

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: P331479-935

Luminaire Tested: **S122DIW-S290D970U935-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331479-935
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-S290D970U935-4F0-1E-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: 4364.4 lumens
Efficiency: N/A
Efficacy: 114.9 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

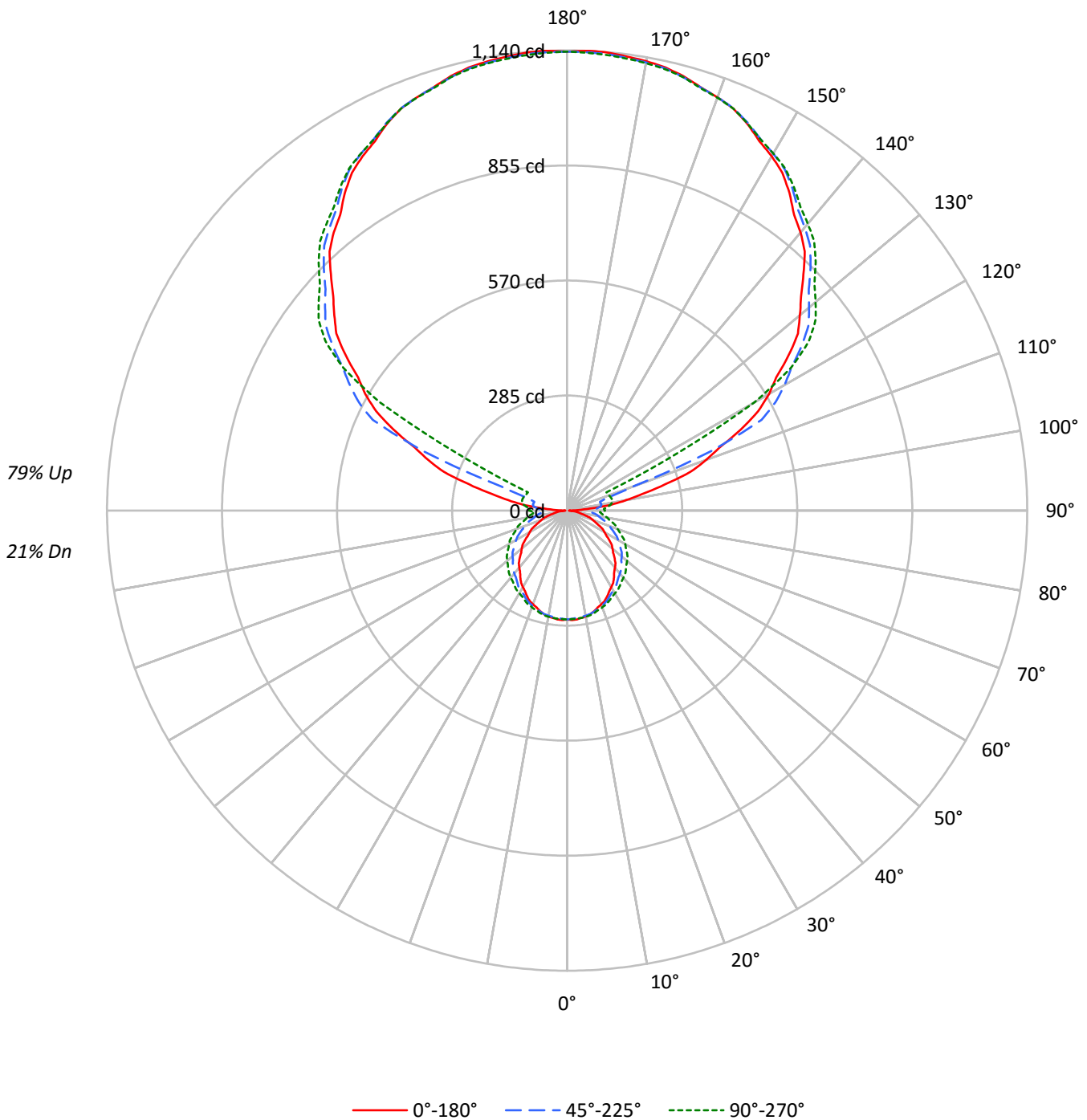
Input Watts (W): 38
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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	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°	4358	4358	4358
5°	4379	4195	4179
10°	4352	4070	4026
15°	4290	3939	3863
20°	4215	3798	3707
25°	4141	3663	3565
30°	4034	3524	3423
35°	3928	3389	3323
40°	3818	3275	3223
45°	3709	3172	3137
50°	3596	3079	3053
55°	3474	2979	2968
60°	3329	2876	2878
65°	3174	2756	2769
70°	3001	2623	2653
75°	2784	2499	2544
80°	2445	2366	2436
85°	2110	2255	2350



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.6	0.6
10°-20°	73.3	1.7
20°-30°	111.1	2.5
30°-40°	135.3	3.1
40°-50°	145.6	3.3
50°-60°	141.4	3.2
60°-70°	123.5	2.8
70°-80°	95.1	2.2
80°-90°	66.6	1.5
90°-100°	81.9	1.9
100°-110°	171.2	3.9
110°-120°	393.0	9.0
120°-130°	625.5	14.3
130°-140°	657.6	15.1
140°-150°	607.5	13.9
150°-160°	487.7	11.2
160°-170°	314.3	7.2
170°-180°	108.2	2.5
0°-30°	210.0	4.8
0°-40°	345.4	7.9
0°-60°	632.4	14.5
0°-90°	917.5	21.0
90°-120°	646.0	14.8
90°-150°	2536.7	58.1
90°-180°	3447.0	79.0
0°-180°	4364.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	270	270	270	270	270	
5°	271	269	267	269	269	26
15°	258	259	259	262	262	73
25°	235	237	241	245	247	108
35°	202	209	216	225	228	126
45°	166	177	190	202	206	128
55°	127	142	162	175	181	114
65°	87	106	129	145	150	86
75°	48	70	95	111	117	51
85°	14	38	63	79	85	15
90°	5	36	68	87	94	5
95°	57	50	77	95	100	68
105°	252	275	84	106	114	269
115°	475	494	531	179	107	467
125°	670	681	708	724	731	597
135°	828	841	853	868	870	639
145°	960	960	973	981	979	600
155°	1057	1051	1060	1064	1058	487
165°	1114	1109	1112	1117	1112	315
175°	1139	1134	1135	1140	1133	108
180°	1137	1137	1137	1137	1137	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	271.5	271.2	271.0	270.8	270.6	270.3	269.8	269.3	268.8	268.3	268.6
5°	270.7	270.4	270.2	269.9	269.6	269.2	268.7	268.2	267.7	267.2	267.7
7.5°	268.2	268.0	267.9	267.7	267.5	267.3	266.8	266.5	266.0	265.6	266.3
10°	266.4	266.2	266.0	265.9	265.7	265.4	265.2	264.9	264.7	264.4	265.1
12.5°	263.2	263.3	263.3	263.4	263.4	263.3	263.1	262.9	262.7	262.5	263.2
15°	258.1	258.3	258.5	258.6	258.8	258.9	258.9	258.9	258.9	258.9	259.7
17.5°	251.6	251.9	252.3	252.7	253.0	253.4	253.7	253.9	254.2	254.5	255.3
20°	247.2	247.6	248.1	248.5	248.9	249.3	249.7	250.0	250.4	250.7	251.7
22.5°	242.5	243.0	243.5	244.0	244.5	245.0	245.5	246.0	246.5	246.9	247.9
25°	234.7	235.3	235.9	236.5	237.1	237.8	238.6	239.4	240.1	240.9	241.9
27.5°	225.3	226.3	227.3	228.3	229.3	230.2	231.1	232.0	233.0	233.9	235.2
30°	219.0	220.2	221.3	222.4	223.5	224.7	225.8	227.0	228.1	229.2	230.6
32.5°	212.2	213.4	214.6	215.9	217.2	218.5	219.9	221.2	222.6	223.9	225.5
35°	202.2	203.7	205.2	206.6	208.1	209.7	211.4	213.0	214.6	216.3	218.2
37.5°	191.4	193.1	194.8	196.6	198.2	200.2	202.3	204.4	206.6	208.7	210.9
40°	184.3	186.1	188.0	189.9	191.8	194.0	196.3	198.7	201.0	203.4	205.6
42.5°	177.4	179.3	181.2	183.0	185.0	187.3	190.0	192.7	195.4	198.0	200.5
45°	165.8	168.2	170.6	172.9	175.2	177.9	181.0	184.0	187.0	190.1	192.8
47.5°	154.5	157.0	159.6	162.1	164.7	167.8	171.3	174.9	178.5	182.0	184.9
50°	146.7	149.4	152.1	154.7	157.5	160.7	164.7	168.6	172.5	176.4	179.3
52.5°	139.1	142.0	144.8	147.7	150.5	153.9	158.1	162.2	166.3	170.5	173.5
55°	127.1	130.3	133.4	136.5	139.7	143.4	148.0	152.5	157.0	161.5	164.7
57.5°	115.2	118.7	122.3	125.8	129.3	133.4	138.0	142.6	147.2	151.9	155.2
60°	106.8	110.6	114.3	118.0	121.7	126.1	131.0	136.0	140.9	145.9	149.2
62.5°	99.3	103.1	107.0	110.9	114.8	119.2	124.2	129.1	134.1	139.1	142.5
65°	86.8	91.1	95.3	99.6	103.8	108.6	113.7	118.8	124.0	129.1	132.7
67.5°	75.4	79.9	84.3	88.8	93.2	98.1	103.3	108.6	113.8	119.1	122.7
70°	67.2	71.8	76.3	80.8	85.3	90.3	95.7	101.1	106.5	111.8	115.6
72.5°	59.8	64.4	69.1	73.7	78.4	83.4	88.9	94.4	99.9	105.3	109.0
75°	48.1	53.0	57.9	62.7	67.6	72.8	78.4	83.9	89.5	95.1	98.8
77.5°	36.9	41.9	47.0	52.1	57.3	62.6	68.3	73.9	79.6	85.2	88.9
80°	29.4	34.6	40.0	45.2	50.5	56.1	61.6	67.3	72.9	78.6	82.2
82.5°	23.1	28.3	33.6	38.7	44.0	49.5	55.2	61.0	66.6	72.3	76.0
85°	14.1	19.5	24.9	30.2	35.6	41.1	46.7	52.3	57.8	63.4	67.0
87.5°	7.8	13.4	19.0	24.5	30.1	35.9	41.8	47.6	53.5	59.3	63.0
90°	4.7	11.8	18.9	25.9	33.0	40.0	47.0	54.1	61.0	68.1	72.5
92.5°	20.2	24.7	29.3	33.8	38.2	43.6	49.7	55.7	61.8	67.9	71.8
95°	56.6	54.7	52.7	50.8	48.8	51.1	57.6	64.1	70.6	77.1	81.3
97.5°	108.8	95.5	82.1	68.8	55.4	52.7	60.6	68.6	76.6	84.6	88.5
100°	148.4	126.6	104.7	82.8	61.0	54.1	62.1	70.1	78.0	86.0	90.7
102.5°	191.5	189.2	186.8	184.4	182.0	170.2	149.0	127.7	106.4	85.2	90.1
105°	252.1	260.1	268.0	276.0	284.0	265.4	220.0	174.6	129.2	83.9	88.9
107.5°	321.6	328.0	334.5	340.9	347.3	322.8	267.3	211.7	156.2	100.7	101.6
110°	366.0	371.6	377.2	382.8	388.3	366.9	318.2	269.7	221.1	172.5	157.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	408.1	413.0	417.8	422.8	427.6	425.5	416.6	407.5	398.5	389.5	325.6
115°	474.6	478.7	482.8	486.8	490.9	497.1	505.7	514.1	522.6	531.1	449.0
117.5°	533.6	537.7	541.8	546.0	550.0	555.4	562.2	568.9	575.8	582.5	564.6
120°	577.0	580.1	583.2	586.3	589.4	594.3	601.2	607.9	614.7	621.5	626.0
122.5°	613.9	617.0	620.0	623.0	626.0	630.9	637.8	644.7	651.5	658.4	662.1
125°	669.7	672.0	674.4	676.7	679.2	683.5	689.7	695.9	702.2	708.5	712.1
127.5°	720.5	723.1	725.6	728.1	730.6	734.3	739.2	744.1	748.9	753.7	757.8
130°	752.8	755.6	758.5	761.3	764.1	767.4	771.3	775.1	778.9	782.7	786.9
132.5°	785.7	788.1	790.5	792.8	795.2	798.1	801.6	805.0	808.4	811.8	815.5
135°	828.0	831.0	833.9	836.8	839.7	842.5	845.0	847.5	850.0	852.6	856.2
137.5°	871.3	873.3	875.4	877.4	879.4	881.6	883.8	886.1	888.3	890.5	894.0
140°	899.7	901.0	902.3	903.7	905.1	906.9	909.0	911.3	913.4	915.7	918.7
142.5°	923.3	924.5	925.7	927.0	928.2	930.1	932.4	934.7	937.0	939.4	942.0
145°	960.1	959.9	959.8	959.6	959.4	960.9	964.0	967.1	970.2	973.3	975.1
147.5°	992.6	991.8	991.1	990.4	989.7	990.9	994.0	997.0	1000.1	1003.2	1004.3
150°	1013.6	1012.3	1011.0	1009.8	1008.5	1009.3	1012.2	1015.1	1018.0	1021.0	1022.1
152.5°	1031.4	1029.9	1028.5	1027.1	1025.6	1026.3	1029.1	1031.9	1034.7	1037.4	1038.5
155°	1057.2	1055.5	1053.9	1052.2	1050.6	1050.9	1053.1	1055.2	1057.5	1059.6	1060.8
157.5°	1077.5	1076.1	1074.6	1073.2	1071.9	1071.9	1073.5	1075.0	1076.5	1078.1	1079.3
160°	1089.3	1088.2	1087.1	1086.0	1084.9	1084.9	1086.0	1087.1	1088.2	1089.3	1090.4
162.5°	1099.8	1098.7	1097.6	1096.5	1095.5	1095.4	1096.3	1097.3	1098.2	1099.2	1100.4
165°	1114.0	1112.8	1111.7	1110.7	1109.6	1109.3	1109.8	1110.3	1110.9	1111.5	1112.8
167.5°	1124.5	1123.3	1122.3	1121.2	1120.1	1119.8	1120.3	1120.8	1121.4	1121.9	1123.1
170°	1130.4	1129.3	1128.3	1127.1	1126.0	1125.7	1126.0	1126.4	1126.8	1127.1	1128.4
172.5°	1134.4	1133.2	1132.1	1131.1	1130.0	1129.6	1130.0	1130.3	1130.7	1131.1	1132.4
175°	1139.4	1138.2	1136.9	1135.7	1134.4	1133.9	1134.3	1134.6	1135.0	1135.3	1136.6
177.5°	1140.3	1139.3	1138.2	1137.2	1136.2	1135.7	1135.9	1136.0	1136.2	1136.3	1137.4
180°	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	269.0	269.3	269.7	269.8	269.7	269.5	269.4	269.2
5°	268.2	268.7	269.2	269.4	269.3	269.2	269.1	269.1
7.5°	266.9	267.5	268.2	268.5	268.4	268.3	268.2	268.1
10°	265.8	266.5	267.2	267.5	267.4	267.3	267.3	267.2
12.5°	263.9	264.6	265.3	265.6	265.5	265.4	265.4	265.3
15°	260.5	261.3	262.1	262.4	262.3	262.3	262.2	262.1
17.5°	256.1	256.9	257.7	258.1	258.1	258.1	258.1	258.1
20°	252.6	253.6	254.5	255.0	255.0	255.0	255.0	255.0
22.5°	248.9	249.9	250.8	251.3	251.5	251.6	251.8	251.9
25°	243.1	244.1	245.1	245.7	246.0	246.2	246.5	246.8
27.5°	236.5	237.9	239.2	240.0	240.1	240.3	240.5	240.7
30°	232.0	233.4	234.8	235.6	235.8	236.1	236.3	236.6
32.5°	227.0	228.7	230.3	231.4	231.8	232.3	232.7	233.2
35°	220.2	222.1	223.9	225.2	225.8	226.4	227.0	227.6
37.5°	212.9	215.1	217.2	218.6	219.2	219.9	220.5	221.1
40°	207.9	210.2	212.4	214.0	214.7	215.5	216.3	217.1
42.5°	203.0	205.4	207.9	209.6	210.3	211.1	211.9	212.7
45°	195.4	198.2	200.9	202.7	203.5	204.4	205.3	206.1
47.5°	187.7	190.5	193.3	195.2	196.1	197.1	198.0	199.0
50°	182.3	185.3	188.2	190.2	191.1	192.1	193.0	194.0
52.5°	176.5	179.5	182.5	184.6	185.6	186.7	187.7	188.6
55°	167.8	170.9	174.1	176.2	177.3	178.5	179.6	180.7
57.5°	158.6	162.0	165.3	167.6	168.8	169.9	171.0	172.2
60°	152.5	155.8	159.1	161.4	162.6	163.8	165.1	166.3
62.5°	146.0	149.6	153.1	155.4	156.5	157.6	158.9	160.0
65°	136.2	139.7	143.4	145.7	146.8	147.9	149.0	150.2
67.5°	126.2	129.8	133.5	135.9	137.0	138.2	139.4	140.6
70°	119.3	123.0	126.8	129.2	130.3	131.3	132.3	133.4
72.5°	112.6	116.3	119.9	122.4	123.6	124.9	126.2	127.4
75°	102.5	106.2	110.0	112.4	113.6	114.7	115.8	116.9
77.5°	92.6	96.3	100.0	102.5	103.8	105.0	106.2	107.4
80°	85.9	89.5	93.2	95.7	96.9	98.1	99.3	100.5
82.5°	79.6	83.3	87.0	89.4	90.5	91.7	92.8	93.9
85°	70.7	74.3	78.0	80.4	81.6	82.8	84.0	85.2
87.5°	66.7	70.5	74.2	76.7	77.8	79.0	80.2	81.5
90°	76.9	81.3	85.7	88.5	90.0	91.4	92.8	94.2
92.5°	75.7	79.6	83.4	86.0	87.3	88.5	89.8	91.1
95°	85.5	89.7	93.9	96.4	97.3	98.2	99.0	99.9
97.5°	92.5	96.4	100.4	103.0	104.2	105.5	106.7	108.0
100°	95.4	100.0	104.7	107.7	109.0	110.4	111.7	113.0
102.5°	95.2	100.3	105.3	108.6	110.0	111.5	113.0	114.4
105°	93.9	99.0	104.0	107.4	109.1	110.8	112.4	114.2
107.5°	102.5	103.3	104.2	105.5	107.1	108.8	110.6	112.2
110°	141.5	126.1	110.6	103.6	105.3	107.0	108.7	110.4



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CATALOG NUMBER: S122DIW-S290D970U935-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	261.7	197.8	133.9	102.6	104.2	105.7	107.3	108.8
115°	367.0	285.0	202.9	155.8	143.6	131.4	119.2	106.9
117.5°	546.7	528.8	510.9	480.8	438.4	396.0	353.6	311.3
120°	630.7	635.3	640.0	630.4	606.7	583.0	559.2	535.5
122.5°	665.7	669.4	673.1	673.0	669.0	665.0	661.1	657.0
125°	715.7	719.4	723.0	725.5	726.8	728.1	729.4	730.8
127.5°	761.7	765.8	769.8	772.2	773.1	774.0	774.9	775.8
130°	791.0	795.0	799.2	801.5	802.0	802.5	803.0	803.5
132.5°	819.3	823.0	826.7	828.9	829.4	829.9	830.4	831.0
135°	859.8	863.5	867.1	869.1	869.4	869.8	870.1	870.5
137.5°	897.3	900.8	904.1	905.8	905.8	905.8	905.7	905.7
140°	921.7	924.7	927.8	929.1	928.7	928.3	927.9	927.6
142.5°	944.6	947.2	949.9	950.9	950.5	949.9	949.5	949.1
145°	976.9	978.7	980.5	981.1	980.7	980.2	979.7	979.2
147.5°	1005.2	1006.3	1007.3	1007.5	1006.9	1006.4	1005.8	1005.3
150°	1023.2	1024.2	1025.4	1025.5	1024.6	1023.6	1022.7	1021.8
152.5°	1039.7	1040.7	1041.8	1041.8	1040.6	1039.4	1038.2	1037.0
155°	1061.9	1062.9	1064.0	1063.9	1062.4	1060.9	1059.5	1058.0
157.5°	1080.6	1081.8	1083.1	1083.0	1081.5	1080.1	1078.7	1077.3
160°	1091.5	1092.5	1093.6	1093.6	1092.3	1091.0	1089.8	1088.5
162.5°	1101.6	1102.9	1104.1	1104.0	1102.3	1100.8	1099.2	1097.7
165°	1114.0	1115.3	1116.6	1116.6	1115.3	1114.0	1112.8	1111.5
167.5°	1124.4	1125.7	1127.0	1126.8	1125.2	1123.5	1121.9	1120.2
170°	1129.7	1130.9	1132.2	1132.0	1130.4	1128.8	1127.1	1125.5
172.5°	1133.6	1134.9	1136.2	1136.0	1134.4	1132.7	1131.1	1129.5
175°	1137.9	1139.2	1140.5	1140.2	1138.3	1136.5	1134.7	1132.9
177.5°	1138.4	1139.4	1140.4	1140.3	1138.9	1137.6	1136.3	1135.1
180°	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0

(END OF REPORT)