894.1	893.1	892.1	891.0
155°	912.4	913.4	914.3	914.1	912.9	911.7	910.4	909.2
157.5°	928.6	929.6	930.7	930.6	929.4	928.2	927.0	925.6
160°	937.9	938.9	939.8	939.7	938.6	937.5	936.4	935.3
162.5°	946.6	947.7	948.8	948.7	947.3	945.9	944.5	943.2
165°	957.4	958.4	959.5	959.5	958.4	957.4	956.2	955.1
167.5°	966.2	967.3	968.4	968.3	966.8	965.4	964.0	962.6
170°	970.8	971.8	972.9	972.8	971.4	970.0	968.6	967.1
172.5°	974.1	975.2	976.3	976.1	974.7	973.3	971.9	970.5
175°	977.9	978.9	980.0	979.8	978.2	976.6	975.0	973.5
177.5°	978.3	979.1	980.0	979.9	978.8	977.5	976.4	975.3
180°	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0

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