

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: P332147-940

Luminaire Tested: **S123DIW-S560D1535U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332147-940
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-S560D1535U940-4F0-1E-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: 6854.9 lumens
Efficiency: N/A
Efficacy: 113.1 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

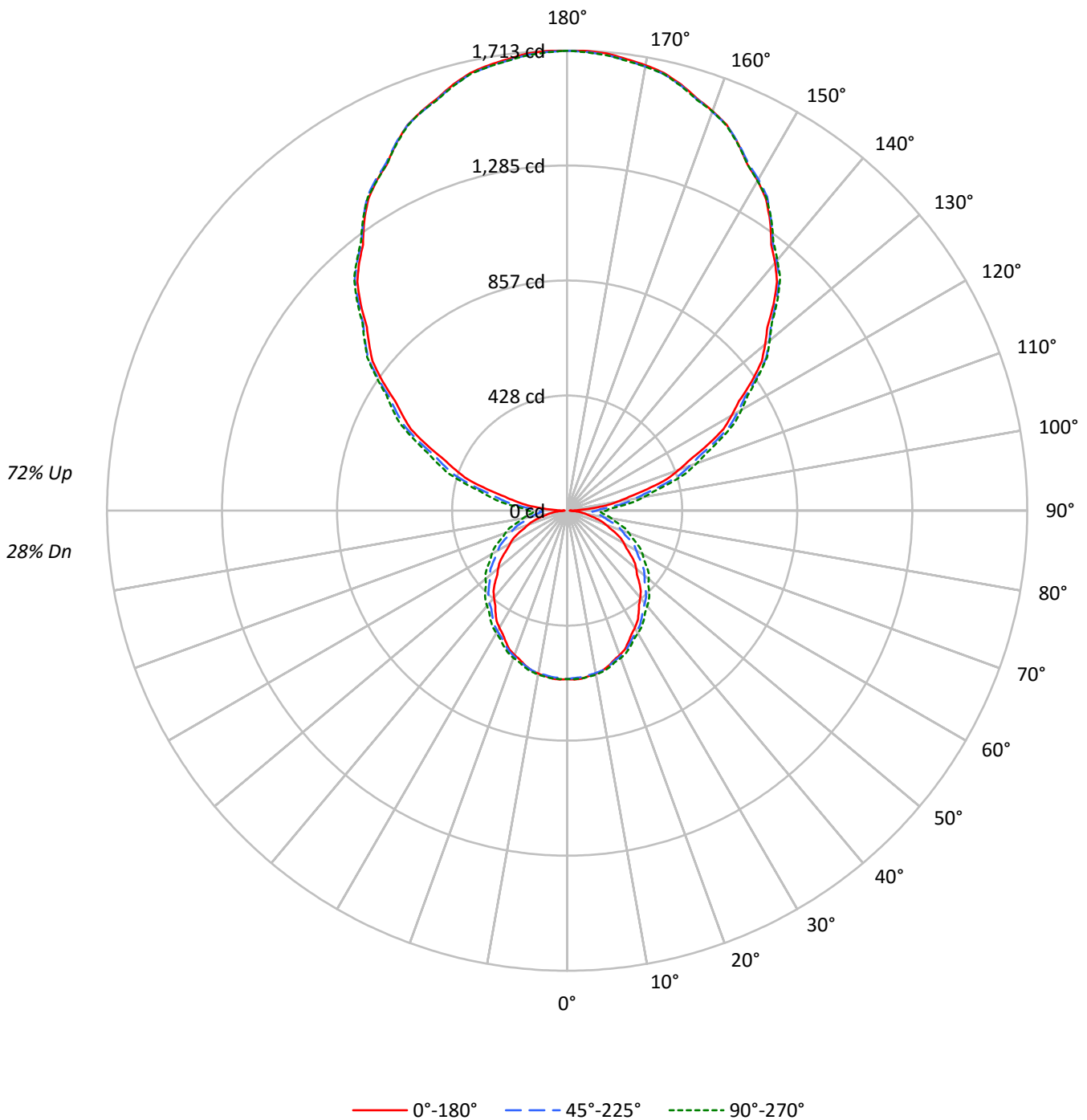
Input Watts (W): 60.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	6750	6750	6750
5°	6771	6579	6584
10°	6710	6428	6396
15°	6624	6256	6191
20°	6501	6059	5966
25°	6348	5833	5729
30°	6191	5629	5489
35°	6016	5414	5298
40°	5848	5218	5093
45°	5664	5030	4929
50°	5480	4845	4748
55°	5278	4654	4586
60°	5080	4461	4419
65°	4879	4255	4221
70°	4575	4025	4016
75°	4191	3760	3810
80°	3748	3499	3575
85°	3332	3319	3435



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.4	0.9
10°-20°	169.5	2.5
20°-30°	253.4	3.7
30°-40°	302.7	4.4
40°-50°	316.7	4.6
50°-60°	297.2	4.3
60°-70°	248.2	3.6
70°-80°	177.6	2.6
80°-90°	111.0	1.6
90°-100°	178.0	2.6
100°-110°	382.6	5.6
110°-120°	600.3	8.8
120°-130°	765.3	11.2
130°-140°	847.6	12.4
140°-150°	826.8	12.1
150°-160°	694.5	10.1
160°-170°	462.3	6.7
170°-180°	161.9	2.4
0°-30°	482.3	7.0
0°-40°	785.0	11.5
0°-60°	1398.8	20.4
0°-90°	1935.6	28.2
90°-120°	1160.9	16.9
90°-150°	3600.6	52.5
90°-180°	4919.0	71.8
0°-180°	6854.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	627	627	627	627	627	
5°	628	626	622	627	627	59
15°	598	600	599	605	605	168
25°	540	546	548	557	557	249
35°	464	475	484	494	497	290
45°	380	396	413	426	432	293
55°	290	312	337	354	361	259
65°	200	227	257	277	284	198
75°	109	141	175	197	206	116
85°	33	68	104	126	134	35
90°	10	57	110	137	148	11
95°	87	123	167	193	200	95
105°	308	328	368	387	396	329
115°	575	588	609	626	631	569
125°	838	843	860	868	868	748
135°	1086	1094	1100	1107	1108	837
145°	1317	1319	1323	1327	1325	822
155°	1507	1507	1509	1513	1505	694
165°	1642	1638	1638	1645	1636	463
175°	1708	1703	1702	1709	1701	162
180°	1712	1712	1712	1712	1712	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1
2.5°	629.8	629.5	629.1	628.7	628.3	627.7	626.7	625.7	624.7	623.8	624.7
5°	627.8	627.4	627.1	626.9	626.5	625.9	625.0	624.1	623.2	622.2	623.5
7.5°	621.6	621.6	621.7	621.8	621.9	621.4	620.5	619.6	618.8	617.9	619.4
10°	616.2	616.4	616.7	617.1	617.3	617.2	616.4	615.6	614.8	614.1	615.6
12.5°	609.6	610.0	610.5	610.8	611.3	611.3	610.7	610.2	609.7	609.1	610.6
15°	597.7	598.2	598.6	599.1	599.5	599.7	599.5	599.3	599.2	599.1	600.6
17.5°	582.6	583.5	584.5	585.4	586.3	586.7	586.7	586.6	586.6	586.5	587.8
20°	571.8	572.7	573.5	574.4	575.3	576.0	576.3	576.6	576.8	577.2	578.5
22.5°	560.3	561.2	562.0	563.0	563.9	564.5	565.0	565.4	565.9	566.2	568.0
25°	539.7	541.2	542.7	544.2	545.7	546.7	547.2	547.6	548.0	548.5	550.5
27.5°	518.9	520.6	522.4	524.1	525.8	527.1	528.1	529.1	530.0	531.0	532.7
30°	504.1	506.0	508.0	510.1	512.0	513.6	514.8	516.0	517.2	518.4	520.3
32.5°	487.7	489.9	492.1	494.4	496.6	498.5	500.1	501.6	503.2	504.8	506.8
35°	464.5	466.9	469.3	471.8	474.2	476.4	478.4	480.4	482.3	484.3	486.6
37.5°	439.9	442.6	445.3	448.1	450.8	453.4	455.8	458.3	460.7	463.2	465.7
40°	423.5	426.2	429.0	431.7	434.4	437.3	440.3	443.4	446.4	449.4	452.0
42.5°	405.5	408.8	412.1	415.4	418.8	422.0	425.3	428.4	431.6	434.7	437.6
45°	379.8	383.4	387.1	390.7	394.3	398.1	401.9	405.6	409.5	413.2	416.2
47.5°	352.8	357.0	361.1	365.2	369.3	373.6	378.0	382.3	386.6	391.0	394.2
50°	335.4	339.7	343.8	348.1	352.4	356.9	361.6	366.3	371.0	375.7	379.2
52.5°	316.8	321.3	325.8	330.3	334.7	339.7	344.8	350.0	355.2	360.4	364.0
55°	289.6	294.6	299.6	304.6	309.7	314.9	320.4	325.8	331.3	336.7	340.8
57.5°	263.1	268.3	273.6	278.7	284.0	289.6	295.6	301.6	307.6	313.5	317.6
60°	244.5	250.0	255.5	260.9	266.4	272.2	278.5	284.7	290.9	297.1	301.4
62.5°	227.0	232.6	238.3	243.8	249.4	255.5	262.1	268.7	275.3	281.9	286.1
65°	200.1	206.1	212.0	217.9	223.8	230.2	236.8	243.4	250.1	256.8	261.4
67.5°	172.8	179.1	185.4	191.6	198.0	204.5	211.3	218.1	224.9	231.7	236.7
70°	153.7	160.2	166.7	173.3	179.8	186.7	193.9	201.3	208.6	215.9	220.7
72.5°	136.2	142.8	149.3	155.8	162.3	169.3	176.8	184.4	191.9	199.5	204.5
75°	108.6	115.7	122.9	130.0	137.1	144.5	152.1	159.7	167.3	174.9	179.9
77.5°	84.5	91.8	99.0	106.1	113.3	120.7	128.4	136.1	143.7	151.4	156.7
80°	67.6	75.1	82.5	90.0	97.4	105.0	112.9	120.8	128.8	136.6	141.8
82.5°	52.9	60.5	67.9	75.5	83.1	90.9	98.9	106.9	114.9	123.0	128.1
85°	33.4	41.0	48.7	56.3	63.8	71.6	79.7	87.7	95.8	103.8	109.0
87.5°	18.5	26.6	34.8	42.9	51.1	59.4	67.9	76.4	85.0	93.5	98.9
90°	10.3	20.7	31.1	41.5	51.9	63.0	74.5	86.2	97.8	109.5	115.8
92.5°	40.8	49.6	58.3	67.1	75.8	85.2	95.0	104.8	114.6	124.5	130.5
95°	86.9	94.9	102.9	110.8	118.9	127.8	137.7	147.5	157.3	167.1	173.0
97.5°	147.6	154.5	161.4	168.3	175.2	183.1	191.9	200.7	209.6	218.4	224.4
100°	189.0	195.6	202.3	208.9	215.6	223.2	231.7	240.1	248.6	257.1	262.4
102.5°	236.8	242.4	247.8	253.2	258.7	265.8	274.6	283.5	292.3	301.1	306.3
105°	308.0	312.3	316.5	320.7	324.9	331.7	340.9	350.2	359.4	368.5	372.8
107.5°	390.0	393.5	396.9	400.4	403.9	409.2	416.5	423.7	431.1	438.3	443.3
110°	441.1	444.4	447.7	451.1	454.4	459.4	466.1	472.8	479.5	486.1	491.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	494.9	497.5	500.1	502.7	505.3	509.6	515.5	521.5	527.4	533.4	538.7
115°	574.9	577.7	580.3	583.1	585.8	589.6	594.4	599.3	604.1	609.0	613.0
117.5°	655.9	657.7	659.4	661.1	662.9	665.9	670.2	674.6	678.9	683.3	686.9
120°	706.0	708.6	711.1	713.6	716.2	719.3	722.7	726.3	729.8	733.3	736.5
122.5°	758.7	760.4	762.1	763.8	765.5	768.4	772.4	776.3	780.3	784.3	786.9
125°	838.4	839.3	840.3	841.2	842.0	844.4	848.2	851.9	855.8	859.6	861.6
127.5°	912.7	914.4	916.1	917.9	919.7	922.0	925.1	928.0	931.0	934.0	935.3
130°	962.2	964.4	966.6	968.8	971.1	973.3	975.4	977.6	979.7	981.9	983.6
132.5°	1011.1	1013.4	1015.7	1018.2	1020.5	1022.6	1024.3	1026.1	1027.9	1029.7	1031.0
135°	1086.5	1088.2	1089.8	1091.5	1093.1	1094.6	1095.9	1097.3	1098.7	1100.0	1101.6
137.5°	1156.3	1157.6	1159.0	1160.4	1161.8	1163.3	1165.0	1166.7	1168.5	1170.2	1171.4
140°	1204.2	1205.7	1207.1	1208.6	1210.1	1211.2	1212.0	1212.7	1213.5	1214.2	1216.2
142.5°	1248.2	1249.6	1251.0	1252.4	1253.7	1254.7	1255.4	1256.0	1256.6	1257.2	1259.0
145°	1317.1	1317.5	1317.9	1318.4	1318.8	1319.6	1320.4	1321.3	1322.2	1323.1	1324.0
147.5°	1376.6	1377.7	1378.8	1379.9	1381.0	1381.9	1382.8	1383.6	1384.4	1385.3	1385.6
150°	1418.6	1419.2	1419.8	1420.4	1421.0	1421.6	1422.2	1422.8	1423.3	1424.0	1424.0
152.5°	1453.0	1453.8	1454.7	1455.5	1456.3	1457.0	1457.3	1457.7	1458.0	1458.4	1458.9
155°	1507.3	1507.3	1507.3	1507.3	1507.3	1507.5	1507.8	1508.1	1508.4	1508.7	1509.9
157.5°	1553.6	1553.3	1552.9	1552.6	1552.2	1552.1	1552.4	1552.6	1552.8	1553.1	1554.3
160°	1582.7	1582.1	1581.4	1580.8	1580.3	1579.9	1579.9	1579.9	1579.9	1579.9	1581.4
162.5°	1608.5	1607.7	1606.8	1606.0	1605.2	1604.8	1605.1	1605.3	1605.5	1605.8	1607.3
165°	1641.8	1640.9	1640.0	1639.1	1638.3	1637.8	1637.8	1637.8	1637.8	1637.8	1639.6
167.5°	1668.5	1667.2	1666.1	1664.8	1663.7	1663.2	1663.4	1663.7	1663.9	1664.1	1666.0
170°	1683.5	1682.3	1681.1	1679.9	1678.7	1678.1	1678.1	1678.1	1678.1	1678.1	1680.3
172.5°	1695.3	1694.2	1692.9	1691.8	1690.6	1690.0	1690.0	1690.0	1690.0	1690.0	1691.8
175°	1707.7	1706.6	1705.3	1704.1	1702.9	1702.4	1702.4	1702.4	1702.4	1702.4	1704.1
177.5°	1712.8	1711.9	1710.9	1709.9	1709.0	1708.5	1708.5	1708.5	1708.5	1708.5	1709.9
180°	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1
2.5°	625.7	626.7	627.7	628.1	627.9	627.9	627.8	627.6
5°	624.7	625.9	627.1	627.7	627.5	627.3	627.2	627.1
7.5°	620.9	622.4	624.0	624.6	624.5	624.3	624.1	623.9
10°	617.2	618.7	620.2	620.7	620.5	620.2	619.8	619.6
12.5°	612.0	613.3	614.7	615.3	615.0	614.7	614.4	614.1
15°	602.1	603.6	605.1	605.8	605.6	605.5	605.4	605.2
17.5°	589.2	590.6	591.9	592.5	592.3	592.1	591.9	591.7
20°	580.0	581.3	582.6	583.4	583.5	583.7	583.9	584.0
22.5°	569.7	571.5	573.2	574.0	573.9	573.8	573.7	573.6
25°	552.4	554.5	556.4	557.4	557.4	557.4	557.4	557.4
27.5°	534.4	536.1	537.8	538.8	538.9	539.0	539.1	539.2
30°	522.1	523.9	525.8	526.6	526.6	526.6	526.6	526.6
32.5°	508.6	510.6	512.6	513.7	514.1	514.4	514.8	515.1
35°	488.8	491.2	493.4	494.8	495.4	496.1	496.7	497.3
37.5°	468.2	470.8	473.4	475.0	475.5	475.9	476.4	476.9
40°	454.6	457.2	459.8	461.4	462.0	462.6	463.2	463.8
42.5°	440.3	443.2	446.0	447.8	448.7	449.5	450.4	451.2
45°	419.0	421.9	424.8	426.9	428.0	429.3	430.5	431.7
47.5°	397.5	400.7	403.9	406.1	407.0	408.0	408.9	409.8
50°	382.6	386.2	389.7	391.9	393.0	394.0	395.1	396.2
52.5°	367.7	371.2	374.9	377.3	378.6	379.9	381.2	382.5
55°	344.9	349.0	353.1	355.8	357.0	358.2	359.4	360.7
57.5°	321.8	325.9	330.0	332.8	334.2	335.6	337.1	338.5
60°	305.7	309.9	314.1	317.1	318.8	320.4	322.1	323.8
62.5°	290.3	294.6	298.8	301.8	303.3	304.8	306.4	307.9
65°	265.9	270.5	275.1	278.1	279.6	281.2	282.7	284.2
67.5°	241.7	246.6	251.6	254.8	256.0	257.3	258.6	259.8
70°	225.6	230.4	235.3	238.4	240.0	241.5	243.0	244.5
72.5°	209.4	214.4	219.4	222.7	224.2	225.7	227.2	228.7
75°	184.9	189.9	194.9	198.3	200.1	202.0	203.8	205.6
77.5°	161.9	167.2	172.5	175.8	177.3	178.6	180.0	181.5
80°	147.0	152.1	157.3	160.6	162.1	163.6	165.1	166.7
82.5°	133.3	138.4	143.6	147.0	148.5	150.0	151.5	153.0
85°	114.1	119.3	124.5	127.8	129.3	130.8	132.3	133.8
87.5°	104.2	109.7	115.1	118.6	120.2	121.9	123.5	125.1
90°	122.2	128.5	134.9	139.1	141.2	143.4	145.4	147.6
92.5°	136.4	142.4	148.5	151.9	153.0	154.0	155.1	156.1
95°	179.0	184.9	190.7	194.5	196.0	197.5	199.0	200.5
97.5°	230.2	236.1	242.0	245.7	247.1	248.4	249.9	251.3
100°	267.7	273.0	278.3	282.0	284.1	286.2	288.4	290.4
102.5°	311.5	316.6	321.8	325.1	326.5	328.0	329.3	330.7
105°	377.1	381.3	385.6	388.7	390.7	392.6	394.6	396.5
107.5°	448.4	453.3	458.3	461.4	462.4	463.3	464.3	465.3
110°	496.4	501.5	506.7	509.5	510.1	510.8	511.4	512.0



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CATALOG NUMBER: S123DIW-S560D1535U940-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	543.9	549.2	554.5	557.7	558.8	560.1	561.3	562.5
115°	616.9	620.8	624.8	627.2	628.1	629.0	630.0	630.9
117.5°	690.5	693.9	697.5	699.5	699.8	700.2	700.5	700.9
120°	739.7	742.9	746.1	747.9	748.3	748.9	749.3	749.8
122.5°	789.5	792.1	794.7	796.1	796.4	796.6	796.8	797.0
125°	863.5	865.6	867.5	868.4	868.3	868.2	868.1	867.9
127.5°	936.7	938.0	939.3	939.9	939.5	939.1	938.8	938.4
130°	985.3	986.9	988.6	988.8	987.7	986.5	985.3	984.1
132.5°	1032.3	1033.7	1035.0	1035.4	1034.7	1034.2	1033.6	1033.0
135°	1103.1	1104.7	1106.2	1107.1	1107.2	1107.4	1107.5	1107.7
137.5°	1172.5	1173.6	1174.7	1175.2	1174.7	1174.4	1174.0	1173.7
140°	1218.3	1220.2	1222.2	1222.5	1221.2	1219.9	1218.5	1217.2
142.5°	1260.7	1262.5	1264.2	1264.6	1263.8	1262.9	1262.0	1261.2
145°	1325.0	1325.9	1326.8	1327.0	1326.4	1325.8	1325.2	1324.6
147.5°	1386.0	1386.3	1386.7	1386.3	1385.0	1383.8	1382.5	1381.3
150°	1424.0	1424.0	1424.0	1423.3	1421.7	1420.2	1418.8	1417.3
152.5°	1459.4	1459.8	1460.4	1459.8	1458.3	1456.8	1455.4	1453.8
155°	1511.1	1512.3	1513.5	1513.1	1510.9	1508.9	1506.7	1504.7
157.5°	1555.6	1556.8	1558.1	1557.9	1556.2	1554.5	1552.8	1551.2
160°	1583.0	1584.5	1585.9	1586.1	1584.9	1583.7	1582.5	1581.3
162.5°	1608.7	1610.3	1611.8	1611.6	1609.6	1607.8	1605.8	1603.9
165°	1641.4	1643.2	1644.9	1644.8	1642.7	1640.7	1638.5	1636.5
167.5°	1667.9	1669.7	1671.5	1671.5	1669.7	1667.9	1666.0	1664.1
170°	1682.3	1684.4	1686.5	1686.5	1684.4	1682.3	1680.3	1678.1
172.5°	1693.6	1695.5	1697.4	1697.3	1695.1	1693.1	1691.0	1688.9
175°	1705.9	1707.7	1709.5	1709.3	1707.3	1705.1	1703.1	1701.0
177.5°	1711.4	1712.8	1714.2	1714.1	1712.4	1710.7	1709.1	1707.4
180°	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7

(END OF REPORT)