

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: P331479-930

Luminaire Tested: **S122DIW-S290D970U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331479-930
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-S290D970U930-4F0-1E-UDD-D
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 970 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4132.8 lumens
Efficiency: N/A
Efficacy: 108.8 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

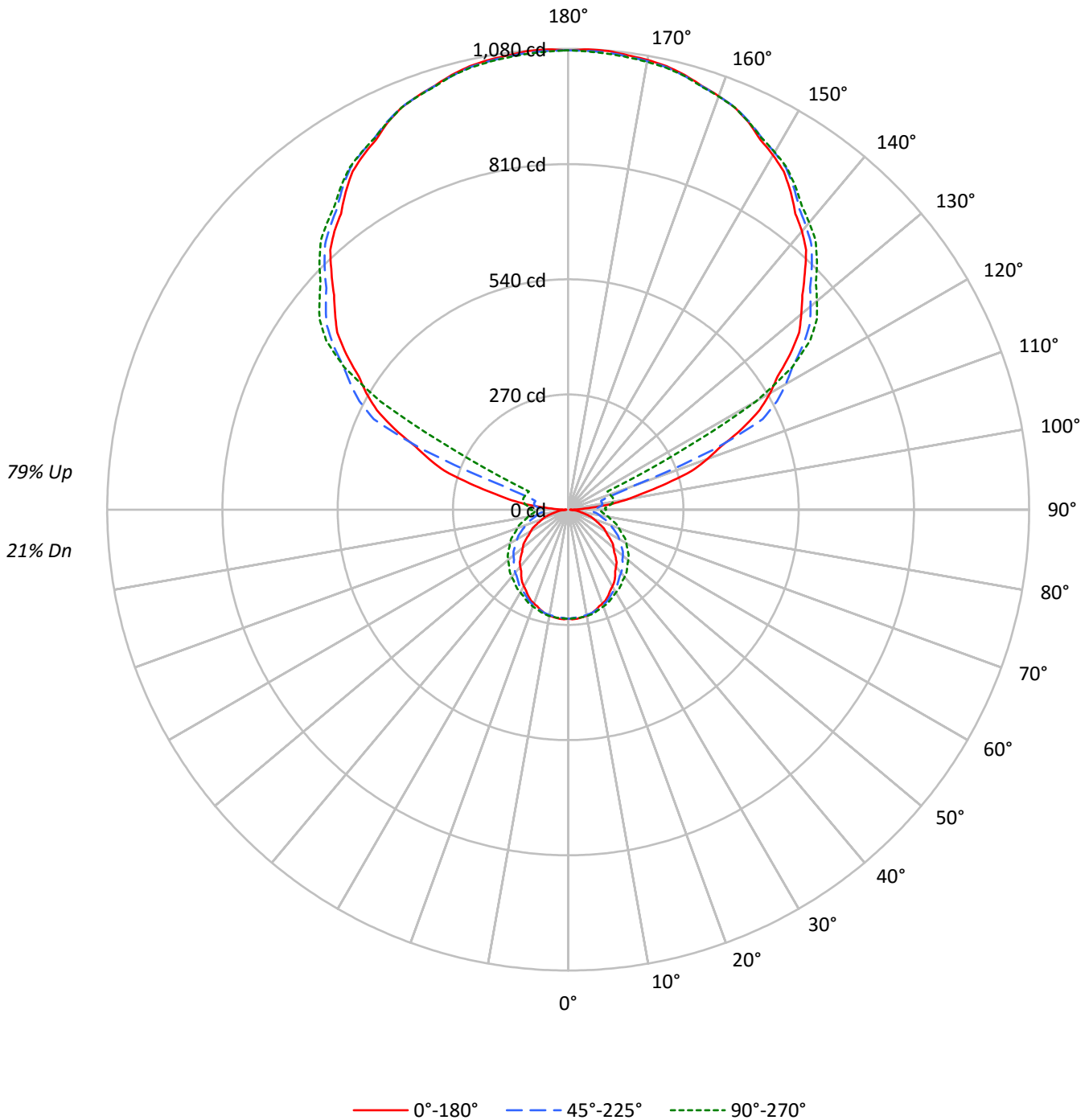
Input Watts (W): 38
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P331479-930

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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	100	100	100	100	89	89	89	89	67	67	67	48	48	48	30	30	30	21
1	91	86	82	79	80	76	73	70	58	56	54	41	39	38	25	24	24	16
2	82	75	69	64	72	66	61	57	50	47	44	35	33	31	22	20	19	13
3	75	66	58	53	66	58	52	47	44	40	36	31	28	26	19	17	16	11
4	68	58	50	44	60	51	45	40	39	34	31	27	24	22	17	15	14	9
5	62	51	43	37	55	45	39	34	35	30	26	24	21	19	15	13	12	8
6	57	46	38	32	50	41	34	29	31	26	23	22	19	16	14	12	10	7
7	53	41	33	28	46	36	30	25	28	23	20	20	17	14	12	10	9	6
8	49	37	29	24	43	33	26	22	25	21	17	18	15	13	11	9	8	5
9	45	34	26	21	40	30	24	19	23	18	15	16	13	11	10	8	7	5
10	42	31	24	19	37	27	21	17	21	17	14	15	12	10	10	8	6	4

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4127	4127	4127
5°	4146	3973	3957
10°	4121	3855	3812
15°	4063	3730	3659
20°	3992	3597	3511
25°	3922	3468	3376
30°	3821	3336	3241
35°	3720	3209	3148
40°	3615	3101	3051
45°	3512	3004	2971
50°	3404	2917	2891
55°	3289	2822	2810
60°	3151	2723	2724
65°	3006	2608	2622
70°	2844	2485	2512
75°	2639	2365	2410
80°	2312	2240	2305
85°	2005	2134	2226



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.2	0.6
10°-20°	69.4	1.7
20°-30°	105.2	2.5
30°-40°	128.2	3.1
40°-50°	137.9	3.3
50°-60°	133.9	3.2
60°-70°	116.9	2.8
70°-80°	90.0	2.2
80°-90°	63.1	1.5
90°-100°	77.5	1.9
100°-110°	162.1	3.9
110°-120°	372.1	9.0
120°-130°	592.3	14.3
130°-140°	622.7	15.1
140°-150°	575.2	13.9
150°-160°	461.8	11.2
160°-170°	297.6	7.2
170°-180°	102.4	2.5
0°-30°	198.9	4.8
0°-40°	327.1	7.9
0°-60°	598.8	14.5
0°-90°	868.8	21.0
90°-120°	611.7	14.8
90°-150°	2402.0	58.1
90°-180°	3264.0	79.0
0°-180°	4132.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	256	256	256	256	256	
5°	256	255	253	255	255	24
15°	244	245	245	248	248	69
25°	222	225	228	232	234	102
35°	192	198	205	213	216	120
45°	157	167	180	191	195	121
55°	120	134	153	166	171	108
65°	82	101	122	137	142	82
75°	46	66	90	105	111	48
85°	13	36	60	75	81	14
90°	4	34	64	82	89	5
95°	54	47	73	90	95	64
105°	239	260	79	100	108	255
115°	449	468	503	170	101	442
125°	634	645	671	686	692	565
135°	784	796	807	822	824	606
145°	909	909	922	929	927	569
155°	1001	995	1003	1007	1002	461
165°	1055	1051	1052	1057	1052	298
175°	1079	1074	1075	1080	1073	103
180°	1077	1077	1077	1077	1077	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6
2.5°	257.1	256.8	256.7	256.4	256.2	255.9	255.4	255.0	254.5	254.0	254.4
5°	256.3	256.1	255.8	255.6	255.3	254.9	254.5	254.0	253.5	253.0	253.5
7.5°	254.0	253.8	253.6	253.5	253.3	253.1	252.7	252.3	251.9	251.5	252.2
10°	252.3	252.1	251.9	251.8	251.6	251.4	251.1	250.9	250.6	250.4	251.0
12.5°	249.2	249.3	249.3	249.4	249.4	249.3	249.2	249.0	248.7	248.6	249.2
15°	244.4	244.6	244.8	244.9	245.1	245.2	245.2	245.2	245.2	245.2	245.9
17.5°	238.2	238.6	238.9	239.3	239.6	239.9	240.2	240.4	240.7	241.0	241.7
20°	234.1	234.5	234.9	235.3	235.7	236.1	236.4	236.8	237.1	237.4	238.3
22.5°	229.7	230.1	230.6	231.1	231.5	232.0	232.4	232.9	233.4	233.8	234.7
25°	222.3	222.8	223.4	224.0	224.5	225.2	225.9	226.7	227.4	228.1	229.1
27.5°	213.4	214.3	215.2	216.1	217.1	218.0	218.8	219.7	220.6	221.5	222.7
30°	207.4	208.5	209.5	210.6	211.7	212.8	213.9	214.9	216.0	217.0	218.3
32.5°	200.9	202.1	203.3	204.5	205.7	206.9	208.2	209.5	210.8	212.0	213.5
35°	191.5	192.9	194.3	195.7	197.1	198.5	200.2	201.7	203.3	204.8	206.6
37.5°	181.2	182.9	184.5	186.1	187.7	189.6	191.6	193.6	195.6	197.6	199.7
40°	174.5	176.3	178.1	179.9	181.6	183.7	185.9	188.2	190.4	192.6	194.7
42.5°	168.0	169.7	171.5	173.3	175.2	177.3	179.9	182.5	185.0	187.5	189.9
45°	157.0	159.2	161.5	163.7	165.9	168.4	171.4	174.2	177.1	180.0	182.5
47.5°	146.3	148.7	151.2	153.5	156.0	158.9	162.2	165.6	169.0	172.4	175.0
50°	138.9	141.5	144.0	146.5	149.1	152.2	156.0	159.6	163.3	167.1	169.8
52.5°	131.8	134.4	137.1	139.8	142.5	145.8	149.7	153.6	157.5	161.4	164.3
55°	120.3	123.4	126.3	129.2	132.2	135.8	140.1	144.4	148.7	153.0	156.0
57.5°	109.1	112.4	115.8	119.1	122.5	126.3	130.7	135.0	139.4	143.8	147.0
60°	101.1	104.7	108.2	111.7	115.3	119.4	124.1	128.7	133.5	138.1	141.3
62.5°	94.0	97.7	101.3	105.0	108.7	112.8	117.6	122.2	126.9	131.7	134.9
65°	82.2	86.3	90.3	94.3	98.3	102.8	107.6	112.5	117.4	122.2	125.6
67.5°	71.4	75.7	79.8	84.1	88.3	92.9	97.8	102.8	107.8	112.8	116.2
70°	63.7	68.0	72.2	76.6	80.8	85.5	90.6	95.7	100.9	105.9	109.5
72.5°	56.6	61.0	65.4	69.8	74.3	79.0	84.2	89.4	94.6	99.7	103.2
75°	45.6	50.1	54.8	59.4	64.0	68.9	74.2	79.5	84.7	90.0	93.5
77.5°	34.9	39.7	44.5	49.3	54.2	59.3	64.7	70.0	75.3	80.6	84.2
80°	27.8	32.8	37.8	42.8	47.9	53.1	58.4	63.8	69.1	74.4	77.9
82.5°	21.9	26.8	31.8	36.7	41.7	46.9	52.3	57.7	63.1	68.5	72.0
85°	13.4	18.4	23.6	28.6	33.8	38.9	44.2	49.5	54.7	60.0	63.4
87.5°	7.4	12.7	18.0	23.2	28.5	34.0	39.5	45.1	50.6	56.2	59.7
90°	4.5	11.2	17.9	24.5	31.2	37.8	44.5	51.2	57.8	64.5	68.6
92.5°	19.2	23.4	27.7	32.0	36.2	41.3	47.0	52.7	58.5	64.3	68.0
95°	53.6	51.8	49.9	48.1	46.2	48.3	54.5	60.7	66.9	73.0	77.0
97.5°	103.1	90.4	77.8	65.1	52.4	49.9	57.4	65.0	72.6	80.1	83.8
100°	140.5	119.8	99.1	78.4	57.8	51.2	58.8	66.4	73.9	81.4	85.9
102.5°	181.3	179.1	176.8	174.6	172.4	161.2	141.0	120.9	100.8	80.6	85.4
105°	238.7	246.3	253.8	261.4	269.0	251.3	208.3	165.3	122.4	79.4	84.1
107.5°	304.5	310.6	316.7	322.8	328.9	305.7	253.1	200.5	147.9	95.3	96.2
110°	346.6	351.9	357.2	362.5	367.7	347.4	301.3	255.4	209.4	163.4	148.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	386.5	391.1	395.7	400.3	404.9	402.9	394.4	385.9	377.3	368.8	308.3
115°	449.4	453.3	457.1	461.0	464.8	470.8	478.8	486.8	494.9	502.9	425.2
117.5°	505.3	509.2	513.1	517.0	520.8	525.9	532.4	538.7	545.2	551.5	534.6
120°	546.4	549.3	552.3	555.2	558.2	562.8	569.2	575.6	582.0	588.5	592.8
122.5°	581.3	584.2	587.1	590.0	592.8	597.5	604.0	610.5	616.9	623.5	627.0
125°	634.1	636.3	638.6	640.8	643.1	647.2	653.1	659.0	665.0	670.9	674.3
127.5°	682.2	684.7	687.1	689.5	691.9	695.4	699.9	704.6	709.1	713.7	717.5
130°	712.8	715.5	718.2	720.9	723.6	726.7	730.3	733.9	737.6	741.2	745.1
132.5°	744.0	746.2	748.5	750.7	753.0	755.8	759.0	762.3	765.5	768.7	772.3
135°	784.1	786.8	789.6	792.4	795.2	797.8	800.1	802.5	804.9	807.3	810.7
137.5°	825.1	827.0	828.9	830.9	832.7	834.8	836.9	839.0	841.1	843.3	846.5
140°	851.9	853.1	854.4	855.7	857.0	858.8	860.8	862.9	865.0	867.1	869.9
142.5°	874.3	875.5	876.6	877.8	879.0	880.7	882.9	885.1	887.3	889.5	892.0
145°	909.1	909.0	908.8	908.7	908.5	909.9	912.8	915.7	918.7	921.6	923.3
147.5°	939.9	939.1	938.5	937.8	937.2	938.3	941.3	944.1	947.1	950.0	951.0
150°	959.8	958.5	957.3	956.2	955.0	955.7	958.5	961.2	964.0	966.8	967.8
152.5°	976.6	975.3	973.9	972.6	971.2	971.8	974.4	977.1	979.7	982.4	983.4
155°	1001.1	999.5	997.9	996.4	994.8	995.1	997.2	999.2	1001.4	1003.4	1004.4
157.5°	1020.3	1019.0	1017.6	1016.3	1015.0	1015.0	1016.5	1018.0	1019.4	1020.8	1022.1
160°	1031.4	1030.5	1029.4	1028.3	1027.3	1027.3	1028.3	1029.4	1030.5	1031.4	1032.5
162.5°	1041.5	1040.4	1039.3	1038.3	1037.3	1037.2	1038.1	1039.0	1039.9	1040.8	1042.0
165°	1054.8	1053.8	1052.7	1051.7	1050.7	1050.4	1050.9	1051.4	1052.0	1052.5	1053.7
167.5°	1064.8	1063.7	1062.7	1061.7	1060.6	1060.4	1060.9	1061.4	1061.8	1062.3	1063.5
170°	1070.4	1069.3	1068.4	1067.3	1066.2	1065.9	1066.2	1066.6	1067.0	1067.3	1068.5
172.5°	1074.2	1073.1	1072.0	1071.1	1070.0	1069.7	1070.0	1070.3	1070.7	1071.1	1072.3
175°	1079.0	1077.7	1076.5	1075.4	1074.2	1073.7	1074.1	1074.4	1074.7	1075.1	1076.3
177.5°	1079.8	1078.8	1077.8	1076.8	1075.9	1075.5	1075.6	1075.7	1075.9	1076.0	1077.0
180°	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6
2.5°	254.7	255.0	255.4	255.5	255.4	255.2	255.1	254.9
5°	254.0	254.5	254.9	255.1	255.0	254.9	254.9	254.8
7.5°	252.7	253.3	254.0	254.2	254.1	254.0	254.0	253.9
10°	251.7	252.3	253.0	253.3	253.2	253.2	253.1	253.0
12.5°	249.9	250.5	251.2	251.5	251.4	251.4	251.3	251.2
15°	246.6	247.4	248.2	248.5	248.4	248.3	248.3	248.2
17.5°	242.6	243.3	244.0	244.4	244.4	244.4	244.4	244.4
20°	239.2	240.1	241.0	241.5	241.5	241.5	241.5	241.5
22.5°	235.7	236.6	237.5	238.0	238.1	238.2	238.4	238.6
25°	230.2	231.1	232.1	232.7	232.9	233.2	233.4	233.7
27.5°	224.0	225.3	226.5	227.2	227.4	227.6	227.7	228.0
30°	219.6	221.0	222.3	223.1	223.3	223.6	223.8	224.0
32.5°	215.0	216.5	218.1	219.1	219.5	220.0	220.4	220.8
35°	208.5	210.3	212.1	213.3	213.9	214.4	215.0	215.6
37.5°	201.6	203.7	205.7	207.0	207.6	208.2	208.8	209.4
40°	196.9	199.0	201.1	202.6	203.3	204.1	204.8	205.5
42.5°	192.2	194.5	196.9	198.4	199.2	199.9	200.6	201.4
45°	185.1	187.7	190.2	191.9	192.7	193.6	194.4	195.2
47.5°	177.7	180.3	183.0	184.8	185.7	186.6	187.5	188.4
50°	172.6	175.5	178.2	180.1	181.0	181.9	182.8	183.7
52.5°	167.1	170.0	172.8	174.8	175.8	176.8	177.7	178.6
55°	158.9	161.8	164.9	166.8	167.9	169.0	170.1	171.1
57.5°	150.2	153.4	156.5	158.7	159.8	160.9	161.9	163.1
60°	144.4	147.6	150.7	152.8	153.9	155.1	156.3	157.4
62.5°	138.3	141.6	145.0	147.2	148.2	149.3	150.4	151.5
65°	129.0	132.3	135.7	137.9	139.0	140.1	141.1	142.2
67.5°	119.5	122.9	126.4	128.7	129.7	130.9	132.0	133.1
70°	113.0	116.5	120.1	122.4	123.4	124.3	125.3	126.3
72.5°	106.6	110.1	113.6	115.9	117.1	118.3	119.5	120.7
75°	97.1	100.6	104.2	106.5	107.5	108.6	109.7	110.7
77.5°	87.7	91.2	94.7	97.1	98.2	99.4	100.5	101.7
80°	81.4	84.8	88.3	90.6	91.7	92.9	94.0	95.1
82.5°	75.4	78.9	82.3	84.6	85.7	86.8	87.9	88.9
85°	66.9	70.4	73.9	76.1	77.3	78.4	79.6	80.7
87.5°	63.2	66.8	70.3	72.6	73.7	74.8	76.0	77.1
90°	72.8	77.0	81.1	83.8	85.2	86.5	87.9	89.2
92.5°	71.7	75.3	79.0	81.4	82.7	83.8	85.0	86.3
95°	81.0	85.0	88.9	91.3	92.1	92.9	93.8	94.6
97.5°	87.6	91.3	95.1	97.5	98.7	99.9	101.0	102.2
100°	90.3	94.7	99.1	102.0	103.2	104.5	105.7	107.0
102.5°	90.2	95.0	99.7	102.8	104.2	105.6	107.0	108.4
105°	88.9	93.8	98.5	101.7	103.3	104.9	106.5	108.1
107.5°	97.0	97.8	98.7	99.9	101.4	103.1	104.7	106.2
110°	134.0	119.4	104.7	98.1	99.7	101.3	102.9	104.5



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CATALOG NUMBER: S122DIW-S290D970U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	247.8	187.3	126.8	97.2	98.7	100.1	101.6	103.1
115°	347.5	269.9	192.2	147.5	136.0	124.4	112.8	101.3
117.5°	517.7	500.8	483.8	455.3	415.2	375.0	334.8	294.7
120°	597.2	601.6	606.0	597.0	574.5	552.0	529.5	507.0
122.5°	630.4	633.9	637.4	637.2	633.5	629.7	626.0	622.2
125°	677.8	681.2	684.6	687.0	688.2	689.5	690.7	692.0
127.5°	721.3	725.1	729.0	731.2	732.1	733.0	733.8	734.6
130°	749.0	752.8	756.8	759.0	759.5	759.9	760.3	760.8
132.5°	775.8	779.3	782.9	784.9	785.4	785.9	786.4	786.8
135°	814.2	817.7	821.1	823.0	823.3	823.6	823.9	824.3
137.5°	849.7	853.0	856.1	857.7	857.7	857.7	857.6	857.6
140°	872.8	875.6	878.6	879.8	879.4	879.1	878.6	878.3
142.5°	894.5	896.9	899.4	900.4	900.0	899.5	899.1	898.7
145°	925.0	926.8	928.5	929.0	928.6	928.1	927.7	927.2
147.5°	951.9	952.8	953.8	954.1	953.5	953.0	952.4	951.9
150°	968.9	969.9	970.9	971.0	970.2	969.3	968.4	967.6
152.5°	984.5	985.5	986.5	986.5	985.4	984.2	983.1	981.9
155°	1005.5	1006.5	1007.5	1007.4	1006.0	1004.6	1003.2	1001.8
157.5°	1023.2	1024.4	1025.6	1025.5	1024.1	1022.8	1021.4	1020.1
160°	1033.6	1034.5	1035.6	1035.5	1034.3	1033.1	1031.9	1030.7
162.5°	1043.2	1044.3	1045.5	1045.4	1043.8	1042.4	1040.9	1039.4
165°	1054.9	1056.1	1057.4	1057.4	1056.1	1054.9	1053.7	1052.5
167.5°	1064.7	1065.9	1067.1	1067.0	1065.4	1063.9	1062.3	1060.8
170°	1069.8	1070.9	1072.1	1072.0	1070.4	1068.9	1067.3	1065.8
172.5°	1073.4	1074.6	1075.9	1075.7	1074.2	1072.6	1071.1	1069.5
175°	1077.5	1078.7	1079.9	1079.7	1077.9	1076.2	1074.5	1072.8
177.5°	1078.0	1078.9	1079.9	1079.8	1078.5	1077.3	1076.0	1074.8
180°	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6

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