

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: P332147-830

Luminaire Tested: **S123DIW-S560D1535U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332147-830
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-S560D1535U830-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7245.7 lumens
Efficiency: N/A
Efficacy: 119.6 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-Indirect

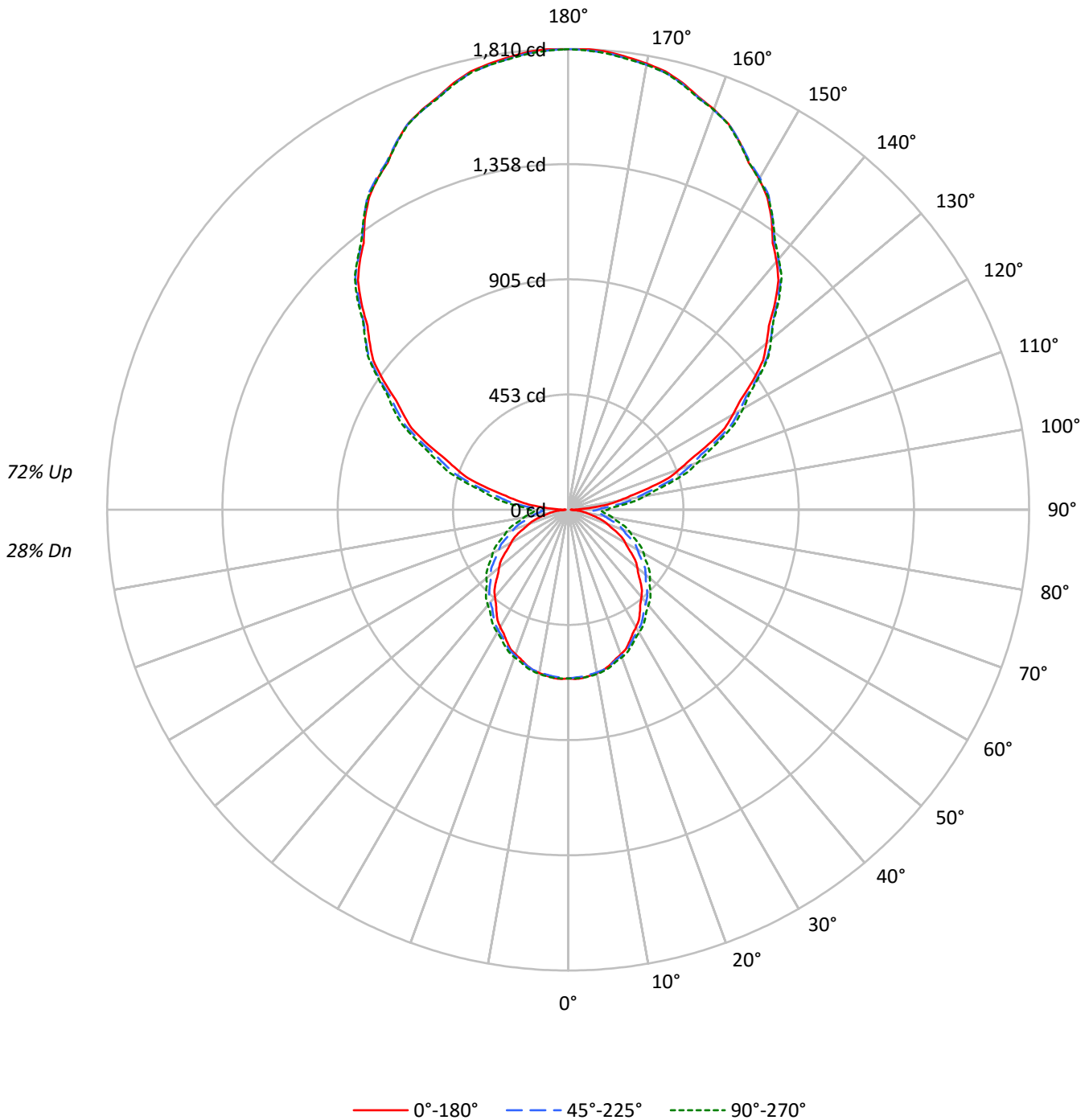
Input Watts (W): 60.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	28
1	92	88	84	80	82	79	75	72	61	59	57	46	44	43	31	30	29	23
2	84	76	70	65	75	68	63	59	53	50	47	40	37	35	27	25	24	18
3	76	67	60	54	68	60	54	49	47	42	39	35	32	29	24	22	20	15
4	70	59	51	45	62	53	46	41	41	37	33	31	28	25	21	19	17	13
5	64	52	44	38	57	47	40	35	37	32	28	28	24	21	19	17	15	11
6	58	47	39	33	52	42	35	30	33	28	24	25	21	19	17	15	13	10
7	54	42	34	29	48	38	31	26	30	25	21	22	19	16	15	13	12	9
8	50	38	30	25	44	34	28	23	27	22	19	20	17	14	14	12	10	8
9	46	34	27	22	41	31	25	20	25	20	17	19	15	13	13	11	9	7
10	43	31	24	20	39	28	22	18	23	18	15	17	14	12	12	10	8	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7134	7134	7134
5°	7156	6954	6959
10°	7093	6795	6761
15°	7001	6612	6544
20°	6871	6405	6306
25°	6709	6166	6056
30°	6544	5951	5803
35°	6359	5723	5601
40°	6181	5515	5382
45°	5986	5318	5210
50°	5793	5121	5019
55°	5578	4919	4848
60°	5369	4716	4670
65°	5156	4499	4462
70°	4837	4254	4245
75°	4430	3973	4029
80°	3958	3698	3779
85°	3521	3508	3633



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.8	0.9
10°-20°	179.1	2.5
20°-30°	267.9	3.7
30°-40°	319.9	4.4
40°-50°	334.7	4.6
50°-60°	314.1	4.3
60°-70°	262.3	3.6
70°-80°	187.7	2.6
80°-90°	117.3	1.6
90°-100°	188.1	2.6
100°-110°	404.4	5.6
110°-120°	634.5	8.8
120°-130°	809.0	11.2
130°-140°	896.0	12.4
140°-150°	873.9	12.1
150°-160°	734.1	10.1
160°-170°	488.7	6.7
170°-180°	171.1	2.4
0°-30°	509.8	7.0
0°-40°	829.7	11.5
0°-60°	1478.6	20.4
0°-90°	2045.9	28.2
90°-120°	1227.0	16.9
90°-150°	3805.8	52.5
90°-180°	5200.0	71.8
0°-180°	7245.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	663	663	663	663	663	
5°	664	662	658	663	663	63
15°	632	634	633	640	640	178
25°	570	577	580	589	589	263
35°	491	502	512	522	526	307
45°	401	419	437	450	456	310
55°	306	330	356	375	381	274
65°	212	240	272	292	300	209
75°	115	149	185	208	217	123
85°	35	72	110	133	142	37
90°	11	61	116	145	156	12
95°	92	130	177	204	212	100
105°	326	347	390	409	419	348
115°	608	621	644	662	667	601
125°	886	891	909	917	917	790
135°	1148	1156	1163	1170	1171	885
145°	1392	1394	1398	1402	1400	869
155°	1593	1593	1595	1600	1590	733
165°	1735	1731	1731	1739	1730	489
175°	1805	1800	1799	1807	1798	171
180°	1809	1809	1809	1809	1809	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8
2.5°	665.7	665.3	665.0	664.5	664.1	663.5	662.4	661.4	660.3	659.3	660.3
5°	663.5	663.2	662.9	662.6	662.2	661.6	660.6	659.7	658.7	657.7	659.0
7.5°	657.0	657.0	657.1	657.2	657.3	656.9	655.9	655.0	654.0	653.1	654.7
10°	651.3	651.6	651.9	652.2	652.5	652.3	651.5	650.7	649.9	649.1	650.7
12.5°	644.3	644.8	645.3	645.6	646.1	646.1	645.5	645.0	644.4	643.9	645.4
15°	631.8	632.3	632.7	633.2	633.7	633.9	633.7	633.5	633.4	633.2	634.8
17.5°	615.9	616.8	617.8	618.8	619.7	620.2	620.1	620.0	620.0	619.9	621.3
20°	604.4	605.3	606.2	607.2	608.1	608.8	609.2	609.4	609.7	610.1	611.5
22.5°	592.2	593.1	594.1	595.1	596.1	596.7	597.2	597.7	598.1	598.5	600.4
25°	570.4	572.0	573.6	575.2	576.8	577.9	578.3	578.8	579.3	579.8	581.8
27.5°	548.5	550.3	552.1	553.9	555.7	557.1	558.2	559.2	560.2	561.3	563.1
30°	532.8	534.9	537.0	539.1	541.2	542.9	544.1	545.4	546.7	548.0	550.0
32.5°	515.5	517.8	520.2	522.5	524.9	526.9	528.6	530.2	531.9	533.6	535.6
35°	491.0	493.5	496.1	498.7	501.2	503.6	505.7	507.7	509.8	511.9	514.3
37.5°	465.0	467.9	470.7	473.6	476.5	479.3	481.8	484.4	486.9	489.6	492.3
40°	447.6	450.5	453.5	456.3	459.2	462.2	465.4	468.6	471.8	475.0	477.8
42.5°	428.6	432.2	435.6	439.1	442.7	446.1	449.5	452.8	456.2	459.5	462.5
45°	401.4	405.3	409.2	413.0	416.8	420.8	424.8	428.8	432.8	436.8	439.9
47.5°	373.0	377.4	381.7	386.1	390.4	394.9	399.5	404.1	408.7	413.3	416.7
50°	354.5	359.0	363.4	368.0	372.5	377.2	382.2	387.2	392.1	397.1	400.8
52.5°	334.9	339.6	344.4	349.1	353.8	359.0	364.5	369.9	375.4	381.0	384.7
55°	306.1	311.4	316.7	322.0	327.3	332.8	338.7	344.4	350.2	355.9	360.2
57.5°	278.1	283.6	289.2	294.6	300.2	306.1	312.5	318.8	325.1	331.4	335.7
60°	258.4	264.3	270.0	275.8	281.5	287.8	294.4	301.0	307.5	314.1	318.6
62.5°	240.0	245.9	251.8	257.7	263.6	270.0	277.0	284.0	291.0	297.9	302.4
65°	211.5	217.8	224.0	230.4	236.6	243.3	250.3	257.3	264.4	271.5	276.3
67.5°	182.7	189.4	196.0	202.6	209.2	216.1	223.4	230.5	237.7	244.9	250.2
70°	162.5	169.4	176.3	183.1	190.0	197.4	205.0	212.7	220.5	228.2	233.3
72.5°	143.9	150.9	157.8	164.7	171.5	179.0	186.9	194.9	202.8	210.8	216.1
75°	114.8	122.3	129.9	137.4	145.0	152.8	160.8	168.8	176.8	184.8	190.1
77.5°	89.4	97.0	104.6	112.2	119.8	127.6	135.7	143.8	151.9	160.0	165.6
80°	71.4	79.4	87.2	95.1	102.9	111.0	119.3	127.7	136.1	144.4	149.9
82.5°	55.9	63.9	71.8	79.8	87.8	96.0	104.5	113.0	121.5	130.0	135.4
85°	35.3	43.4	51.5	59.5	67.5	75.7	84.3	92.7	101.2	109.7	115.2
87.5°	19.5	28.1	36.8	45.3	54.0	62.8	71.8	80.8	89.8	98.8	104.5
90°	10.8	21.9	32.9	43.8	54.9	66.5	78.8	91.1	103.4	115.7	122.4
92.5°	43.2	52.4	61.6	70.9	80.1	90.0	100.4	110.7	121.1	131.6	137.9
95°	91.8	100.3	108.8	117.2	125.6	135.1	145.5	155.9	166.3	176.6	182.9
97.5°	156.0	163.3	170.6	177.9	185.2	193.5	202.8	212.2	221.5	230.8	237.1
100°	199.8	206.8	213.9	220.8	227.9	235.9	244.9	253.8	262.8	271.7	277.4
102.5°	250.3	256.2	261.9	267.7	273.4	281.0	290.3	299.6	309.0	318.3	323.8
105°	325.6	330.1	334.5	339.0	343.5	350.6	360.3	370.1	379.8	389.6	394.1
107.5°	412.3	415.9	419.5	423.2	426.9	432.5	440.3	447.9	455.6	463.3	468.5
110°	466.3	469.8	473.3	476.8	480.3	485.6	492.7	499.7	506.8	513.8	519.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	523.1	525.8	528.6	531.4	534.1	538.7	544.9	551.2	557.5	563.8	569.4
115°	607.7	610.6	613.4	616.3	619.2	623.2	628.3	633.5	638.6	643.8	647.9
117.5°	693.3	695.2	697.0	698.8	700.7	703.9	708.4	713.0	717.7	722.3	726.0
120°	746.2	748.9	751.6	754.3	757.1	760.3	763.9	767.7	771.4	775.1	778.4
122.5°	801.9	803.7	805.6	807.4	809.2	812.2	816.4	820.6	824.8	829.1	831.8
125°	886.2	887.1	888.2	889.1	890.0	892.5	896.5	900.5	904.6	908.6	910.7
127.5°	964.7	966.6	968.4	970.3	972.1	974.6	977.8	980.9	984.1	987.2	988.6
130°	1017.0	1019.4	1021.7	1024.1	1026.4	1028.8	1031.0	1033.3	1035.6	1037.8	1039.6
132.5°	1068.7	1071.2	1073.7	1076.2	1078.6	1080.9	1082.7	1084.6	1086.5	1088.4	1089.8
135°	1148.4	1150.2	1151.9	1153.7	1155.4	1157.0	1158.4	1159.9	1161.3	1162.7	1164.4
137.5°	1222.2	1223.6	1225.1	1226.5	1228.0	1229.6	1231.4	1233.2	1235.1	1236.9	1238.1
140°	1272.8	1274.4	1275.9	1277.5	1279.1	1280.3	1281.1	1281.9	1282.7	1283.5	1285.5
142.5°	1319.4	1320.9	1322.3	1323.8	1325.2	1326.3	1326.9	1327.6	1328.2	1328.9	1330.8
145°	1392.1	1392.6	1393.1	1393.5	1394.0	1394.8	1395.7	1396.7	1397.6	1398.5	1399.5
147.5°	1455.1	1456.2	1457.4	1458.6	1459.7	1460.7	1461.6	1462.4	1463.3	1464.2	1464.6
150°	1499.5	1500.2	1500.7	1501.4	1502.0	1502.6	1503.3	1503.9	1504.5	1505.1	1505.1
152.5°	1535.9	1536.7	1537.7	1538.5	1539.4	1540.0	1540.4	1540.8	1541.2	1541.5	1542.1
155°	1593.3	1593.3	1593.3	1593.3	1593.3	1593.5	1593.7	1594.0	1594.4	1594.7	1596.0
157.5°	1642.2	1641.8	1641.4	1641.1	1640.7	1640.6	1640.9	1641.1	1641.3	1641.6	1642.9
160°	1672.9	1672.3	1671.6	1670.9	1670.4	1670.0	1670.0	1670.0	1670.0	1670.0	1671.6
162.5°	1700.2	1699.3	1698.4	1697.5	1696.7	1696.3	1696.6	1696.9	1697.0	1697.3	1698.9
165°	1735.4	1734.5	1733.5	1732.6	1731.6	1731.2	1731.2	1731.2	1731.2	1731.2	1733.1
167.5°	1763.6	1762.3	1761.0	1759.7	1758.5	1758.0	1758.2	1758.5	1758.8	1759.0	1761.0
170°	1779.4	1778.2	1777.0	1775.7	1774.4	1773.8	1773.8	1773.8	1773.8	1773.8	1776.0
172.5°	1792.0	1790.7	1789.4	1788.2	1787.0	1786.3	1786.3	1786.3	1786.3	1786.3	1788.3
175°	1805.1	1803.8	1802.5	1801.3	1800.0	1799.4	1799.4	1799.4	1799.4	1799.4	1801.3
177.5°	1810.4	1809.5	1808.5	1807.4	1806.4	1805.9	1805.9	1805.9	1805.9	1805.9	1807.4
180°	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8
2.5°	661.4	662.4	663.5	663.9	663.7	663.6	663.5	663.4
5°	660.3	661.6	662.9	663.5	663.3	663.1	663.0	662.8
7.5°	656.3	657.9	659.6	660.3	660.1	659.9	659.7	659.5
10°	652.3	653.9	655.5	656.1	655.8	655.5	655.2	654.9
12.5°	646.9	648.3	649.8	650.4	650.1	649.7	649.4	649.1
15°	636.4	638.0	639.6	640.4	640.2	640.0	639.9	639.7
17.5°	622.8	624.2	625.7	626.3	626.0	625.8	625.7	625.4
20°	613.0	614.4	615.9	616.7	616.8	617.0	617.2	617.3
22.5°	602.2	604.1	605.9	606.7	606.6	606.5	606.4	606.3
25°	583.9	586.1	588.1	589.2	589.2	589.2	589.2	589.2
27.5°	564.9	566.7	568.4	569.5	569.6	569.7	569.9	570.0
30°	551.9	553.7	555.7	556.7	556.7	556.7	556.7	556.7
32.5°	537.6	539.7	541.8	543.0	543.4	543.8	544.1	544.5
35°	516.7	519.2	521.5	523.0	523.7	524.3	525.0	525.7
37.5°	494.9	497.7	500.4	502.1	502.6	503.0	503.6	504.1
40°	480.5	483.2	486.0	487.7	488.3	489.0	489.6	490.2
42.5°	465.4	468.4	471.5	473.3	474.3	475.1	476.1	476.9
45°	442.9	445.9	449.0	451.2	452.4	453.7	455.1	456.3
47.5°	420.2	423.6	427.0	429.2	430.2	431.2	432.3	433.2
50°	404.4	408.2	411.9	414.2	415.4	416.5	417.6	418.8
52.5°	388.6	392.4	396.2	398.8	400.2	401.5	402.9	404.4
55°	364.6	368.9	373.2	376.1	377.4	378.6	379.9	381.3
57.5°	340.2	344.5	348.8	351.8	353.3	354.8	356.3	357.8
60°	323.1	327.5	332.1	335.2	337.0	338.7	340.4	342.2
62.5°	306.9	311.4	315.8	319.0	320.6	322.2	323.9	325.5
65°	281.1	285.9	290.8	294.0	295.6	297.2	298.8	300.4
67.5°	255.4	260.7	266.0	269.3	270.6	271.9	273.3	274.7
70°	238.5	243.6	248.7	252.0	253.6	255.2	256.8	258.4
72.5°	221.3	226.6	231.9	235.4	237.0	238.6	240.2	241.8
75°	195.4	200.8	206.0	209.6	211.5	213.5	215.4	217.4
77.5°	171.2	176.7	182.3	185.9	187.4	188.8	190.3	191.8
80°	155.3	160.8	166.3	169.8	171.4	173.0	174.6	176.2
82.5°	140.9	146.3	151.7	155.3	156.9	158.5	160.1	161.7
85°	120.6	126.1	131.6	135.1	136.7	138.3	139.9	141.5
87.5°	110.2	115.9	121.7	125.4	127.1	128.8	130.5	132.2
90°	129.1	135.8	142.6	147.0	149.3	151.6	153.7	156.0
92.5°	144.2	150.5	156.9	160.6	161.7	162.8	163.9	165.0
95°	189.2	195.4	201.6	205.6	207.2	208.8	210.4	212.0
97.5°	243.4	249.6	255.8	259.7	261.2	262.6	264.1	265.6
100°	283.0	288.5	294.2	298.0	300.3	302.6	304.8	307.0
102.5°	329.2	334.7	340.2	343.7	345.2	346.7	348.1	349.6
105°	398.6	403.0	407.6	410.9	412.9	415.0	417.1	419.1
107.5°	473.9	479.2	484.5	487.7	488.7	489.7	490.8	491.8
110°	524.7	530.1	535.6	538.6	539.2	539.9	540.5	541.2



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CATALOG NUMBER: S123DIW-S560D1535U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	575.0	580.5	586.1	589.5	590.7	592.0	593.3	594.6
115°	652.1	656.2	660.4	663.0	663.9	664.9	665.9	666.8
117.5°	729.8	733.5	737.3	739.3	739.7	740.1	740.5	740.8
120°	781.8	785.2	788.6	790.5	791.0	791.5	792.0	792.5
122.5°	834.5	837.3	840.0	841.5	841.8	842.0	842.3	842.4
125°	912.8	914.9	917.0	917.9	917.8	917.7	917.6	917.4
127.5°	990.0	991.5	992.9	993.4	993.1	992.7	992.3	991.9
130°	1041.4	1043.1	1044.9	1045.2	1044.0	1042.7	1041.5	1040.2
132.5°	1091.2	1092.6	1094.0	1094.4	1093.7	1093.2	1092.5	1091.9
135°	1166.0	1167.6	1169.2	1170.2	1170.4	1170.5	1170.6	1170.8
137.5°	1239.3	1240.5	1241.7	1242.2	1241.7	1241.3	1241.0	1240.6
140°	1287.7	1289.8	1291.8	1292.2	1290.8	1289.4	1288.0	1286.6
142.5°	1332.6	1334.5	1336.2	1336.7	1335.9	1334.9	1334.0	1333.1
145°	1400.5	1401.5	1402.4	1402.6	1402.0	1401.4	1400.7	1400.1
147.5°	1465.0	1465.4	1465.7	1465.3	1464.0	1462.6	1461.3	1460.0
150°	1505.1	1505.1	1505.1	1504.4	1502.8	1501.2	1499.7	1498.1
152.5°	1542.6	1543.0	1543.6	1543.0	1541.4	1539.8	1538.3	1536.7
155°	1597.2	1598.5	1599.8	1599.3	1597.0	1594.9	1592.6	1590.4
157.5°	1644.3	1645.6	1646.9	1646.7	1644.9	1643.1	1641.3	1639.6
160°	1673.2	1674.8	1676.3	1676.5	1675.3	1674.0	1672.7	1671.4
162.5°	1700.4	1702.0	1703.6	1703.5	1701.4	1699.4	1697.3	1695.4
165°	1734.9	1736.8	1738.7	1738.6	1736.4	1734.2	1731.9	1729.8
167.5°	1762.9	1764.9	1766.8	1766.8	1764.9	1762.9	1761.0	1759.0
170°	1778.2	1780.5	1782.6	1782.6	1780.5	1778.2	1776.0	1773.8
172.5°	1790.2	1792.2	1794.1	1794.0	1791.8	1789.6	1787.3	1785.2
175°	1803.2	1805.1	1806.9	1806.8	1804.6	1802.3	1800.2	1798.0
177.5°	1808.9	1810.4	1811.9	1811.8	1810.1	1808.3	1806.6	1804.8
180°	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3

(END OF REPORT)