

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: P332213-930

Luminaire Tested: **S123DIW-S1165D460U930-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332213-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S1165D460U930-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5258.0 lumens
Efficiency: N/A
Efficacy: 100.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: Semi-Direct

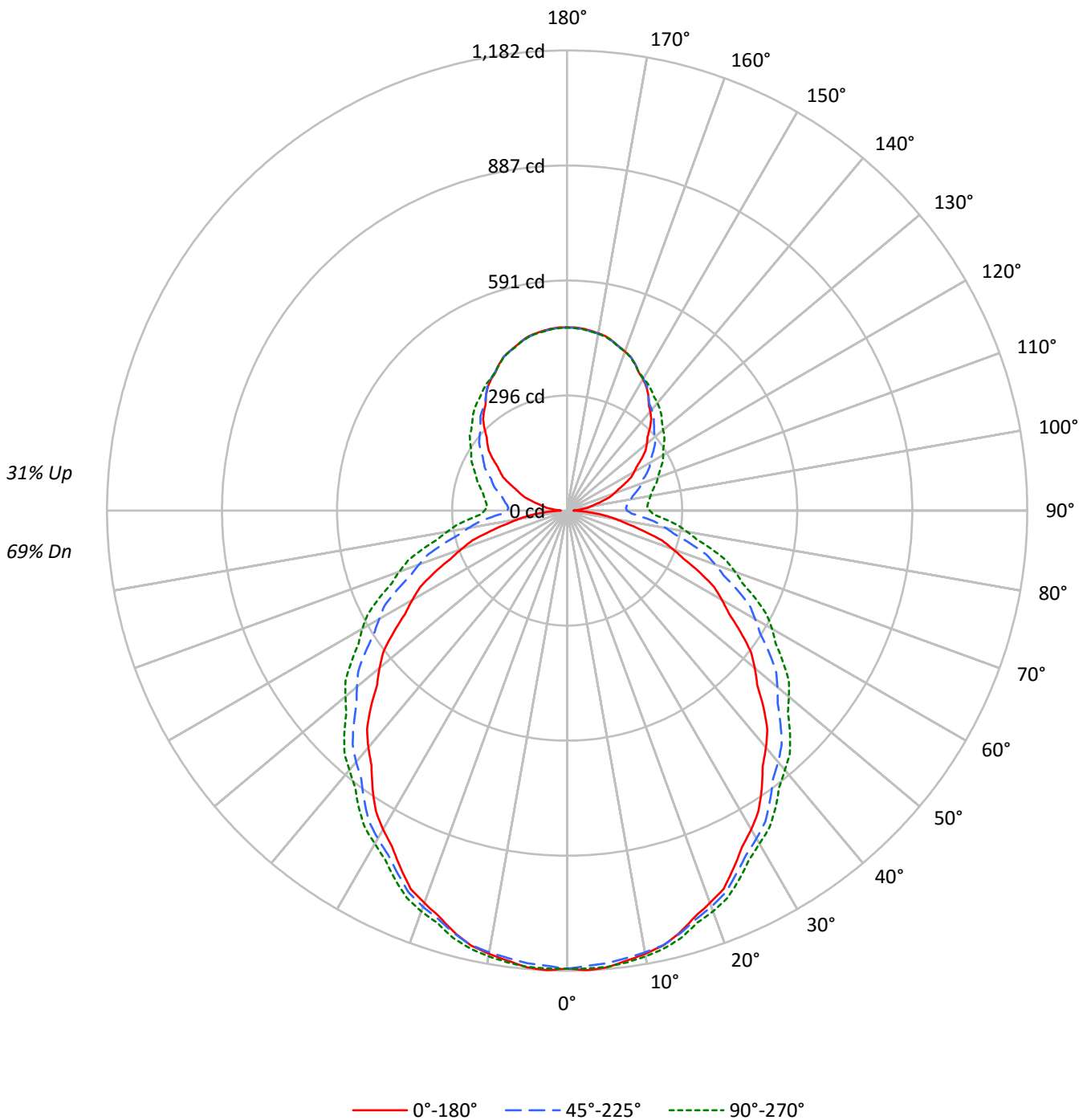
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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	112	112	112	112	105	105	105	105	94	94	94	83	83	83	73	73	73	69
1	101	95	91	87	95	90	86	82	80	77	74	71	69	66	63	61	59	55
2	91	83	76	70	85	78	72	67	70	65	60	62	58	54	54	51	49	45
3	83	72	64	58	78	68	61	55	61	55	50	54	49	45	48	44	41	37
4	76	64	55	48	71	60	52	46	54	47	42	48	43	39	42	38	35	32
5	69	57	48	41	65	54	46	40	48	42	36	43	38	33	38	34	30	27
6	64	51	42	36	60	48	40	34	43	37	32	39	33	29	34	30	26	24
7	59	46	37	31	55	44	36	30	39	33	28	35	30	26	31	27	23	21
8	55	42	33	28	52	40	32	27	36	29	25	32	27	23	29	24	21	19
9	51	38	30	25	48	36	29	24	33	27	22	30	24	21	27	22	19	17
10	48	35	27	22	45	33	26	22	30	24	20	27	22	19	25	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12664	12664	12664
5°	12703	12344	12352
10°	12589	12060	12000
15°	12427	11738	11616
20°	12195	11369	11194
25°	11908	10944	10750
30°	11616	10563	10299
35°	11287	10159	9939
40°	10973	9792	9555
45°	10626	9438	9247
50°	10281	9090	8908
55°	9903	8734	8603
60°	9533	8371	8291
65°	9155	7984	7918
70°	8585	7551	7537
75°	7860	7053	7148
80°	7035	6564	6706
85°	6264	6229	6450



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.5	2.1
10°-20°	317.9	6.0
20°-30°	475.5	9.0
30°-40°	567.9	10.8
40°-50°	594.1	11.3
50°-60°	557.5	10.6
60°-70°	465.7	8.9
70°-80°	333.2	6.3
80°-90°	200.1	3.8
90°-100°	155.3	3.0
100°-110°	183.3	3.5
110°-120°	217.2	4.1
120°-130°	240.1	4.6
130°-140°	246.3	4.7
140°-150°	230.0	4.4
150°-160°	190.9	3.6
160°-170°	127.0	2.4
170°-180°	44.5	0.8
0°-30°	905.0	17.2
0°-40°	1472.8	28.0
0°-60°	2624.5	49.9
0°-90°	3623.4	68.9
90°-120°	555.8	10.6
90°-150°	1272.2	24.2
90°-180°	1635.0	31.1
0°-180°	5258.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1176	1176	1176	1176	1176	
5°	1178	1175	1168	1177	1176	112
15°	1121	1125	1124	1136	1136	316
25°	1012	1025	1029	1045	1046	466
35°	872	892	909	927	933	545
45°	713	743	775	799	810	549
55°	543	586	632	665	677	486
65°	376	426	482	519	533	371
75°	204	264	328	369	386	218
85°	63	127	195	237	251	66
90°	17	84	154	197	212	13
95°	36	89	154	194	208	35
105°	93	126	183	218	232	99
115°	164	182	225	255	266	162
125°	234	237	271	296	304	209
135°	301	302	315	336	343	232
145°	363	363	364	373	377	226
155°	414	414	415	416	413	191
165°	451	450	450	452	450	127
175°	469	468	468	470	467	45
180°	470	470	470	470	470	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5
2.5°	1181.6	1181.0	1180.2	1179.6	1178.8	1177.6	1175.8	1173.9	1172.2	1170.4	1172.2
5°	1177.8	1177.2	1176.6	1176.1	1175.5	1174.4	1172.6	1170.9	1169.2	1167.5	1169.8
7.5°	1166.2	1166.4	1166.4	1166.6	1166.7	1166.0	1164.2	1162.6	1161.0	1159.3	1162.1
10°	1156.0	1156.6	1157.2	1157.7	1158.3	1157.8	1156.4	1155.0	1153.6	1152.1	1155.0
12.5°	1143.7	1144.4	1145.3	1146.1	1146.9	1146.8	1145.8	1144.8	1143.9	1142.9	1145.5
15°	1121.4	1122.3	1123.1	1124.0	1124.8	1125.1	1124.8	1124.5	1124.2	1124.0	1126.8
17.5°	1093.2	1094.9	1096.6	1098.3	1100.0	1100.8	1100.7	1100.6	1100.5	1100.3	1102.9
20°	1072.7	1074.4	1076.1	1077.8	1079.5	1080.7	1081.2	1081.8	1082.4	1083.0	1085.5
22.5°	1051.2	1052.9	1054.6	1056.3	1058.0	1059.2	1060.1	1060.9	1061.6	1062.4	1065.7
25°	1012.4	1015.3	1018.1	1021.0	1023.9	1025.6	1026.5	1027.4	1028.3	1029.1	1032.8
27.5°	973.5	976.7	980.0	983.3	986.4	989.0	990.8	992.6	994.5	996.3	999.5
30°	945.8	949.5	953.2	956.9	960.6	963.6	965.9	968.2	970.5	972.7	976.2
32.5°	915.0	919.2	923.3	927.5	931.6	935.2	938.2	941.2	944.1	947.1	950.7
35°	871.5	876.0	880.6	885.2	889.7	893.8	897.6	901.2	904.9	908.7	912.9
37.5°	825.3	830.5	835.6	840.7	845.9	850.7	855.2	859.8	864.4	868.9	873.8
40°	794.6	799.7	804.9	809.9	815.1	820.5	826.2	831.8	837.6	843.3	848.2
42.5°	760.8	767.0	773.3	779.5	785.8	791.9	797.9	803.7	809.7	815.6	820.9
45°	712.6	719.4	726.2	733.0	739.9	746.9	754.0	761.1	768.3	775.3	780.7
47.5°	662.0	669.8	677.5	685.3	693.1	701.0	709.1	717.3	725.5	733.6	739.6
50°	629.2	637.2	645.2	653.1	661.1	669.5	678.4	687.2	696.0	704.8	711.4
52.5°	594.4	602.8	611.2	619.7	628.1	637.2	646.9	656.6	666.4	676.1	683.0
55°	543.4	552.8	562.1	571.6	581.0	590.8	601.0	611.3	621.6	631.9	639.5
57.5°	493.7	503.4	513.2	523.0	532.9	543.4	554.6	565.8	577.0	588.2	596.0
60°	458.8	469.0	479.3	489.6	499.8	510.8	522.4	534.1	545.8	557.5	565.5
62.5°	426.0	436.5	446.9	457.5	467.9	479.3	491.7	504.0	516.4	528.8	536.7
65°	375.5	386.6	397.7	408.8	420.0	431.8	444.3	456.8	469.4	481.8	490.4
67.5°	324.2	336.1	347.8	359.6	371.4	383.7	396.4	409.2	421.9	434.7	444.0
70°	288.4	300.6	312.8	325.1	337.4	350.3	363.9	377.6	391.3	405.0	414.1
72.5°	255.5	267.8	280.1	292.3	304.5	317.7	331.8	345.9	360.1	374.2	383.6
75°	203.7	217.2	230.6	243.9	257.3	271.1	285.4	299.6	313.8	328.1	337.5
77.5°	158.7	172.2	185.6	199.2	212.6	226.6	240.9	255.3	269.6	284.0	293.9
80°	126.9	140.8	154.8	168.8	182.7	197.1	211.9	226.7	241.5	256.3	266.0
82.5°	99.2	113.4	127.6	141.8	155.9	170.6	185.6	200.6	215.6	230.6	240.4
85°	62.8	77.0	91.3	105.5	119.8	134.4	149.5	164.6	179.7	194.8	204.5
87.5°	34.2	48.5	62.9	77.2	91.6	106.1	120.8	135.6	150.3	165.0	174.8
90°	17.0	31.8	46.6	61.4	76.1	91.3	106.9	122.5	138.1	153.7	163.7
92.5°	24.5	37.7	50.9	64.0	77.1	91.2	106.1	121.0	135.9	150.8	160.5
95°	35.9	47.6	59.3	70.9	82.6	95.8	110.4	125.0	139.6	154.3	163.4
97.5°	51.3	61.7	72.2	82.7	93.1	105.3	119.0	132.8	146.6	160.5	169.3
100°	61.8	71.4	81.0	90.6	100.2	111.8	125.3	138.8	152.3	165.8	174.3
102.5°	74.0	82.6	91.1	99.5	108.0	119.0	132.4	145.9	159.2	172.7	180.9
105°	93.4	100.4	107.4	114.4	121.4	131.3	144.4	157.4	170.3	183.3	191.3
107.5°	114.6	120.5	126.5	132.3	138.3	147.2	159.1	171.0	182.9	194.8	202.7
110°	127.8	133.1	138.4	143.7	149.0	157.4	168.9	180.4	192.0	203.6	211.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	142.5	146.8	151.2	155.5	159.8	167.5	178.4	189.4	200.3	211.3	218.9
115°	163.5	167.1	170.7	174.4	178.1	185.0	195.0	205.1	215.2	225.3	232.2
117.5°	185.5	187.8	190.0	192.3	194.6	200.4	209.9	219.2	228.7	238.1	244.8
120°	198.4	200.2	202.2	204.1	206.0	211.5	220.5	229.4	238.5	247.4	253.9
122.5°	212.9	213.9	215.1	216.1	217.3	222.2	230.9	239.6	248.3	257.1	263.2
125°	233.7	233.9	234.2	234.4	234.6	238.8	246.9	255.0	263.1	271.2	276.9
127.5°	254.0	254.3	254.5	254.8	255.0	258.4	265.1	271.7	278.4	285.1	290.2
130°	267.7	268.0	268.4	268.8	269.1	272.1	277.5	282.9	288.4	293.8	298.9
132.5°	280.2	280.8	281.4	282.0	282.6	285.1	289.5	293.8	298.2	302.6	307.4
135°	300.8	300.9	301.2	301.3	301.6	303.2	306.2	309.3	312.3	315.4	320.2
137.5°	319.7	319.8	320.1	320.2	320.4	321.5	323.5	325.5	327.4	329.4	333.5
140°	332.0	332.4	332.8	333.2	333.6	334.3	335.3	336.1	337.0	338.0	342.2
142.5°	344.1	344.3	344.5	344.6	344.8	345.0	345.4	345.7	346.0	346.3	350.1
145°	363.0	362.9	362.7	362.6	362.5	362.6	362.8	363.1	363.3	363.5	365.7
147.5°	378.3	378.5	378.9	379.1	379.4	379.7	379.9	380.2	380.4	380.7	381.3
150°	389.8	390.0	390.1	390.3	390.4	390.6	390.8	390.9	391.1	391.3	391.3
152.5°	399.3	399.5	399.7	399.9	400.1	400.3	400.4	400.6	400.6	400.7	400.9
155°	414.2	414.2	414.2	414.2	414.2	414.3	414.3	414.4	414.5	414.6	414.9
157.5°	426.9	426.8	426.7	426.6	426.5	426.5	426.6	426.6	426.6	426.7	427.1
160°	434.9	434.7	434.6	434.4	434.2	434.1	434.1	434.1	434.1	434.1	434.6
162.5°	442.0	441.7	441.5	441.2	441.1	441.0	441.0	441.1	441.2	441.2	441.6
165°	451.1	450.9	450.6	450.4	450.1	450.0	450.0	450.0	450.0	450.0	450.5
167.5°	458.4	458.1	457.8	457.5	457.1	457.0	457.1	457.1	457.2	457.2	457.8
170°	462.6	462.3	461.9	461.6	461.3	461.1	461.1	461.1	461.1	461.1	461.7
172.5°	465.9	465.5	465.2	464.9	464.5	464.3	464.3	464.3	464.3	464.3	464.9
175°	469.2	468.9	468.6	468.2	467.9	467.7	467.7	467.7	467.7	467.7	468.2
177.5°	470.7	470.3	470.1	469.9	469.6	469.4	469.4	469.4	469.4	469.4	469.9
180°	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5
2.5°	1173.9	1175.8	1177.6	1178.4	1178.2	1177.9	1177.7	1177.5
5°	1172.1	1174.4	1176.6	1177.6	1177.4	1177.0	1176.8	1176.5
7.5°	1165.0	1167.8	1170.7	1172.0	1171.6	1171.3	1170.9	1170.6
10°	1157.8	1160.7	1163.5	1164.7	1164.1	1163.5	1162.9	1162.4
12.5°	1148.2	1150.8	1153.4	1154.4	1153.8	1153.2	1152.7	1152.1
15°	1129.6	1132.5	1135.3	1136.6	1136.4	1136.0	1135.8	1135.5
17.5°	1105.5	1108.1	1110.6	1111.7	1111.3	1110.9	1110.5	1110.1
20°	1088.0	1090.6	1093.2	1094.6	1094.9	1095.2	1095.4	1095.8
22.5°	1068.9	1072.2	1075.4	1076.9	1076.8	1076.6	1076.4	1076.3
25°	1036.5	1040.2	1043.9	1045.8	1045.8	1045.8	1045.8	1045.8
27.5°	1002.7	1005.8	1009.0	1010.7	1011.0	1011.2	1011.5	1011.7
30°	979.6	983.0	986.3	988.1	988.1	988.1	988.1	988.1
32.5°	954.4	958.1	961.6	963.8	964.5	965.2	965.9	966.5
35°	917.2	921.5	925.7	928.5	929.6	930.7	931.9	932.9
37.5°	878.6	883.5	888.3	891.1	892.1	893.0	893.9	894.8
40°	853.0	857.8	862.7	865.6	866.7	867.9	869.0	870.2
42.5°	826.2	831.5	836.8	840.2	841.8	843.4	845.0	846.6
45°	786.2	791.6	797.0	800.9	803.2	805.4	807.7	809.9
47.5°	745.8	751.9	758.0	761.9	763.6	765.4	767.2	768.9
50°	718.0	724.6	731.1	735.3	737.4	739.3	741.4	743.3
52.5°	689.7	696.5	703.3	707.9	710.4	712.8	715.3	717.7
55°	647.2	654.8	662.6	667.6	669.8	672.1	674.4	676.7
57.5°	603.7	611.5	619.2	624.4	627.1	629.8	632.5	635.1
60°	573.4	581.4	589.4	594.9	598.1	601.2	604.3	607.5
62.5°	544.7	552.7	560.7	566.1	569.0	571.9	574.9	577.7
65°	499.0	507.5	516.1	521.7	524.6	527.4	530.3	533.1
67.5°	453.4	462.8	472.1	477.9	480.4	482.7	485.1	487.5
70°	423.2	432.4	441.4	447.4	450.3	453.1	455.9	458.8
72.5°	392.9	402.3	411.6	417.7	420.5	423.4	426.2	429.1
75°	346.9	356.3	365.7	372.1	375.5	379.0	382.4	385.7
77.5°	303.8	313.7	323.7	329.9	332.6	335.2	337.8	340.4
80°	275.7	285.4	295.1	301.3	304.2	307.0	309.9	312.7
82.5°	250.1	259.8	269.4	275.7	278.5	281.4	284.2	287.1
85°	214.2	223.9	233.5	239.8	242.6	245.5	248.3	251.2
87.5°	184.6	194.3	204.1	210.3	213.2	216.1	219.0	221.8
90°	173.7	183.7	193.7	200.2	203.3	206.3	209.3	212.3
92.5°	170.2	179.9	189.6	195.8	198.3	200.8	203.3	205.9
95°	172.5	181.6	190.9	196.8	199.7	202.5	205.4	208.2
97.5°	178.1	187.0	195.9	201.7	204.6	207.3	210.2	213.0
100°	182.8	191.4	199.8	205.6	208.6	211.7	214.6	217.6
102.5°	189.2	197.5	205.8	211.3	214.1	217.0	219.8	222.6
105°	199.3	207.2	215.2	220.5	223.3	226.0	228.8	231.5
107.5°	210.6	218.5	226.4	231.5	234.0	236.4	238.8	241.2
110°	219.1	226.8	234.5	239.5	241.6	243.7	245.8	247.9



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CATALOG NUMBER: S123DIW-S1165D460U930-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	226.5	234.0	241.6	246.6	249.1	251.6	254.0	256.5
115°	239.1	246.1	253.0	257.6	259.8	262.0	264.2	266.4
117.5°	251.6	258.4	265.1	269.5	271.5	273.5	275.5	277.4
120°	260.3	266.8	273.3	277.4	279.2	281.1	282.9	284.8
122.5°	269.3	275.4	281.5	285.4	287.2	288.9	290.7	292.5
125°	282.5	288.1	293.8	297.4	299.1	300.8	302.5	304.1
127.5°	295.5	300.6	305.8	309.2	310.7	312.3	313.8	315.4
130°	304.0	309.1	314.2	317.3	318.5	319.5	320.7	321.8
132.5°	312.2	317.0	321.8	324.9	326.4	327.9	329.4	330.8
135°	325.0	329.8	334.6	337.6	338.8	340.1	341.4	342.7
137.5°	337.7	341.9	346.0	348.7	349.8	350.9	352.0	353.1
140°	346.4	350.6	354.8	357.3	358.2	359.0	359.9	360.7
142.5°	353.8	357.5	361.3	363.6	364.6	365.6	366.6	367.5
145°	367.9	370.1	372.3	373.8	374.6	375.4	376.3	377.1
147.5°	382.0	382.7	383.4	384.0	384.5	385.1	385.6	386.1
150°	391.3	391.3	391.3	391.3	391.4	391.4	391.5	391.6
152.5°	401.0	401.1	401.3	401.1	400.9	400.6	400.2	399.9
155°	415.2	415.6	415.9	415.7	415.2	414.6	414.0	413.4
157.5°	427.5	427.8	428.1	428.0	427.6	427.1	426.6	426.2
160°	435.0	435.4	435.8	435.8	435.5	435.1	434.8	434.5
162.5°	442.1	442.5	442.9	442.8	442.3	441.7	441.2	440.7
165°	451.0	451.5	452.0	451.9	451.3	450.8	450.2	449.6
167.5°	458.3	458.8	459.3	459.3	458.8	458.3	457.8	457.2
170°	462.3	462.8	463.4	463.4	462.8	462.3	461.7	461.1
172.5°	465.4	465.9	466.4	466.4	465.8	465.2	464.6	464.1
175°	468.7	469.2	469.7	469.7	469.1	468.6	468.0	467.4
177.5°	470.3	470.7	471.0	471.0	470.5	470.1	469.6	469.1
180°	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3

(END OF REPORT)