

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: P332801-930

Luminaire Tested: **S124DIW-S795D1560U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332801-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIW-S795D1560U930-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 795 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1560 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

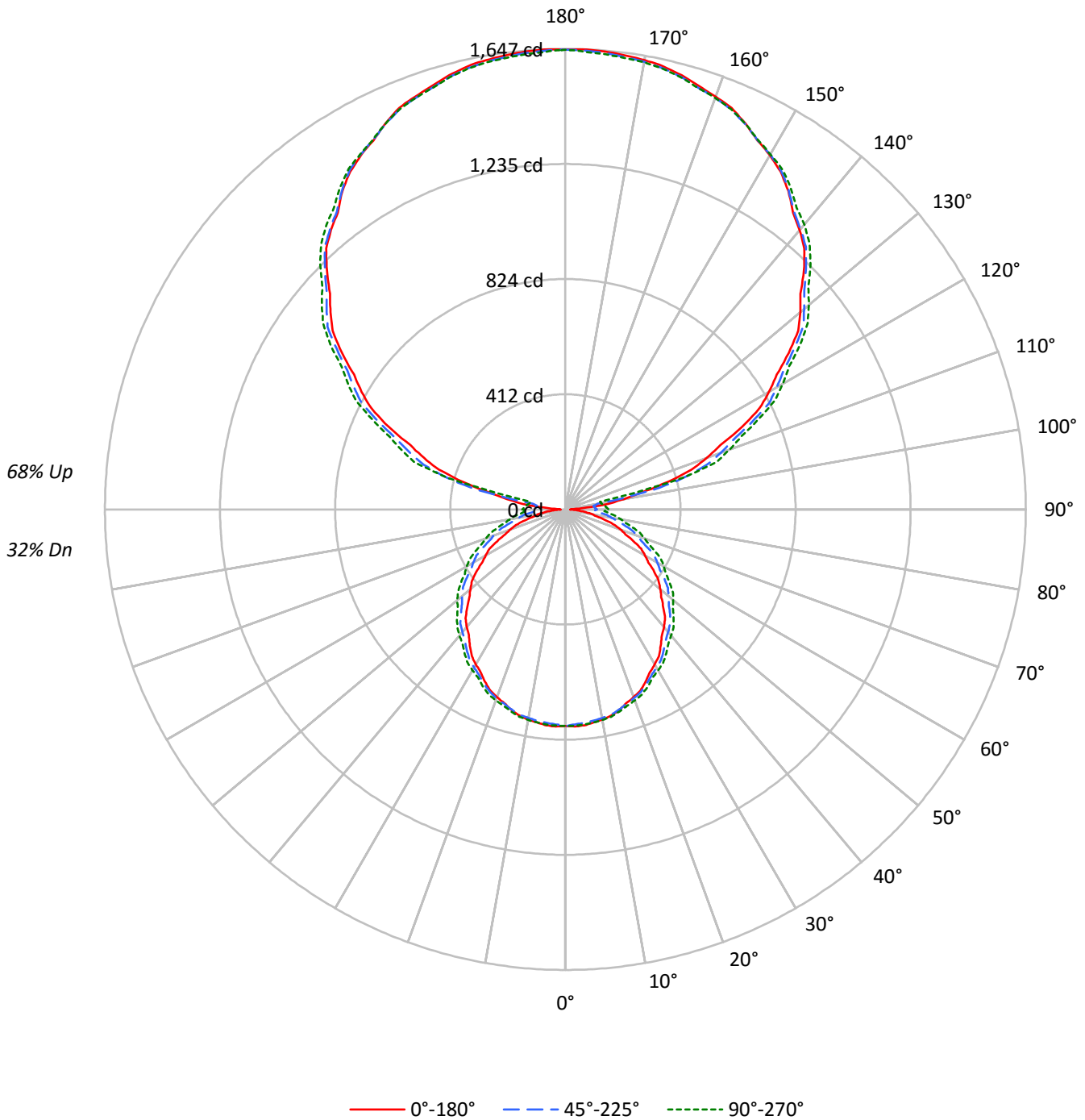
Lumens per Lamp: N/A  
Luminaire Lumens: 7729.6 lumens  
Efficiency: N/A  
Efficacy: 113.5 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

Input Watts (W): 68.1  
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



TEST NUMBER: P332801-930  
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### Luminous Intensity Polar Plot





TEST NUMBER: P332801-930

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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	50	30	10	0	
RCR																						
0	103	103	103	103	92	92	92	92	73	73	73	55	55	55	39	39	39	32				32
1	93	89	85	81	83	80	76	73	63	61	59	48	46	45	34	33	32	25				25
2	84	77	71	65	76	69	64	59	55	51	48	41	39	37	29	28	26	21				21
3	77	67	60	54	69	61	54	49	48	44	40	36	33	31	26	24	22	17				17
4	70	59	51	45	63	53	47	41	42	38	34	32	29	26	23	21	19	15				15
5	64	53	45	39	57	47	41	35	38	33	29	29	25	22	20	18	16	12				12
6	59	47	39	33	53	42	35	30	34	29	25	26	22	19	18	16	14	11				11
7	54	42	34	29	49	38	31	26	31	25	22	23	20	17	17	14	12	10				10
8	50	38	31	25	45	35	28	23	28	23	19	21	18	15	15	13	11	9				9
9	47	35	27	22	42	31	25	21	25	20	17	20	16	13	14	12	10	8				8
10	44	32	25	20	39	29	23	18	23	18	15	18	15	12	13	11	9	7				7

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	6252	6252	6252
5°	6271	6110	6128
10°	6233	6010	6006
15°	6177	5894	5862
20°	6093	5766	5723
25°	5998	5624	5569
30°	5895	5481	5411
35°	5779	5336	5274
40°	5685	5196	5129
45°	5547	5069	5005
50°	5430	4922	4876
55°	5310	4783	4722
60°	5121	4605	4583
65°	4915	4414	4411
70°	4666	4197	4210
75°	4318	3960	4029
80°	3929	3731	3851
85°	3441	3526	3748



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	73.3	0.9
10°-20°	210.1	2.7
20°-30°	317.7	4.1
30°-40°	384.4	5.0
40°-50°	406.4	5.3
50°-60°	382.5	4.9
60°-70°	317.3	4.1
70°-80°	222.9	2.9
80°-90°	130.8	1.7
90°-100°	131.0	1.7
100°-110°	413.9	5.4
110°-120°	722.9	9.4
120°-130°	891.5	11.5
130°-140°	940.5	12.2
140°-150°	872.8	11.3
150°-160°	702.4	9.1
160°-170°	453.0	5.9
170°-180°	156.1	2.0
0°-30°	601.2	7.8
0°-40°	985.6	12.8
0°-60°	1774.4	23.0
0°-90°	2445.4	31.6
90°-120°	1267.8	16.4
90°-150°	3972.6	51.4
90°-180°	5284.0	68.4
0°-180°	7729.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	774	774	774	774	774	
5°	775	772	767	773	773	74
15°	743	744	741	749	748	209
25°	680	685	688	697	698	313
35°	595	605	614	626	629	372
45°	496	513	529	543	548	383
55°	388	407	433	449	455	346
65°	269	297	326	347	355	266
75°	149	182	218	241	250	159
85°	46	83	121	146	156	49
90°	18	66	113	144	155	12
95°	79	68	102	132	142	96
105°	378	403	441	470	436	396
115°	696	708	734	755	762	685
125°	975	980	998	1017	1025	870
135°	1207	1206	1216	1232	1240	930
145°	1390	1393	1393	1399	1405	868
155°	1523	1524	1521	1525	1522	702
165°	1607	1601	1601	1610	1600	454
175°	1644	1637	1638	1647	1634	156
180°	1644	1644	1644	1644	1644	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	774.5	774.5	774.5	774.5	774.5	774.5	774.5	774.5	774.5	774.5	774.5
2.5°	777.2	776.7	776.2	775.8	775.3	774.5	773.2	772.0	770.8	769.6	770.6
5°	775.3	774.7	774.1	773.6	773.0	772.0	770.6	769.3	767.9	766.6	768.2
7.5°	768.7	768.3	768.0	767.7	767.3	766.5	765.5	764.3	763.2	762.1	763.9
10°	763.1	763.0	762.8	762.5	762.4	761.8	760.8	759.9	758.9	757.9	759.7
12.5°	755.5	755.5	755.5	755.4	755.4	755.0	754.4	753.7	753.0	752.4	754.0
15°	743.2	743.4	743.6	743.8	744.0	743.8	743.2	742.7	742.0	741.4	743.2
17.5°	726.4	726.9	727.5	728.1	728.7	728.9	728.8	728.7	728.6	728.5	730.3
20°	714.6	715.2	715.8	716.3	716.9	717.3	717.5	717.6	717.9	718.0	720.0
22.5°	701.4	702.1	702.9	703.6	704.3	704.9	705.2	705.6	705.9	706.3	708.2
25°	679.9	681.0	682.2	683.4	684.5	685.4	686.0	686.6	687.1	687.7	689.8
27.5°	656.0	657.6	659.3	661.0	662.8	664.1	665.0	665.8	666.7	667.6	669.5
30°	640.0	641.6	643.1	644.7	646.2	647.6	649.0	650.3	651.7	653.0	655.1
32.5°	622.6	624.5	626.4	628.2	630.1	631.7	633.2	634.7	636.3	637.7	640.2
35°	594.9	597.2	599.6	601.9	604.1	606.3	608.2	610.2	612.0	614.0	616.7
37.5°	567.0	569.6	572.3	574.9	577.6	580.2	582.5	584.9	587.3	589.7	592.5
40°	548.9	551.5	553.9	556.4	559.0	561.6	564.3	567.0	569.6	572.3	575.3
42.5°	528.2	530.9	533.8	536.5	539.4	542.3	545.5	548.7	551.9	555.0	558.2
45°	496.0	499.7	503.4	507.0	510.7	514.4	518.0	521.7	525.3	529.0	532.3
47.5°	465.4	469.1	472.9	476.7	480.5	484.5	488.7	492.9	497.2	501.4	504.8
50°	443.1	447.4	451.6	455.8	460.1	464.3	468.6	472.8	477.0	481.3	485.2
52.5°	420.9	425.2	429.4	433.7	437.9	442.5	447.3	452.2	457.1	461.9	465.7
55°	388.5	392.6	396.6	400.6	404.7	409.6	415.4	421.2	427.0	432.8	436.6
57.5°	352.3	357.3	362.3	367.3	372.3	377.6	383.4	389.1	394.9	400.6	405.2
60°	328.6	333.7	338.7	343.7	348.7	354.4	360.8	367.1	373.5	379.8	384.3
62.5°	305.7	311.3	316.7	322.2	327.7	333.6	340.0	346.3	352.7	359.1	363.5
65°	268.8	275.0	281.2	287.3	293.5	299.9	306.4	313.0	319.5	326.0	330.8
67.5°	233.3	239.9	246.4	252.9	259.5	266.3	273.3	280.3	287.3	294.3	299.2
70°	209.0	215.6	222.1	228.7	235.2	242.1	249.5	256.8	264.1	271.4	276.6
72.5°	185.4	192.1	198.9	205.5	212.2	219.5	227.3	235.1	242.9	250.6	255.7
75°	149.2	156.3	163.4	170.6	177.7	185.3	193.4	201.5	209.6	217.7	223.1
77.5°	115.4	122.9	130.4	138.0	145.5	153.6	162.1	170.6	179.0	187.5	193.0
80°	94.5	102.2	109.9	117.6	125.4	133.5	141.9	150.4	158.9	167.4	173.2
82.5°	73.7	81.7	89.8	97.8	105.7	114.1	122.5	131.0	139.5	148.0	153.8
85°	46.0	54.1	62.1	70.3	78.4	86.7	95.4	104.0	112.8	121.4	127.2
87.5°	26.4	34.9	43.4	51.8	60.3	68.9	77.8	86.7	95.6	104.4	110.4
90°	17.5	28.3	39.0	49.7	60.4	71.0	81.4	92.0	102.4	112.9	120.1
92.5°	28.7	35.8	42.9	50.0	57.1	65.9	76.3	86.8	97.3	107.8	114.8
95°	78.9	76.0	73.1	70.1	67.2	69.8	77.9	86.2	94.3	102.5	109.3
97.5°	153.8	165.1	176.3	187.6	198.9	193.2	170.6	147.9	125.2	102.6	107.8
100°	211.2	221.1	231.1	241.0	250.9	240.8	210.6	180.3	150.2	120.0	120.6
102.5°	276.1	284.1	292.1	300.1	308.1	313.3	315.8	318.2	320.7	323.1	278.0
105°	377.9	383.4	388.9	394.4	399.8	406.8	415.3	423.9	432.4	440.8	448.1
107.5°	473.9	477.8	481.8	485.8	489.8	496.1	504.7	513.3	521.9	530.5	536.4
110°	538.1	541.6	545.1	548.6	552.1	558.1	566.5	574.9	583.3	591.7	596.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	600.3	604.2	608.1	612.0	615.8	621.3	628.5	635.8	642.9	650.1	654.3
115°	696.2	698.7	701.3	703.8	706.4	710.6	716.5	722.4	728.3	734.2	739.0
117.5°	783.3	785.5	787.6	789.7	791.8	796.1	802.4	808.8	815.1	821.4	825.3
120°	841.6	843.3	845.0	846.6	848.3	851.8	857.1	862.4	867.7	873.1	877.5
122.5°	896.7	897.5	898.2	899.0	899.8	903.0	908.7	914.4	920.0	925.7	929.8
125°	974.8	975.7	976.6	977.5	978.4	981.0	985.2	989.5	993.8	998.1	1002.5
127.5°	1049.4	1049.5	1049.5	1049.6	1049.7	1052.2	1057.1	1062.1	1067.1	1072.0	1075.3
130°	1096.8	1096.9	1097.0	1097.1	1097.1	1099.2	1103.1	1107.0	1110.8	1114.8	1118.5
132.5°	1141.1	1141.4	1141.7	1142.0	1142.3	1144.2	1147.7	1151.2	1154.7	1158.2	1161.8
135°	1206.6	1206.4	1206.1	1205.8	1205.6	1206.6	1209.1	1211.5	1214.0	1216.4	1220.0
137.5°	1265.4	1265.3	1265.3	1265.2	1265.1	1266.0	1267.8	1269.7	1271.5	1273.4	1276.8
140°	1303.7	1304.2	1304.5	1304.8	1305.2	1305.7	1306.5	1307.3	1308.0	1308.7	1312.1
142.5°	1337.5	1338.5	1339.4	1340.4	1341.3	1341.9	1342.1	1342.3	1342.5	1342.7	1345.5
145°	1390.2	1390.8	1391.5	1392.1	1392.7	1393.0	1393.0	1393.0	1393.0	1393.0	1394.5
147.5°	1432.2	1433.6	1434.9	1436.2	1437.6	1438.1	1437.9	1437.6	1437.3	1437.0	1437.5
150°	1462.7	1463.6	1464.5	1465.4	1466.3	1466.6	1466.4	1466.2	1465.8	1465.6	1465.6
152.5°	1487.6	1488.5	1489.3	1490.1	1490.9	1491.2	1490.6	1490.1	1489.6	1489.1	1489.6
155°	1523.4	1523.6	1523.9	1524.2	1524.4	1524.2	1523.4	1522.6	1521.8	1520.9	1522.0
157.5°	1553.6	1553.5	1553.3	1553.1	1553.0	1552.4	1551.4	1550.5	1549.6	1548.7	1550.1
160°	1571.3	1570.5	1569.7	1568.9	1568.1	1567.5	1567.2	1566.9	1566.7	1566.4	1568.1
162.5°	1587.1	1586.0	1584.9	1584.0	1582.9	1582.3	1581.9	1581.7	1581.4	1581.1	1582.7
165°	1607.0	1605.6	1604.3	1602.9	1601.5	1600.8	1600.8	1600.8	1600.8	1600.8	1603.0
167.5°	1622.7	1621.3	1619.8	1618.5	1617.0	1616.2	1616.1	1615.9	1615.8	1615.6	1618.0
170°	1631.6	1629.9	1628.2	1626.6	1625.0	1624.3	1624.6	1624.9	1625.1	1625.4	1627.6
172.5°	1637.4	1635.8	1634.2	1632.6	1630.9	1630.2	1630.5	1630.8	1631.0	1631.3	1633.5
175°	1643.8	1642.2	1640.5	1638.9	1637.3	1636.6	1636.9	1637.1	1637.4	1637.7	1640.1
177.5°	1646.8	1645.3	1643.7	1642.2	1640.7	1640.1	1640.5	1641.0	1641.4	1641.8	1643.6
180°	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	774.5	774.5	774.5	774.5	774.5	774.5	774.5	774.5
2.5°	771.7	772.8	773.9	774.4	774.2	774.0	773.9	773.7
5°	769.7	771.3	772.7	773.5	773.2	773.1	772.9	772.7
7.5°	765.6	767.3	769.1	769.8	769.6	769.4	769.2	769.1
10°	761.4	763.1	764.9	765.6	765.5	765.2	765.1	764.9
12.5°	755.5	757.2	758.7	759.5	759.5	759.4	759.4	759.3
15°	744.9	746.7	748.4	749.2	749.0	748.8	748.6	748.4
17.5°	732.0	733.8	735.6	736.4	736.2	736.1	735.9	735.7
20°	721.9	723.8	725.8	726.8	726.8	726.8	726.8	726.8
22.5°	710.1	712.0	714.0	715.1	715.4	715.7	716.0	716.3
25°	691.9	694.1	696.2	697.3	697.5	697.7	697.9	698.1
27.5°	671.5	673.4	675.5	676.5	676.8	677.0	677.3	677.4
30°	657.2	659.3	661.5	662.8	663.2	663.5	663.9	664.3
32.5°	642.6	645.1	647.4	648.9	649.2	649.6	650.0	650.4
35°	619.4	622.1	624.8	626.4	627.0	627.5	628.2	628.8
37.5°	595.2	597.9	600.6	602.3	602.9	603.6	604.1	604.8
40°	578.1	581.1	583.9	585.7	586.5	587.3	588.1	588.8
42.5°	561.4	564.6	567.8	569.7	570.3	571.0	571.6	572.2
45°	535.6	538.8	542.1	544.2	545.2	546.2	547.1	548.0
47.5°	508.2	511.6	515.0	517.2	518.4	519.6	520.7	521.9
50°	489.0	492.8	496.7	499.2	500.3	501.6	502.7	503.9
52.5°	469.6	473.4	477.3	479.8	480.9	482.1	483.2	484.5
55°	440.4	444.3	448.2	450.7	451.8	453.0	454.1	455.3
57.5°	409.9	414.4	419.0	421.8	422.9	424.0	425.1	426.2
60°	388.7	393.1	397.5	400.6	402.1	403.7	405.2	406.8
62.5°	367.9	372.3	376.7	379.8	381.3	382.9	384.3	385.9
65°	335.7	340.6	345.4	348.5	350.1	351.6	353.1	354.7
67.5°	304.1	309.0	313.9	317.1	318.6	320.1	321.6	323.1
70°	281.8	287.1	292.3	295.5	296.9	298.2	299.5	300.9
72.5°	260.7	265.8	270.8	274.1	275.6	277.1	278.6	280.1
75°	228.4	233.8	239.3	242.8	244.6	246.3	248.0	249.7
77.5°	198.4	203.9	209.4	213.0	214.9	216.7	218.6	220.5
80°	179.0	184.7	190.5	194.1	195.7	197.2	198.8	200.3
82.5°	159.8	165.8	171.7	175.5	177.2	178.9	180.6	182.3
85°	133.0	138.8	144.6	148.4	150.3	152.2	154.2	156.1
87.5°	116.3	122.2	128.1	132.0	133.8	135.6	137.4	139.2
90°	127.3	134.6	141.8	146.5	148.5	150.7	152.7	154.8
92.5°	121.9	129.0	136.1	140.4	142.0	143.7	145.4	147.0
95°	116.2	123.0	129.9	134.3	136.3	138.3	140.3	142.4
97.5°	112.9	118.1	123.4	126.9	128.9	130.8	132.7	134.7
100°	121.2	121.6	122.2	123.4	125.0	126.5	128.2	129.8
102.5°	233.0	187.9	142.8	121.1	122.6	124.3	125.8	127.3
105°	455.4	462.7	469.9	469.4	461.1	452.8	444.6	436.3
107.5°	542.3	548.3	554.2	558.4	560.8	563.3	565.7	568.2
110°	601.6	606.6	611.6	615.2	617.6	620.0	622.3	624.7





TEST NUMBER: P332801-930

CATALOG NUMBER: S124DIW-S795D1560U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	658.5	662.7	666.8	670.2	672.8	675.3	677.9	680.5
115°	743.8	748.5	753.3	756.4	757.7	759.1	760.4	761.8
117.5°	829.2	833.2	837.1	839.7	841.1	842.6	844.0	845.5
120°	881.9	886.2	890.6	893.4	894.4	895.4	896.3	897.3
122.5°	934.0	938.2	942.4	944.9	945.7	946.6	947.5	948.3
125°	1007.0	1011.5	1015.9	1019.0	1020.3	1021.8	1023.2	1024.7
127.5°	1078.6	1081.9	1085.2	1087.4	1088.5	1089.6	1090.7	1091.8
130°	1122.3	1126.0	1129.8	1132.2	1133.3	1134.5	1135.7	1136.9
132.5°	1165.4	1169.0	1172.6	1174.8	1175.8	1176.7	1177.7	1178.6
135°	1223.7	1227.3	1230.9	1233.6	1235.3	1237.0	1238.7	1240.4
137.5°	1280.3	1283.6	1287.0	1289.2	1290.0	1290.8	1291.6	1292.3
140°	1315.3	1318.7	1322.0	1324.3	1325.5	1326.7	1328.0	1329.3
142.5°	1348.3	1351.1	1353.9	1355.8	1356.6	1357.5	1358.4	1359.2
145°	1395.9	1397.3	1398.7	1400.1	1401.4	1402.7	1404.1	1405.4
147.5°	1437.8	1438.2	1438.5	1439.2	1440.1	1441.0	1441.9	1442.8
150°	1465.6	1465.6	1465.6	1465.7	1466.0	1466.2	1466.6	1466.8
152.5°	1490.0	1490.4	1490.9	1491.0	1490.9	1490.7	1490.5	1490.4
155°	1523.1	1524.2	1525.3	1525.4	1524.6	1523.8	1523.0	1522.2
157.5°	1551.5	1553.0	1554.4	1554.4	1553.0	1551.5	1550.1	1548.7
160°	1569.7	1571.3	1573.0	1573.0	1571.3	1569.7	1568.1	1566.4
162.5°	1584.5	1586.1	1587.7	1587.6	1585.8	1583.9	1582.0	1580.1
165°	1605.2	1607.4	1609.6	1609.4	1607.0	1604.5	1602.1	1599.6
167.5°	1620.4	1622.8	1625.2	1625.1	1622.3	1619.6	1616.8	1614.1
170°	1629.8	1632.0	1634.2	1633.9	1631.2	1628.4	1625.7	1622.9
172.5°	1635.7	1637.9	1640.1	1639.6	1636.7	1633.8	1630.8	1627.8
175°	1642.6	1645.1	1647.6	1647.1	1643.8	1640.5	1637.3	1634.0
177.5°	1645.4	1647.1	1648.9	1648.5	1645.8	1643.2	1640.5	1637.9
180°	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8

(END OF REPORT)