

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: P332959-830

Luminaire Tested: **S124RDIP-S1020D365U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332959-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124RDIP-S1020D365U830-4F0-1E-UDD-F1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 365 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5128.3 lumens  
Efficiency: N/A  
Efficacy: 117.9 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Semi-Direct

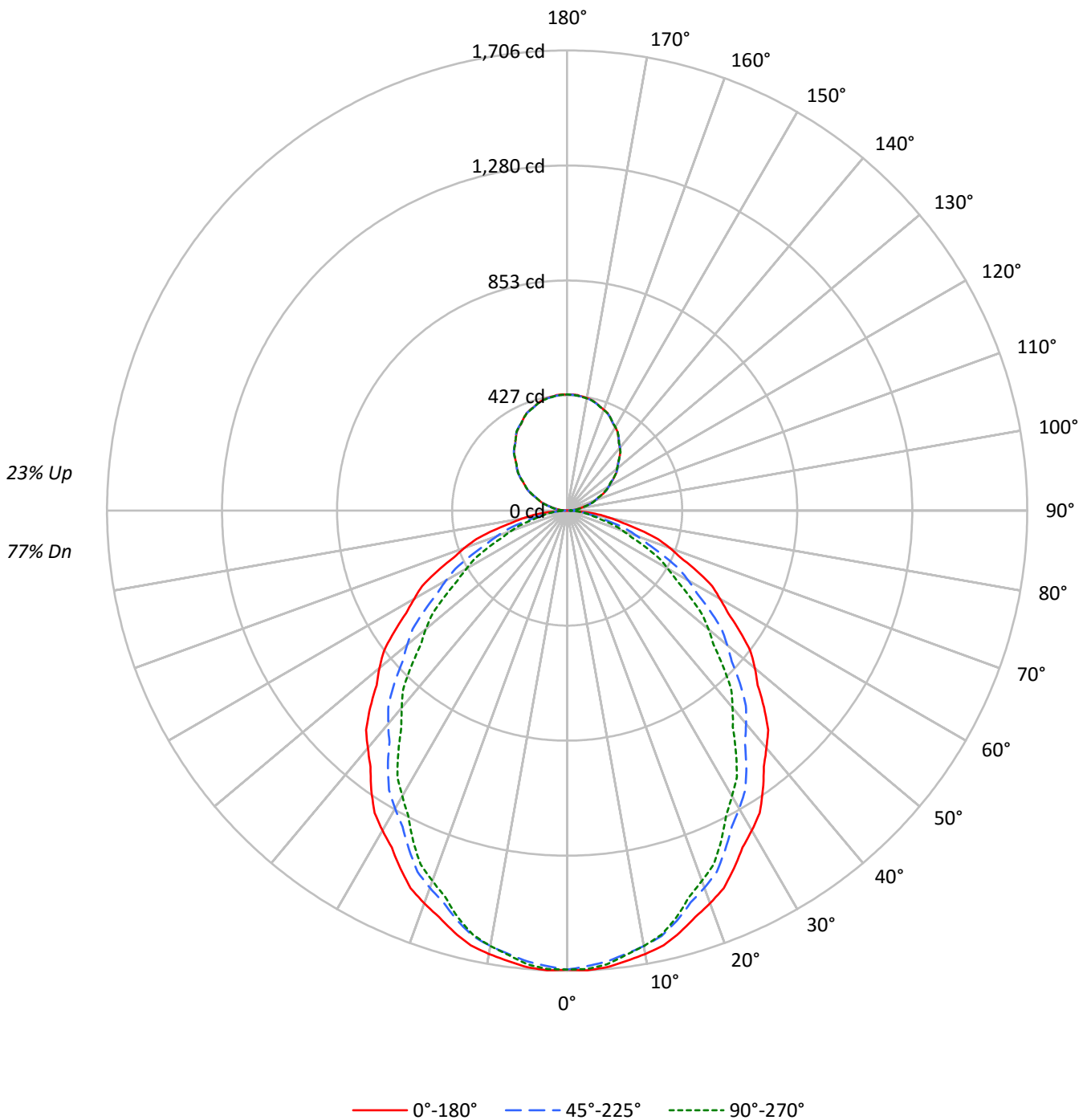
Input Watts (W): 43.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	114	114	114	114	108	108	108	108	98	98	98	89	89	89	81	81	81	77				
1	104	100	96	92	99	95	92	89	87	84	82	79	77	75	72	70	69	65				
2	95	88	81	76	91	84	78	74	77	72	68	70	67	63	64	61	59	55				
3	87	78	70	64	83	74	67	62	68	63	58	62	58	54	57	53	50	47				
4	80	69	61	55	76	66	59	53	61	55	50	56	51	47	51	47	44	41				
5	74	62	53	47	70	59	52	46	55	48	43	50	45	41	46	42	38	36				
6	68	56	47	41	65	54	46	40	50	43	38	46	40	36	42	38	34	32				
7	63	51	42	37	60	49	41	36	45	39	34	42	36	32	39	34	30	28				
8	59	46	38	33	56	45	37	32	41	35	30	38	33	29	36	31	27	25				
9	55	42	35	29	52	41	34	29	38	32	27	35	30	26	33	28	25	23				
10	52	39	32	27	49	38	31	26	35	29	25	33	28	24	31	26	23	21				

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

	0°	45°	90°
0°	13739	13739	13739
5°	13771	13602	13686
10°	13684	13439	13439
15°	13527	13157	13059
20°	13311	12785	12550
25°	13036	12351	12038
30°	12767	11893	11395
35°	12471	11417	10749
40°	12113	10877	10053
45°	11783	10340	9344
50°	11408	9722	8593
55°	11005	9080	7776
60°	10563	8375	6944
65°	10157	7494	6124
70°	9567	6522	5200
75°	8821	5405	4226
80°	7694	4119	3877
85°	6521	3742	3501



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	159.9	3.1
10°-20°	445.8	8.7
20°-30°	643.8	12.6
30°-40°	729.7	14.2
40°-50°	704.7	13.7
50°-60°	586.0	11.4
60°-70°	404.6	7.9
70°-80°	205.1	4.0
80°-90°	53.9	1.1
90°-100°	28.4	0.6
100°-110°	84.2	1.6
110°-120°	142.8	2.8
120°-130°	188.3	3.7
130°-140°	211.5	4.1
140°-150°	207.8	4.1
150°-160°	174.8	3.4
160°-170°	116.3	2.3
170°-180°	40.7	0.8
0°-30°	1249.5	24.4
0°-40°	1979.2	38.6
0°-60°	3269.8	63.8
0°-90°	3933.5	76.7
90°-120°	255.4	5.0
90°-150°	863.0	16.8
90°-180°	1195.0	23.3
0°-180°	5128.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1702	1702	1702	1702	1702	
5°	1699	1694	1678	1691	1689	161
15°	1618	1606	1574	1571	1562	456
25°	1464	1438	1387	1365	1351	674
35°	1265	1222	1158	1115	1091	790
45°	1032	982	906	844	818	795
55°	782	728	645	580	552	699
65°	532	474	392	338	321	525
75°	283	234	173	145	136	299
85°	70	46	40	38	38	79
90°	1	5	7	9	10	5
95°	20	23	25	26	26	22
105°	78	78	79	80	81	82
115°	145	145	145	144	144	143
125°	212	211	211	210	210	188
135°	273	275	275	274	273	211
145°	331	333	333	333	332	207
155°	380	380	379	380	379	175
165°	413	412	412	413	412	116
175°	430	428	428	430	428	41
180°	431	431	431	431	431	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9
2.5°	1706.1	1705.2	1704.2	1703.4	1702.4	1700.6	1698.1	1695.5	1693.0	1690.5	1693.0
5°	1699.3	1698.2	1697.0	1695.8	1694.7	1692.3	1688.9	1685.5	1682.0	1678.5	1681.4
7.5°	1683.9	1682.7	1681.5	1680.3	1679.0	1676.2	1671.7	1667.2	1662.6	1658.1	1660.0
10°	1669.3	1667.9	1666.4	1665.0	1663.6	1660.2	1655.0	1649.8	1644.5	1639.4	1640.5
12.5°	1650.6	1648.9	1647.2	1645.6	1643.9	1639.9	1633.8	1627.7	1621.6	1615.4	1616.1
15°	1618.5	1615.9	1613.4	1610.7	1608.1	1603.2	1595.9	1588.7	1581.5	1574.2	1573.7
17.5°	1579.7	1575.9	1572.2	1568.4	1564.6	1558.4	1549.7	1541.1	1532.4	1523.6	1522.0
20°	1549.4	1545.7	1541.9	1538.1	1534.4	1527.6	1517.8	1507.9	1498.1	1488.2	1485.9
22.5°	1516.1	1511.8	1507.6	1503.4	1499.2	1491.8	1481.3	1470.7	1460.2	1449.6	1446.1
25°	1463.5	1458.2	1453.0	1447.8	1442.6	1434.1	1422.2	1410.3	1398.5	1386.6	1381.7
27.5°	1408.2	1401.7	1395.2	1388.6	1382.1	1372.4	1359.7	1347.1	1334.4	1321.6	1315.6
30°	1369.6	1362.4	1355.2	1347.9	1340.7	1330.2	1316.6	1303.0	1289.4	1275.8	1268.6
32.5°	1329.0	1320.8	1312.6	1304.5	1296.3	1285.2	1271.1	1257.1	1242.9	1228.9	1220.5
35°	1265.4	1256.1	1246.8	1237.6	1228.3	1216.4	1201.9	1187.5	1173.0	1158.5	1148.7
37.5°	1197.3	1187.8	1178.3	1168.7	1159.1	1146.3	1130.3	1114.3	1098.2	1082.1	1071.1
40°	1149.4	1139.8	1130.3	1120.7	1111.2	1098.2	1081.7	1065.1	1048.6	1032.1	1019.9
42.5°	1103.5	1093.5	1083.5	1073.5	1063.5	1049.8	1032.6	1015.4	998.2	981.0	968.7
45°	1032.1	1021.4	1010.7	999.9	989.2	975.2	957.8	940.5	923.0	905.7	891.6
47.5°	958.4	947.3	936.2	925.2	914.1	899.6	881.5	863.4	845.3	827.3	812.6
50°	908.3	897.0	885.7	874.4	863.1	848.2	829.7	811.2	792.6	774.1	759.6
52.5°	857.2	846.1	835.1	824.1	812.9	798.0	778.9	760.0	740.9	722.0	707.3
55°	781.9	770.3	758.7	747.2	735.6	720.4	701.5	682.7	663.9	645.1	630.0
57.5°	707.4	695.3	683.2	671.2	659.2	643.9	625.4	606.8	588.2	569.8	554.5
60°	654.2	642.6	631.0	619.4	607.8	592.8	574.3	555.7	537.2	518.7	503.6
62.5°	606.2	594.2	582.1	570.0	558.1	542.5	523.5	504.5	485.5	466.6	452.6
65°	531.7	519.2	506.8	494.4	481.9	466.4	447.9	429.3	410.8	392.3	379.8
67.5°	454.3	442.3	430.5	418.5	406.5	392.0	374.8	357.6	340.4	323.2	312.5
70°	405.3	393.1	381.0	368.8	356.7	342.3	325.8	309.2	292.8	276.3	266.7
72.5°	353.2	342.1	331.1	320.2	309.2	295.9	280.3	264.7	249.1	233.6	225.4
75°	282.8	272.1	261.4	250.6	240.0	227.7	214.1	200.6	186.9	173.3	166.6
77.5°	211.4	202.3	193.2	184.1	175.0	164.9	153.9	143.0	132.0	120.9	117.1
80°	165.5	157.1	148.7	140.3	132.0	123.4	114.7	106.0	97.3	88.6	87.8
82.5°	125.9	118.2	110.5	102.7	95.1	88.7	83.8	78.8	73.8	68.8	68.1
85°	70.4	64.6	58.8	53.0	47.2	43.8	43.0	42.1	41.3	40.4	39.8
87.5°	24.2	22.5	20.8	19.1	17.4	16.5	16.4	16.3	16.2	16.0	15.9
90°	1.0	1.8	2.6	3.5	4.2	5.0	5.6	6.1	6.7	7.4	7.7
92.5°	7.2	8.1	9.0	9.9	10.8	11.5	12.0	12.3	12.8	13.2	13.5
95°	20.0	20.6	21.3	22.0	22.6	23.3	23.8	24.3	24.8	25.4	25.5
97.5°	34.9	35.4	36.0	36.5	37.0	37.6	38.2	38.8	39.4	40.1	40.3
100°	46.7	46.9	47.2	47.5	47.8	48.3	48.9	49.7	50.3	51.0	51.1
102.5°	58.9	59.0	59.1	59.3	59.4	59.8	60.3	61.0	61.5	62.1	62.4
105°	77.6	77.7	77.8	77.9	77.9	78.0	78.4	78.7	79.0	79.3	79.5
107.5°	97.3	97.4	97.5	97.6	97.6	97.6	97.7	97.7	97.8	97.8	98.0
110°	110.6	110.7	110.8	111.0	111.1	111.2	111.1	111.0	110.9	110.9	110.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	124.4	124.4	124.5	124.5	124.5	124.5	124.3	124.2	124.1	123.9	123.9
115°	145.2	145.2	145.2	145.2	145.2	145.2	145.0	144.9	144.7	144.6	144.5
117.5°	164.8	164.9	164.9	164.9	165.0	165.0	164.9	164.9	164.7	164.6	164.4
120°	177.9	178.1	178.4	178.7	179.1	179.1	178.9	178.6	178.4	178.2	177.9
122.5°	191.4	191.5	191.7	191.8	191.9	191.9	191.8	191.7	191.6	191.5	191.2
125°	211.5	211.5	211.5	211.5	211.5	211.4	211.4	211.3	211.2	211.1	211.0
127.5°	229.7	229.9	230.2	230.4	230.5	230.6	230.5	230.4	230.3	230.2	230.0
130°	242.5	242.7	242.9	243.2	243.4	243.5	243.5	243.5	243.5	243.5	243.4
132.5°	255.5	255.7	255.8	256.0	256.2	256.2	256.2	256.1	256.1	256.0	255.8
135°	272.8	273.2	273.6	274.1	274.6	274.8	274.8	274.8	274.8	274.8	274.7
137.5°	291.5	291.8	292.0	292.2	292.4	292.6	292.7	292.8	292.9	293.0	292.8
140°	304.1	304.3	304.3	304.5	304.7	304.7	304.7	304.7	304.7	304.7	304.7
142.5°	315.6	315.7	315.8	315.9	316.1	316.2	316.1	316.0	316.0	315.9	315.9
145°	331.4	331.7	332.0	332.2	332.6	332.8	332.8	332.9	333.0	333.1	333.0
147.5°	347.1	347.5	347.8	348.2	348.6	348.6	348.6	348.6	348.6	348.5	348.4
150°	356.8	357.0	357.3	357.6	357.9	358.1	358.1	358.1	358.1	358.1	358.1
152.5°	365.8	366.0	366.1	366.3	366.5	366.6	366.6	366.7	366.7	366.8	367.0
155°	379.7	379.7	379.7	379.7	379.7	379.7	379.6	379.5	379.5	379.4	379.7
157.5°	391.4	391.2	391.2	391.1	390.9	390.8	390.8	390.8	390.8	390.8	391.0
160°	398.3	398.2	398.2	398.1	398.0	397.9	397.9	397.8	397.8	397.7	397.9
162.5°	404.7	404.5	404.4	404.2	404.0	403.9	403.8	403.7	403.6	403.5	404.0
165°	413.3	413.1	412.9	412.6	412.5	412.3	412.1	412.0	411.8	411.7	412.1
167.5°	419.9	419.6	419.3	419.0	418.7	418.5	418.6	418.6	418.6	418.6	419.1
170°	423.7	423.3	422.9	422.5	422.2	422.1	422.1	422.2	422.3	422.4	422.7
172.5°	426.3	426.0	425.7	425.4	425.1	424.9	424.9	425.0	425.0	425.0	425.5
175°	430.0	429.6	429.2	428.9	428.5	428.3	428.2	428.1	428.1	428.0	428.5
177.5°	431.2	430.9	430.6	430.3	430.0	429.9	429.9	429.9	429.9	429.9	430.3
180°	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9
2.5°	1695.5	1698.1	1700.6	1701.9	1701.6	1701.4	1701.1	1700.9
5°	1684.2	1687.2	1690.1	1691.2	1690.6	1690.1	1689.5	1688.9
7.5°	1661.9	1663.7	1665.6	1666.0	1665.1	1664.2	1663.2	1662.3
10°	1641.7	1642.9	1644.0	1644.0	1642.9	1641.7	1640.5	1639.4
12.5°	1616.7	1617.5	1618.2	1617.7	1616.1	1614.5	1612.9	1611.3
15°	1573.1	1572.4	1571.9	1570.6	1568.6	1566.5	1564.5	1562.5
17.5°	1520.4	1518.8	1517.2	1514.9	1511.7	1508.7	1505.6	1502.5
20°	1483.6	1481.3	1478.9	1475.9	1472.2	1468.4	1464.6	1460.8
22.5°	1442.7	1439.2	1435.8	1432.5	1429.4	1426.3	1423.2	1420.2
25°	1376.7	1371.8	1366.9	1362.9	1360.1	1357.2	1354.2	1351.4
27.5°	1309.5	1303.4	1297.3	1292.2	1288.1	1283.8	1279.7	1275.5
30°	1261.3	1254.1	1246.8	1240.9	1236.2	1231.6	1227.0	1222.4
32.5°	1212.1	1203.7	1195.3	1188.9	1184.5	1180.1	1175.7	1171.3
35°	1138.8	1129.0	1119.1	1111.6	1106.4	1101.2	1096.0	1090.7
37.5°	1060.2	1049.1	1038.1	1030.0	1024.8	1019.5	1014.4	1009.2
40°	1007.8	995.6	983.4	974.8	969.6	964.3	959.1	953.9
42.5°	956.2	943.9	931.4	922.6	917.1	911.6	906.2	900.8
45°	877.3	863.1	848.9	839.2	834.1	828.8	823.6	818.4
47.5°	797.9	783.2	768.4	758.2	752.4	746.7	740.9	735.3
50°	745.1	730.7	716.1	706.2	700.7	695.1	689.7	684.2
52.5°	692.5	677.8	663.1	652.9	647.1	641.4	635.7	630.0
55°	614.9	599.9	584.8	574.6	569.0	563.5	558.1	552.5
57.5°	539.1	523.9	508.6	498.9	494.6	490.5	486.4	482.2
60°	488.5	473.4	458.5	448.6	443.9	439.3	434.7	430.1
62.5°	438.8	424.8	410.9	402.1	398.4	394.7	391.0	387.3
65°	367.3	354.9	342.4	334.5	331.0	327.5	324.0	320.6
67.5°	301.7	291.1	280.3	273.1	269.2	265.4	261.6	257.8
70°	257.1	247.6	238.1	231.8	228.9	226.0	223.1	220.3
72.5°	217.2	209.1	200.9	195.5	192.7	190.1	187.5	184.8
75°	160.0	153.4	146.7	142.5	140.7	139.0	137.2	135.5
77.5°	113.2	109.3	105.4	103.2	102.6	102.2	101.6	101.1
80°	86.9	86.1	85.1	84.5	84.3	84.0	83.7	83.4
82.5°	67.5	66.9	66.3	65.8	65.5	65.2	64.9	64.7
85°	39.2	38.6	38.1	37.8	37.8	37.8	37.8	37.8
87.5°	15.7	15.6	15.5	15.6	15.8	16.1	16.3	16.6
90°	8.2	8.7	9.1	9.4	9.5	9.7	9.8	10.0
92.5°	13.8	13.9	14.2	14.4	14.5	14.6	14.7	14.8
95°	25.7	26.0	26.2	26.3	26.3	26.3	26.3	26.3
97.5°	40.5	40.8	41.1	41.2	41.2	41.2	41.2	41.2
100°	51.3	51.4	51.6	51.7	51.7	51.7	51.7	51.7
102.5°	62.6	62.8	63.0	63.2	63.2	63.2	63.2	63.3
105°	79.7	79.9	80.1	80.4	80.6	80.9	81.1	81.2
107.5°	98.3	98.5	98.7	98.8	98.8	98.8	98.8	98.7
110°	110.7	110.5	110.3	110.4	110.6	110.8	111.0	111.2





TEST NUMBER: P332959-830

CATALOG NUMBER: S124RDIP-S1020D365U830-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	123.9	123.9	123.9	123.9	123.9	123.9	123.9	124.0
115°	144.4	144.3	144.2	144.2	144.1	144.0	143.9	143.9
117.5°	164.1	163.8	163.6	163.4	163.2	163.1	163.0	162.8
120°	177.5	177.1	176.7	176.6	176.7	176.9	177.0	177.2
122.5°	191.1	190.8	190.5	190.2	190.0	189.7	189.5	189.2
125°	210.8	210.8	210.6	210.4	210.3	210.1	210.0	209.8
127.5°	229.9	229.7	229.5	229.4	229.3	229.2	229.0	228.9
130°	243.2	243.0	242.9	242.6	242.3	242.0	241.8	241.5
132.5°	255.7	255.5	255.4	255.2	255.1	255.1	255.0	254.8
135°	274.5	274.4	274.2	274.0	273.8	273.5	273.3	273.1
137.5°	292.7	292.5	292.3	292.2	292.2	292.3	292.3	292.4
140°	304.6	304.5	304.4	304.3	304.3	304.3	304.2	304.1
142.5°	315.9	315.9	315.8	315.8	315.8	315.8	315.8	315.8
145°	332.9	332.8	332.8	332.6	332.4	332.2	332.0	331.8
147.5°	348.4	348.3	348.2	348.2	348.1	348.0	347.9	347.9
150°	358.1	358.1	358.1	358.0	358.0	357.9	357.8	357.7
152.5°	367.2	367.4	367.6	367.5	367.3	367.1	366.9	366.7
155°	379.9	380.2	380.5	380.5	380.2	379.9	379.7	379.4
157.5°	391.2	391.4	391.6	391.6	391.3	391.2	390.9	390.6
160°	398.1	398.3	398.6	398.5	398.1	397.8	397.4	397.0
162.5°	404.4	404.7	405.1	405.1	404.8	404.4	404.1	403.7
165°	412.6	413.0	413.4	413.5	413.2	412.9	412.6	412.4
167.5°	419.5	419.9	420.4	420.4	419.9	419.4	419.0	418.5
170°	423.2	423.7	424.1	424.0	423.6	423.0	422.5	422.0
172.5°	426.0	426.5	427.0	427.0	426.5	425.9	425.5	424.9
175°	429.0	429.5	430.1	430.1	429.5	429.0	428.5	428.0
177.5°	430.6	431.1	431.5	431.5	431.0	430.6	430.1	429.6
180°	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6

(END OF REPORT)