

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: P332146-940

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332146-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
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-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1535 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7584.1 lumens
Efficiency: N/A
Efficacy: 125.2 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

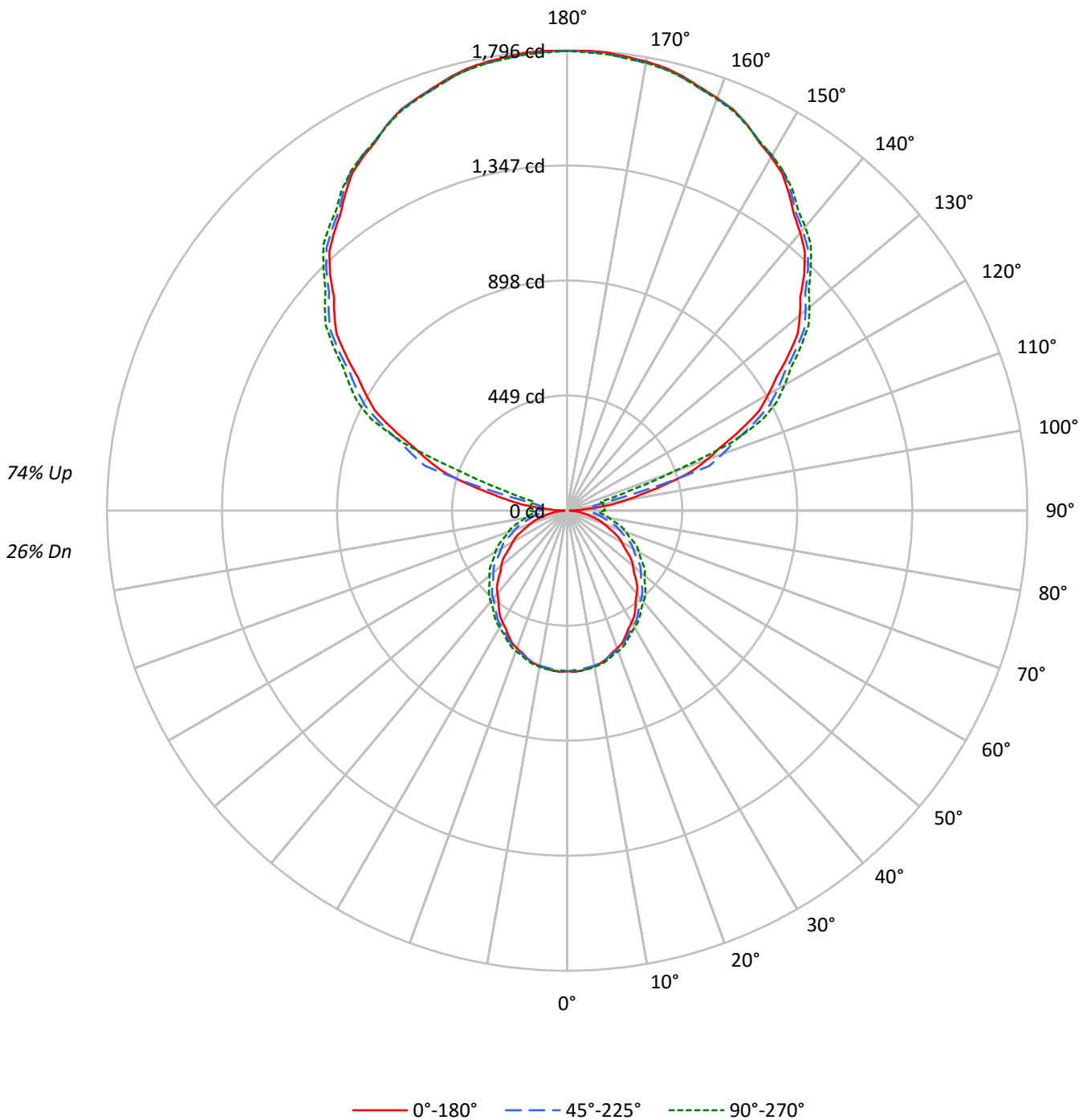
Input Watts (W): 60.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34	26
1	92	87	83	80	82	78	75	72	60	58	56	44	42	41	29	28	27	20
2	83	76	70	65	74	68	63	58	52	49	46	38	36	34	25	24	23	17
3	76	66	59	54	67	59	53	48	46	42	38	34	31	28	22	20	19	14
4	69	59	51	45	61	52	46	41	41	36	32	30	27	24	20	18	16	12
5	63	52	44	38	56	46	40	35	36	31	28	26	23	21	17	16	14	10
6	58	46	38	33	52	42	35	30	32	27	24	24	20	18	16	14	12	9
7	54	42	34	29	48	37	31	26	29	24	21	22	18	16	14	12	11	8
8	50	38	30	25	44	34	27	23	26	22	18	20	16	14	13	11	10	7
9	46	34	27	22	41	31	24	20	24	19	16	18	15	12	12	10	9	6
10	43	31	24	20	38	28	22	18	22	18	14	17	13	11	11	9	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	0.8
10°-20°	169.5	2.2
20°-30°	253.4	3.3
30°-40°	302.7	4.0
40°-50°	316.7	4.2
50°-60°	297.2	3.9
60°-70°	248.2	3.3
70°-80°	177.6	2.3
80°-90°	110.9	1.5
90°-100°	131.7	1.7
100°-110°	359.7	4.7
110°-120°	779.4	10.3
120°-130°	969.6	12.8
130°-140°	1024.5	13.5
140°-150°	952.0	12.6
150°-160°	766.5	10.1
160°-170°	494.7	6.5
170°-180°	170.5	2.2
0°-30°	482.3	6.4
0°-40°	785.0	10.4
0°-60°	1398.8	18.4
0°-90°	1935.5	25.5
90°-120°	1270.9	16.8
90°-150°	4217.0	55.6
90°-180°	5649.0	74.5
0°-180°	7584.1	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	109	137	147	10
95°	89	65	109	138	146	106
105°	403	427	343	139	135	427
115°	749	766	801	830	842	739
125°	1052	1064	1088	1105	1113	940
135°	1309	1317	1329	1345	1345	1007
145°	1510	1518	1521	1529	1532	945
155°	1662	1660	1661	1667	1660	766
165°	1753	1749	1748	1757	1749	495
175°	1794	1788	1789	1797	1788	171
180°	1794	1794	1794	1794	1794	



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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	51.0	59.4	67.9	76.4	84.9	93.5	98.8
90°	10.3	20.6	31.0	41.4	51.8	62.8	74.4	86.0	97.6	109.1	115.6
92.5°	33.2	39.0	44.9	50.7	56.6	64.8	75.3	85.9	96.4	106.9	113.9
95°	88.8	82.6	76.4	70.2	63.9	66.2	76.9	87.6	98.3	109.0	115.7
97.5°	170.1	170.0	170.0	169.8	169.7	162.6	148.3	134.1	119.8	105.7	112.5
100°	231.4	242.2	253.0	263.8	274.6	260.4	221.1	181.9	142.7	103.4	110.2
102.5°	301.3	310.0	318.5	327.2	335.8	318.3	274.7	231.1	187.5	143.8	140.8
105°	402.7	409.7	416.5	423.5	430.3	423.7	403.6	383.4	363.3	343.2	295.0
107.5°	509.1	514.8	520.5	526.2	531.9	539.9	550.4	560.8	571.1	581.6	547.2
110°	580.0	585.1	590.2	595.3	600.4	607.6	617.0	626.2	635.6	645.0	639.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	648.3	652.6	657.0	661.4	665.8	672.5	681.6	690.7	699.7	708.8	712.8
115°	748.6	752.2	755.8	759.4	763.0	768.8	777.0	785.2	793.3	801.4	808.0
117.5°	846.3	849.6	852.9	856.3	859.6	864.5	871.0	877.4	884.0	890.5	896.4
120°	906.6	910.0	913.4	916.9	920.2	925.0	930.9	936.7	942.6	948.5	954.4
122.5°	968.4	971.0	973.6	976.2	978.7	983.0	988.9	994.8	1000.7	1006.6	1011.6
125°	1052.5	1054.9	1057.3	1059.6	1062.0	1066.0	1071.6	1077.2	1082.7	1088.3	1092.1
127.5°	1134.6	1136.8	1139.1	1141.3	1143.5	1147.2	1152.3	1157.3	1162.3	1167.4	1171.4
130°	1185.8	1188.0	1190.3	1192.5	1194.7	1197.9	1202.1	1206.4	1210.6	1214.8	1218.9
132.5°	1234.3	1236.7	1239.0	1241.4	1243.7	1246.5	1249.9	1253.3	1256.7	1260.1	1264.0
135°	1309.1	1310.7	1312.4	1314.0	1315.6	1317.9	1320.7	1323.6	1326.4	1329.3	1332.9
137.5°	1373.0	1375.1	1377.2	1379.4	1381.5	1383.4	1384.9	1386.5	1388.1	1389.7	1393.6
140°	1415.1	1416.8	1418.6	1420.4	1422.2	1423.8	1425.1	1426.5	1427.8	1429.1	1432.6
142.5°	1454.6	1456.3	1457.9	1459.6	1461.2	1462.5	1463.5	1464.5	1465.4	1466.4	1469.4
145°	1509.8	1511.6	1513.6	1515.6	1517.4	1518.7	1519.3	1519.8	1520.5	1521.1	1522.9
147.5°	1561.0	1562.5	1563.8	1565.1	1566.5	1567.4	1568.1	1568.7	1569.2	1569.9	1570.8
150°	1593.0	1593.9	1594.8	1595.7	1596.6	1597.3	1597.9	1598.6	1599.1	1599.7	1600.3
152.5°	1621.8	1622.3	1622.6	1623.1	1623.5	1623.9	1624.3	1624.6	1625.0	1625.3	1626.4
155°	1662.3	1661.8	1661.2	1660.6	1660.0	1659.8	1660.2	1660.5	1660.7	1661.0	1662.5
157.5°	1693.8	1693.8	1693.7	1693.6	1693.6	1693.4	1693.1	1692.8	1692.6	1692.2	1694.0
160°	1713.1	1712.7	1712.4	1712.2	1711.8	1711.5	1711.3	1710.9	1710.7	1710.4	1712.2
162.5°	1731.2	1730.4	1729.7	1728.8	1728.0	1727.5	1727.2	1727.0	1726.6	1726.4	1728.4
165°	1753.0	1752.1	1751.2	1750.3	1749.4	1748.9	1748.6	1748.3	1748.0	1747.7	1750.1
167.5°	1770.0	1768.9	1767.7	1766.6	1765.3	1764.8	1764.8	1764.8	1764.8	1764.8	1767.1
170°	1779.7	1778.5	1777.3	1776.1	1775.0	1774.3	1774.3	1774.3	1774.3	1774.3	1776.7
172.5°	1786.1	1784.7	1783.2	1781.8	1780.4	1779.8	1780.0	1780.3	1780.5	1780.7	1783.2
175°	1794.3	1792.9	1791.4	1789.9	1788.4	1787.8	1788.1	1788.4	1788.7	1789.0	1791.1
177.5°	1796.4	1795.3	1794.1	1793.0	1791.7	1791.3	1791.5	1791.7	1792.0	1792.2	1794.1
180°	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3



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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	109.6	115.0	118.5	120.2	121.8	123.4	125.1
90°	121.9	128.2	134.6	138.8	140.9	143.0	145.1	147.2
92.5°	120.8	127.8	134.6	139.0	140.8	142.5	144.3	146.1
95°	122.5	129.3	136.1	140.2	141.7	143.2	144.8	146.3
97.5°	119.4	126.4	133.2	137.6	139.4	141.2	143.0	144.8
100°	117.0	123.8	130.5	134.8	136.6	138.4	140.3	142.0
102.5°	137.8	134.6	131.6	131.1	133.1	135.2	137.2	139.3
105°	246.8	198.6	150.4	127.3	129.3	131.3	133.2	135.2
107.5°	512.8	478.4	444.0	407.7	369.5	331.4	293.2	255.0
110°	633.3	627.5	621.6	598.2	557.0	515.9	474.7	433.5



TEST NUMBER: P332146-940

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	716.8	720.9	724.9	723.1	715.4	707.8	700.3	692.6
115°	814.6	821.2	827.9	832.3	834.7	837.1	839.5	842.0
117.5°	902.4	908.4	914.4	918.1	919.5	921.0	922.4	923.8
120°	960.3	966.1	972.0	975.4	976.5	977.6	978.7	979.7
122.5°	1016.6	1021.6	1026.7	1029.8	1031.2	1032.4	1033.8	1035.1
125°	1095.9	1099.7	1103.5	1106.2	1107.9	1109.5	1111.2	1112.8
127.5°	1175.4	1179.3	1183.2	1185.4	1185.9	1186.3	1186.8	1187.2
130°	1223.0	1227.0	1231.1	1233.3	1233.6	1233.9	1234.2	1234.6
132.5°	1267.9	1271.9	1275.9	1277.9	1278.2	1278.4	1278.5	1278.7
135°	1336.5	1340.2	1343.8	1345.5	1345.4	1345.2	1345.1	1345.0
137.5°	1397.4	1401.2	1405.0	1407.0	1407.2	1407.4	1407.5	1407.7
140°	1436.1	1439.5	1443.0	1444.8	1444.9	1445.1	1445.3	1445.5
142.5°	1472.4	1475.3	1478.4	1479.8	1479.7	1479.6	1479.6	1479.5
145°	1524.6	1526.5	1528.3	1529.5	1530.1	1530.7	1531.3	1532.0
147.5°	1571.7	1572.7	1573.7	1573.8	1572.9	1572.1	1571.3	1570.5
150°	1600.9	1601.5	1602.0	1602.0	1601.5	1600.9	1600.4	1599.7
152.5°	1627.5	1628.5	1629.6	1629.4	1628.2	1626.8	1625.6	1624.3
155°	1664.0	1665.4	1667.0	1666.8	1665.0	1663.2	1661.4	1659.7
157.5°	1695.8	1697.5	1699.3	1699.1	1696.7	1694.4	1692.1	1689.8
160°	1714.0	1715.7	1717.4	1717.3	1715.2	1713.2	1711.1	1709.1
162.5°	1730.4	1732.4	1734.4	1734.5	1732.7	1730.8	1729.0	1727.2
165°	1752.4	1754.8	1757.2	1757.3	1755.2	1753.2	1751.1	1749.0
167.5°	1769.5	1771.8	1774.2	1774.2	1771.8	1769.5	1767.1	1764.8
170°	1779.1	1781.5	1783.9	1783.9	1781.5	1779.1	1776.7	1774.3
172.5°	1785.5	1787.9	1790.2	1790.1	1787.5	1784.9	1782.3	1779.7
175°	1793.1	1795.2	1797.3	1797.2	1794.7	1792.4	1790.0	1787.7
177.5°	1796.0	1797.9	1799.8	1799.6	1797.2	1794.8	1792.4	1790.1
180°	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3

(END OF REPORT)