

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: P331492-930

Luminaire Tested: **S122DIW-S290D1440U930-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331492-930  
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-S290D1440U930-4F0-1E-UDD-D1  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1440 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5053.4 lumens  
Efficiency: N/A  
Efficacy: 94.6 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

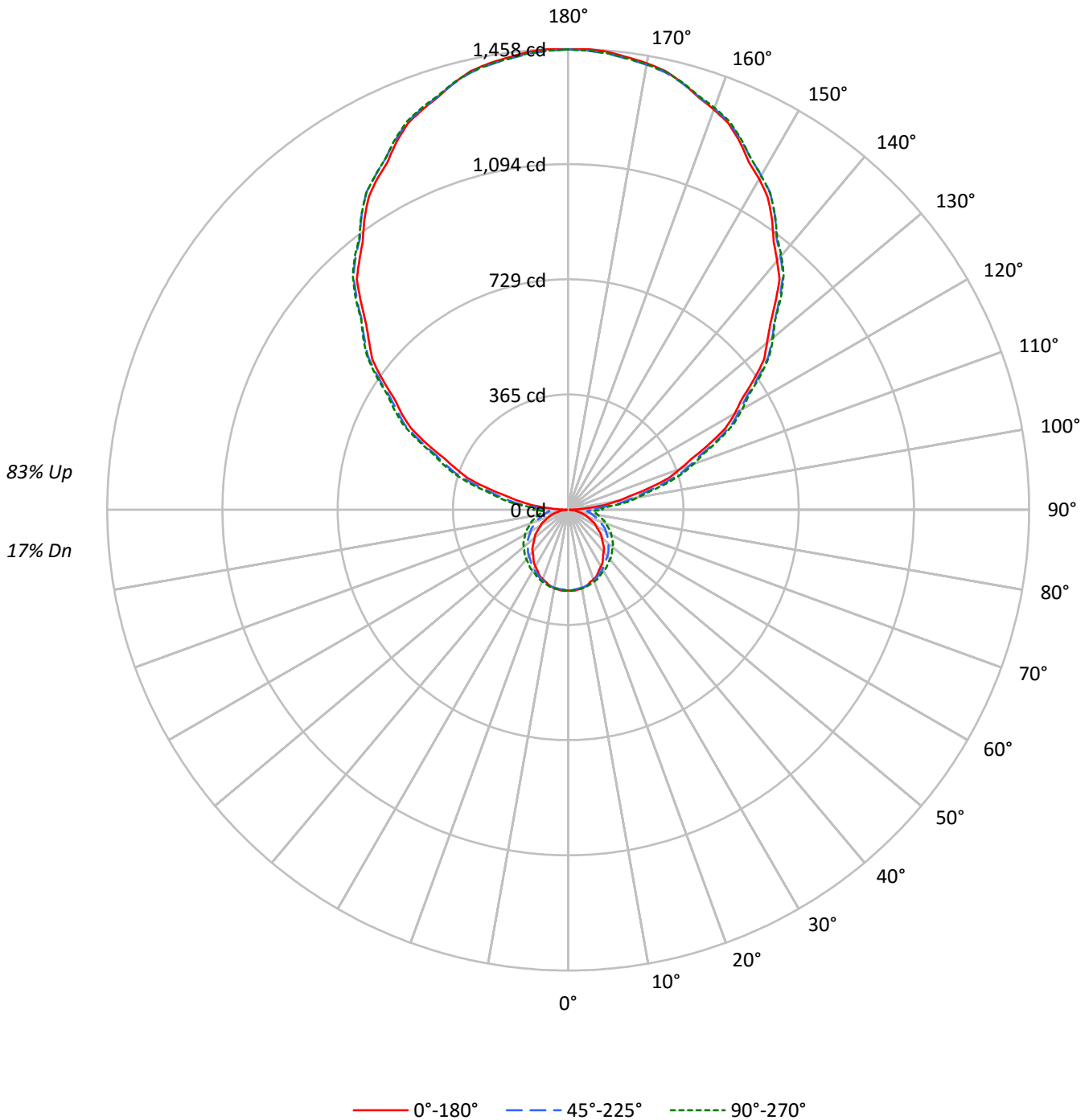
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	99	99	99	99	87	87	87	87	65	65	65	45	45	45	26	26	26	17
1	90	86	82	78	79	75	72	69	56	54	52	38	37	36	22	21	21	13
2	82	74	68	63	71	65	60	56	49	45	43	33	31	30	19	18	17	11
3	74	65	58	52	65	57	51	47	43	39	35	29	27	25	17	15	14	9
4	68	57	50	44	59	51	44	39	38	33	30	26	23	21	15	13	12	8
5	62	51	43	37	54	45	38	33	34	29	25	23	20	18	13	12	10	6
6	57	45	37	32	50	40	33	29	30	25	22	21	18	15	12	10	9	6
7	52	41	33	28	46	36	29	25	27	22	19	19	16	13	11	9	8	5
8	48	37	29	24	42	32	26	22	24	20	17	17	14	12	10	8	7	4
9	45	33	26	21	39	29	23	19	22	18	15	15	13	10	9	7	6	4
10	42	30	23	19	37	27	21	17	20	16	13	14	11	9	8	7	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	0.5
10°-20°	69.4	1.4
20°-30°	105.2	2.1
30°-40°	128.2	2.5
40°-50°	137.9	2.7
50°-60°	133.9	2.6
60°-70°	116.9	2.3
70°-80°	90.0	1.8
80°-90°	66.2	1.3
90°-100°	133.9	2.6
100°-110°	317.0	6.3
110°-120°	510.0	10.1
120°-130°	655.5	13.0
130°-140°	727.9	14.4
140°-150°	709.9	14.0
150°-160°	594.8	11.8
160°-170°	394.5	7.8
170°-180°	137.9	2.7
0°-30°	198.9	3.9
0°-40°	327.1	6.5
0°-60°	598.8	11.9
0°-90°	872.0	17.3
90°-120°	961.0	19.0
90°-150°	3054.3	60.4
90°-180°	4181.0	82.7
0°-180°	5053.4	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°	5	42	92	104	110	6
95°	67	96	121	135	137	76
105°	266	281	302	317	322	281
115°	493	505	519	528	529	488
125°	716	727	735	741	744	640
135°	926	939	946	952	951	715
145°	1123	1132	1139	1142	1140	702
155°	1284	1288	1292	1297	1294	591
165°	1398	1396	1396	1404	1399	394
175°	1454	1450	1448	1456	1449	138
180°	1456	1456	1456	1456	1456	



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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°	7.5	13.0	18.6	24.2	29.8	35.8	42.2	48.7	55.2	61.6	64.9
90°	5.0	13.0	21.0	29.1	37.2	46.8	58.0	69.4	80.6	91.9	94.7
92.5°	25.3	32.1	39.0	45.8	52.7	59.4	65.9	72.3	78.8	85.3	88.6
95°	66.9	73.5	80.1	86.7	93.3	99.3	104.8	110.3	115.8	121.2	124.4
97.5°	119.4	125.2	131.0	136.9	142.8	148.5	154.3	160.1	165.9	171.6	174.7
100°	158.7	164.0	169.2	174.4	179.6	184.9	190.4	195.8	201.2	206.7	209.7
102.5°	199.7	204.2	208.7	213.3	217.8	222.8	228.4	233.8	239.4	244.9	248.1
105°	266.1	269.3	272.6	275.7	278.9	283.0	287.8	292.6	297.4	302.2	305.7
107.5°	333.4	336.5	339.7	342.8	345.8	349.4	353.5	357.7	361.7	365.8	368.8
110°	376.3	379.7	382.9	386.2	389.5	393.1	397.2	401.2	405.3	409.3	411.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	423.5	426.6	429.6	432.6	435.6	439.0	442.5	446.2	449.8	453.5	455.4
115°	493.1	495.7	498.2	500.8	503.3	506.1	509.3	512.5	515.6	518.8	521.0
117.5°	562.1	564.8	567.6	570.4	573.2	575.5	577.4	579.4	581.2	583.1	584.9
120°	608.3	610.8	613.3	615.8	618.3	620.2	621.3	622.4	623.5	624.6	626.9
122.5°	650.6	653.3	656.1	658.8	661.6	663.7	665.3	666.9	668.5	670.0	671.6
125°	716.1	718.5	721.0	723.5	725.9	728.1	729.9	731.6	733.5	735.3	736.7
127.5°	780.2	783.3	786.3	789.4	792.4	794.4	795.6	796.7	797.9	799.0	800.1
130°	820.6	824.0	827.5	831.0	834.5	836.7	838.0	839.1	840.3	841.5	842.9
132.5°	865.8	868.6	871.4	874.2	877.0	879.1	880.6	882.1	883.5	884.9	885.7
135°	925.9	928.9	931.9	934.9	937.9	940.1	941.4	942.8	944.2	945.6	947.1
137.5°	989.5	992.0	994.4	996.9	999.3	1001.1	1002.2	1003.2	1004.3	1005.3	1006.7
140°	1027.9	1030.3	1032.7	1035.0	1037.4	1039.3	1040.9	1042.4	1044.0	1045.5	1046.8
142.5°	1067.2	1069.6	1072.0	1074.4	1076.8	1078.4	1079.4	1080.4	1081.3	1082.2	1083.5
145°	1123.4	1125.4	1127.2	1129.1	1131.1	1132.9	1134.5	1136.1	1137.8	1139.4	1140.1
147.5°	1173.8	1176.1	1178.4	1180.7	1183.0	1184.7	1185.8	1186.8	1188.0	1189.0	1189.7
150°	1208.2	1209.8	1211.5	1213.2	1214.8	1216.1	1217.2	1218.3	1219.4	1220.5	1221.3
152.5°	1238.7	1240.3	1241.9	1243.6	1245.3	1246.8	1248.1	1249.4	1250.7	1252.0	1253.0
155°	1284.4	1285.2	1286.1	1286.9	1287.7	1288.5	1289.3	1290.1	1290.9	1291.8	1293.1
157.5°	1323.5	1324.0	1324.6	1325.2	1325.7	1326.2	1326.7	1327.2	1327.7	1328.2	1330.0
160°	1347.1	1347.7	1348.2	1348.7	1349.3	1349.7	1350.0	1350.2	1350.5	1350.8	1352.4
162.5°	1368.7	1368.9	1369.0	1369.1	1369.2	1369.4	1369.6	1369.9	1370.2	1370.4	1372.3
165°	1397.5	1397.3	1396.9	1396.7	1396.4	1396.3	1396.3	1396.3	1396.3	1396.3	1398.2
167.5°	1421.6	1420.7	1419.9	1419.1	1418.3	1417.9	1417.8	1417.8	1417.7	1417.6	1419.6
170°	1434.4	1433.5	1432.7	1431.9	1431.1	1430.5	1430.3	1430.0	1429.7	1429.5	1431.3
172.5°	1443.2	1442.4	1441.6	1440.8	1440.0	1439.4	1439.2	1438.8	1438.6	1438.3	1440.2
175°	1454.0	1453.2	1452.4	1451.6	1450.7	1450.1	1449.5	1448.9	1448.5	1447.9	1449.8
177.5°	1458.5	1457.8	1457.2	1456.5	1455.9	1455.3	1454.8	1454.4	1454.0	1453.5	1454.8
180°	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5



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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°	68.2	71.4	74.6	76.8	77.9	79.0	80.1	81.3
90°	97.4	100.1	102.9	104.9	106.2	107.5	108.7	109.9
92.5°	92.0	95.3	98.7	100.9	101.9	102.9	104.0	105.0
95°	127.5	130.6	133.8	135.6	136.0	136.4	136.9	137.3
97.5°	177.7	180.8	183.8	185.8	186.7	187.7	188.6	189.5
100°	212.7	215.8	218.8	220.7	221.3	221.9	222.6	223.2
102.5°	251.3	254.5	257.7	259.6	260.2	260.9	261.5	262.1
105°	309.1	312.5	315.9	318.1	319.0	319.9	320.8	321.7
107.5°	371.8	374.8	377.8	379.1	378.7	378.4	378.1	377.6
110°	414.6	417.2	419.8	421.2	421.3	421.3	421.4	421.5





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CATALOG NUMBER: S122DIW-S290D1440U930-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	457.4	459.3	461.4	462.5	462.8	463.1	463.4	463.7
115°	523.2	525.4	527.6	528.7	528.8	528.9	529.0	529.0
117.5°	586.7	588.5	590.2	591.1	591.2	591.2	591.2	591.2
120°	629.2	631.5	633.8	635.0	635.1	635.2	635.3	635.4
122.5°	673.2	674.7	676.4	677.2	677.4	677.6	677.8	677.9
125°	738.1	739.6	740.9	741.8	742.3	742.8	743.2	743.7
127.5°	801.1	802.2	803.2	803.7	803.6	803.4	803.2	803.1
130°	844.3	845.8	847.2	847.7	847.3	846.9	846.4	846.0
132.5°	886.4	887.0	887.8	888.0	887.8	887.6	887.4	887.1
135°	948.5	949.9	951.4	952.0	951.9	951.7	951.5	951.4
137.5°	1008.0	1009.3	1010.6	1011.0	1010.4	1009.9	1009.3	1008.8
140°	1048.1	1049.5	1050.8	1051.1	1050.5	1049.9	1049.3	1048.7
142.5°	1084.8	1086.1	1087.4	1087.7	1087.0	1086.3	1085.7	1085.0
145°	1140.9	1141.7	1142.5	1142.5	1141.8	1141.2	1140.4	1139.8
147.5°	1190.3	1191.1	1191.7	1191.6	1190.7	1189.9	1189.1	1188.3
150°	1222.1	1222.9	1223.8	1223.8	1222.9	1222.1	1221.3	1220.5
152.5°	1254.0	1255.1	1256.1	1256.1	1255.1	1254.0	1253.0	1252.0
155°	1294.5	1295.9	1297.2	1297.5	1296.7	1295.9	1295.1	1294.3
157.5°	1331.9	1333.7	1335.6	1335.9	1334.6	1333.3	1332.0	1330.6
160°	1354.0	1355.7	1357.3	1357.6	1356.5	1355.4	1354.4	1353.2
162.5°	1374.2	1376.1	1377.9	1378.2	1376.9	1375.6	1374.3	1372.9
165°	1400.1	1402.0	1403.9	1404.2	1402.8	1401.5	1400.1	1398.7
167.5°	1421.5	1423.4	1425.3	1425.6	1424.2	1422.7	1421.3	1419.8
170°	1433.3	1435.2	1437.1	1437.2	1435.6	1433.9	1432.3	1430.7
172.5°	1442.1	1444.1	1445.9	1446.1	1444.5	1442.8	1441.2	1439.6
175°	1451.7	1453.6	1455.6	1455.7	1454.0	1452.4	1450.7	1449.1
177.5°	1456.2	1457.5	1458.8	1458.8	1457.5	1456.2	1454.8	1453.5
180°	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5	1456.5

(END OF REPORT)