

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: P333093-940

Luminaire Tested: **S124RDIW-S1020D1560U940-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333093-940
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: S124RDIW-S1020D1560U940-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1560 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9286.8 lumens
Efficiency: N/A
Efficacy: 121.2 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: General Diffuse

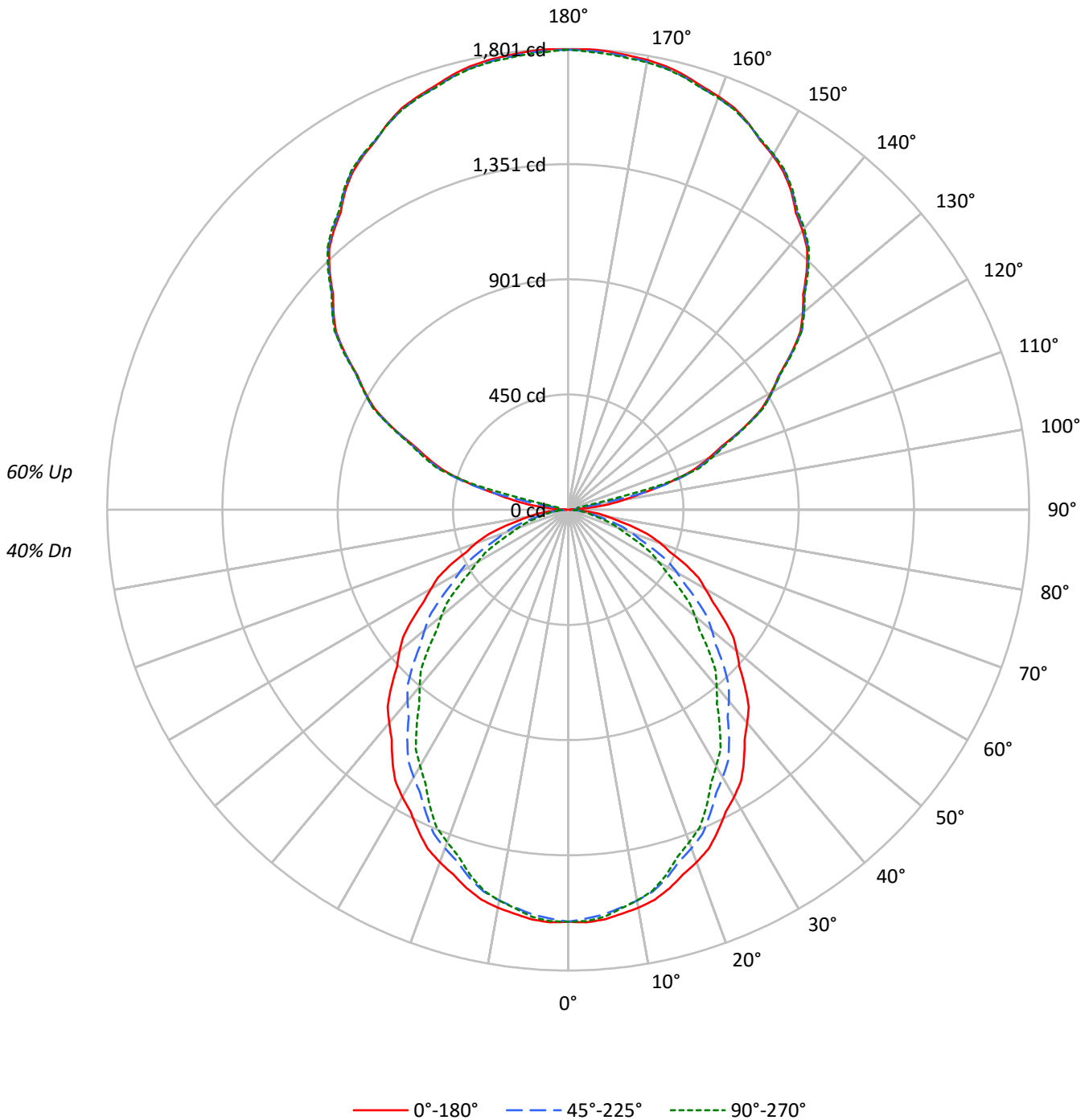
Input Watts (W): 76.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47	40
1	96	92	88	84	87	84	80	78	68	66	64	55	53	52	42	41	40	34
2	87	80	74	69	79	73	68	64	60	57	53	48	46	44	37	36	34	29
3	80	71	64	58	72	65	59	54	53	49	45	43	40	37	33	31	29	25
4	73	63	55	49	66	57	51	46	47	42	39	38	35	32	30	27	25	21
5	67	56	48	42	61	51	44	39	42	37	33	34	31	28	27	24	22	19
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	24	22	20	17
7	57	45	37	32	52	42	35	30	35	29	26	28	24	22	22	20	17	15
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	20	18	16	13
9	49	37	30	25	45	34	28	24	29	24	20	24	20	17	19	16	14	12
10	46	34	27	23	42	32	25	21	27	22	18	22	18	16	18	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12999	12999	12999
5°	13028	12869	12949
10°	12946	12714	12714
15°	12797	12447	12354
20°	12594	12095	11874
25°	12333	11685	11388
30°	12078	11251	10781
35°	11798	10801	10170
40°	11460	10290	9511
45°	11147	9782	8840
50°	10792	9198	8130
55°	10412	8590	7357
60°	9993	7923	6570
65°	9608	7089	5794
70°	9050	6170	4919
75°	8344	5115	3999
80°	7280	3896	3668
85°	6169	3548	3316



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.3	1.6
10°-20°	421.8	4.5
20°-30°	609.1	6.6
30°-40°	690.4	7.4
40°-50°	666.7	7.2
50°-60°	554.4	6.0
60°-70°	382.8	4.1
70°-80°	194.0	2.1
80°-90°	55.0	0.6
90°-100°	61.5	0.7
100°-110°	392.1	4.2
110°-120°	750.0	8.1
120°-130°	952.1	10.3
130°-140°	1018.7	11.0
140°-150°	952.6	10.3
150°-160°	768.2	8.3
160°-170°	495.5	5.3
170°-180°	170.8	1.8
0°-30°	1182.1	12.7
0°-40°	1872.5	20.2
0°-60°	3093.5	33.3
0°-90°	3725.3	40.1
90°-120°	1203.6	13.0
90°-150°	4127.0	44.4
90°-180°	5561.0	59.9
0°-180°	9286.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1610	1610	1610	1610	1610	
5°	1608	1602	1588	1599	1598	152
15°	1531	1519	1489	1486	1478	431
25°	1385	1361	1312	1291	1278	638
35°	1197	1156	1096	1055	1032	748
45°	976	929	857	799	774	753
55°	740	689	610	548	523	661
65°	503	449	371	320	303	497
75°	268	221	164	137	128	282
85°	67	43	38	36	36	75
90°	4	19	30	37	40	7
95°	74	31	30	37	39	95
105°	405	413	420	428	383	423
115°	756	759	758	761	761	743
125°	1062	1067	1065	1069	1070	948
135°	1318	1317	1322	1325	1327	1015
145°	1520	1523	1524	1525	1528	949
155°	1666	1667	1663	1668	1665	768
165°	1758	1751	1751	1760	1750	496
175°	1798	1790	1791	1802	1787	171
180°	1798	1798	1798	1798	1798	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2
2.5°	1614.1	1613.2	1612.3	1611.5	1610.6	1608.9	1606.5	1604.1	1601.7	1599.3	1601.7
5°	1607.7	1606.6	1605.5	1604.4	1603.3	1601.1	1597.9	1594.6	1591.3	1588.0	1590.7
7.5°	1593.1	1592.0	1590.8	1589.7	1588.5	1585.8	1581.5	1577.3	1573.0	1568.7	1570.5
10°	1579.3	1578.0	1576.5	1575.2	1573.9	1570.7	1565.8	1560.9	1555.9	1551.0	1552.0
12.5°	1561.6	1560.0	1558.4	1556.8	1555.2	1551.5	1545.7	1539.9	1534.1	1528.3	1528.9
15°	1531.2	1528.7	1526.3	1523.8	1521.3	1516.7	1509.8	1503.0	1496.2	1489.3	1488.8
17.5°	1494.5	1490.9	1487.4	1483.8	1480.2	1474.4	1466.2	1457.9	1449.7	1441.5	1439.9
20°	1465.9	1462.3	1458.7	1455.2	1451.6	1445.2	1435.9	1426.6	1417.3	1407.9	1405.8
22.5°	1434.3	1430.3	1426.3	1422.4	1418.4	1411.3	1401.4	1391.4	1381.4	1371.5	1368.2
25°	1384.6	1379.6	1374.7	1369.8	1364.8	1356.7	1345.5	1334.3	1323.0	1311.8	1307.2
27.5°	1332.2	1326.1	1319.9	1313.7	1307.5	1298.4	1286.4	1274.4	1262.4	1250.4	1244.6
30°	1295.7	1288.9	1282.1	1275.2	1268.4	1258.5	1245.6	1232.7	1219.9	1207.0	1200.2
32.5°	1257.3	1249.6	1241.8	1234.1	1226.4	1215.8	1202.6	1189.3	1175.9	1162.6	1154.7
35°	1197.1	1188.4	1179.6	1170.8	1162.1	1150.8	1137.1	1123.5	1109.7	1096.0	1086.7
37.5°	1132.7	1123.7	1114.7	1105.6	1096.6	1084.5	1069.3	1054.2	1038.9	1023.8	1013.3
40°	1087.4	1078.3	1069.3	1060.2	1051.2	1038.9	1023.3	1007.6	992.0	976.4	964.9
42.5°	1044.0	1034.6	1025.0	1015.6	1006.1	993.2	977.0	960.6	944.4	928.1	916.4
45°	976.4	966.3	956.2	946.0	935.9	922.6	906.2	889.7	873.3	856.8	843.5
47.5°	906.7	896.2	885.7	875.3	864.8	851.0	833.9	816.8	799.7	782.7	768.7
50°	859.3	848.6	837.9	827.2	816.5	802.5	785.0	767.4	749.8	732.4	718.6
52.5°	811.0	800.5	790.1	779.6	769.1	754.9	736.9	719.0	701.0	683.1	669.1
55°	739.8	728.8	717.8	706.9	695.9	681.5	663.7	645.9	628.1	610.3	596.0
57.5°	669.2	657.8	646.4	635.0	623.7	609.1	591.7	574.1	556.5	539.0	524.6
60°	618.9	608.0	597.0	586.0	575.1	560.8	543.3	525.8	508.2	490.7	476.4
62.5°	573.5	562.1	550.7	539.3	528.0	513.3	495.3	477.3	459.3	441.4	428.2
65°	503.0	491.2	479.5	467.7	455.9	441.2	423.7	406.2	388.6	371.1	359.4
67.5°	429.8	418.5	407.2	395.9	384.6	370.9	354.5	338.3	322.0	305.8	295.6
70°	383.4	371.9	360.4	348.9	337.4	323.9	308.3	292.6	277.0	261.4	252.4
72.5°	334.1	323.7	313.3	302.9	292.5	279.9	265.2	250.4	235.7	221.0	213.2
75°	267.5	257.4	247.3	237.1	227.0	215.4	202.6	189.8	176.8	164.0	157.7
77.5°	200.0	191.4	182.8	174.2	165.6	156.0	145.6	135.3	124.8	114.4	110.8
80°	156.6	148.6	140.7	132.8	124.8	116.7	108.5	100.3	92.0	83.8	83.0
82.5°	119.1	111.8	104.5	97.2	90.0	83.9	79.3	74.5	69.8	65.1	64.5
85°	66.6	61.1	55.6	50.1	44.7	41.5	40.7	39.9	39.1	38.3	37.6
87.5°	23.5	22.4	21.3	20.2	19.1	18.7	18.9	19.2	19.4	19.7	19.9
90°	4.0	7.3	10.6	13.9	17.2	20.1	22.4	24.8	27.2	29.6	31.4
92.5°	16.9	17.1	17.3	17.5	17.7	18.9	21.3	23.7	26.1	28.5	30.3
95°	73.9	63.8	53.7	43.5	33.3	28.4	28.7	29.0	29.2	29.6	31.4
97.5°	157.0	163.4	169.7	176.1	182.4	168.9	135.5	102.2	68.8	35.5	35.7
100°	220.5	226.0	231.3	236.7	242.0	224.1	182.9	141.6	100.4	59.2	54.1
102.5°	291.5	295.5	299.4	303.4	307.3	306.6	301.2	295.9	290.4	285.1	230.2
105°	404.7	406.5	408.3	410.2	412.0	413.6	415.1	416.6	418.0	419.5	422.2
107.5°	509.9	510.9	511.8	512.6	513.5	515.0	517.0	519.1	521.0	523.1	524.4
110°	580.9	581.8	582.7	583.6	584.5	585.9	587.6	589.4	591.2	593.0	593.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	649.8	651.4	653.0	654.6	656.2	657.5	658.3	659.2	660.0	660.8	660.7
115°	755.7	756.6	757.5	758.4	759.3	759.6	759.3	759.0	758.8	758.4	759.0
117.5°	851.2	852.4	853.6	854.8	856.0	856.9	857.6	858.3	858.9	859.5	859.4
120°	915.8	916.9	918.2	919.4	920.5	921.0	920.7	920.4	920.1	919.8	920.4
122.5°	976.0	976.7	977.4	978.1	978.9	979.5	979.9	980.3	980.7	981.1	981.5
125°	1062.4	1063.5	1064.7	1066.0	1067.1	1067.4	1066.8	1066.2	1065.6	1065.1	1066.0
127.5°	1144.1	1144.4	1144.7	1145.0	1145.3	1146.1	1147.5	1148.9	1150.2	1151.6	1151.5
130°	1196.9	1197.1	1197.4	1197.7	1198.0	1198.6	1199.5	1200.4	1201.3	1202.2	1202.5
132.5°	1245.2	1245.7	1246.3	1246.9	1247.4	1248.2	1249.4	1250.4	1251.6	1252.8	1253.0
135°	1317.9	1317.5	1317.2	1317.0	1316.6	1317.1	1318.3	1319.5	1320.7	1321.9	1322.5
137.5°	1382.2	1382.2	1382.3	1382.5	1382.6	1383.3	1384.6	1386.0	1387.2	1388.6	1389.2
140°	1424.1	1424.7	1425.3	1425.8	1426.5	1427.1	1427.6	1428.3	1428.9	1429.4	1430.4
142.5°	1461.7	1462.8	1463.9	1465.0	1466.1	1466.8	1467.1	1467.5	1467.8	1468.2	1468.8
145°	1519.6	1520.5	1521.3	1522.2	1523.1	1523.6	1523.6	1523.6	1523.6	1523.6	1523.8
147.5°	1565.6	1567.2	1568.9	1570.6	1572.3	1572.9	1572.6	1572.4	1572.0	1571.7	1572.0
150°	1598.9	1600.1	1601.2	1602.5	1603.7	1604.1	1603.8	1603.6	1603.2	1602.9	1602.9
152.5°	1626.8	1627.8	1628.8	1629.7	1630.7	1630.9	1630.3	1629.8	1629.2	1628.7	1629.2
155°	1666.2	1666.4	1666.7	1667.1	1667.3	1667.1	1666.2	1665.3	1664.4	1663.4	1664.6
157.5°	1699.2	1699.1	1698.9	1698.7	1698.5	1697.9	1696.8	1695.9	1694.9	1693.8	1695.4
160°	1718.6	1717.7	1716.8	1715.9	1715.0	1714.4	1714.0	1713.8	1713.5	1713.2	1715.0
162.5°	1735.8	1734.6	1733.5	1732.4	1731.3	1730.5	1730.2	1729.9	1729.7	1729.3	1731.1
165°	1757.6	1756.0	1754.6	1753.1	1751.6	1750.9	1750.9	1750.9	1750.9	1750.9	1753.2
167.5°	1774.8	1773.3	1771.7	1770.1	1768.5	1767.7	1767.5	1767.4	1767.2	1767.0	1769.6
170°	1784.5	1782.7	1780.8	1779.1	1777.3	1776.6	1776.8	1777.2	1777.4	1777.7	1780.1
172.5°	1790.9	1789.1	1787.3	1785.6	1783.8	1783.0	1783.3	1783.6	1783.9	1784.2	1786.5
175°	1797.9	1796.1	1794.3	1792.5	1790.7	1790.0	1790.3	1790.6	1790.9	1791.2	1793.9
177.5°	1801.2	1799.5	1797.8	1796.1	1794.5	1793.9	1794.3	1794.8	1795.3	1795.7	1797.7
180°	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2
2.5°	1604.1	1606.5	1608.9	1610.1	1609.8	1609.6	1609.4	1609.2
5°	1593.4	1596.2	1598.9	1600.0	1599.5	1598.9	1598.4	1597.9
7.5°	1572.3	1574.0	1575.7	1576.2	1575.3	1574.4	1573.5	1572.6
10°	1553.2	1554.3	1555.3	1555.3	1554.3	1553.2	1552.0	1551.0
12.5°	1529.6	1530.3	1530.9	1530.4	1528.9	1527.4	1525.9	1524.4
15°	1488.3	1487.6	1487.1	1485.9	1484.0	1482.0	1480.2	1478.2
17.5°	1438.4	1436.9	1435.4	1433.2	1430.2	1427.4	1424.4	1421.5
20°	1403.6	1401.4	1399.2	1396.3	1392.8	1389.2	1385.6	1382.1
22.5°	1364.9	1361.6	1358.3	1355.2	1352.3	1349.4	1346.5	1343.6
25°	1302.4	1297.8	1293.2	1289.4	1286.7	1284.0	1281.2	1278.5
27.5°	1238.9	1233.1	1227.4	1222.5	1218.6	1214.6	1210.7	1206.8
30°	1193.3	1186.4	1179.6	1173.9	1169.6	1165.2	1160.8	1156.5
32.5°	1146.7	1138.8	1130.9	1124.8	1120.6	1116.4	1112.3	1108.1
35°	1077.4	1068.1	1058.7	1051.7	1046.7	1041.8	1036.9	1031.9
37.5°	1003.0	992.6	982.1	974.5	969.6	964.6	959.7	954.8
40°	953.4	941.9	930.4	922.2	917.3	912.3	907.4	902.5
42.5°	904.6	893.0	881.2	872.8	867.6	862.5	857.3	852.2
45°	830.0	816.5	803.2	794.0	789.1	784.1	779.2	774.3
47.5°	754.8	740.9	726.9	717.3	711.9	706.4	701.0	695.6
50°	704.9	691.3	677.5	668.1	662.9	657.6	652.5	647.3
52.5°	655.1	641.2	627.3	617.7	612.2	606.8	601.4	596.0
55°	581.8	567.6	553.3	543.6	538.3	533.2	528.0	522.7
57.5°	510.1	495.6	481.2	472.0	468.0	464.0	460.1	456.2
60°	462.2	447.9	433.7	424.4	420.0	415.6	411.3	406.9
62.5°	415.1	401.9	388.8	380.4	376.9	373.4	369.9	366.4
65°	347.5	335.7	324.0	316.5	313.2	309.9	306.6	303.3
67.5°	285.4	275.4	265.2	258.3	254.7	251.1	247.4	243.9
70°	243.3	234.3	225.2	219.3	216.6	213.8	211.1	208.4
72.5°	205.5	197.8	190.0	184.9	182.4	179.9	177.4	174.9
75°	151.4	145.1	138.8	134.8	133.1	131.5	129.8	128.2
77.5°	107.1	103.4	99.7	97.6	97.1	96.7	96.1	95.7
80°	82.2	81.4	80.5	80.0	79.7	79.5	79.2	78.9
82.5°	63.8	63.3	62.7	62.2	62.0	61.7	61.4	61.2
85°	37.1	36.6	36.0	35.8	35.8	35.8	35.8	35.8
87.5°	20.0	20.2	20.2	20.5	20.9	21.2	21.6	21.8
90°	33.2	35.0	36.7	38.0	38.5	39.1	39.8	40.3
92.5°	32.1	33.9	35.7	36.6	36.7	36.9	37.0	37.1
95°	33.2	35.0	36.7	37.8	38.1	38.4	38.7	39.0
97.5°	35.8	36.0	36.2	36.5	36.7	37.1	37.4	37.6
100°	49.0	44.0	38.9	36.5	36.7	37.1	37.4	37.6
102.5°	175.5	120.6	65.9	38.5	38.5	38.6	38.7	38.7
105°	424.9	427.7	430.3	426.2	415.5	404.7	394.0	383.3
107.5°	525.8	527.1	528.3	529.6	530.7	531.8	533.0	534.1
110°	594.2	594.9	595.4	596.2	597.1	598.0	598.9	599.8



TEST NUMBER: P333093-940

CATALOG NUMBER: S124RDIW-S1020D1560U940-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	660.6	660.4	660.3	660.8	662.0	663.1	664.2	665.4
115°	759.6	760.2	760.8	761.2	761.2	761.2	761.2	761.2
117.5°	859.3	859.2	859.1	859.0	858.8	858.7	858.6	858.4
120°	921.0	921.6	922.2	922.2	921.6	921.0	920.4	919.8
122.5°	981.9	982.2	982.6	982.4	981.9	981.2	980.6	980.1
125°	1066.8	1067.7	1068.6	1069.3	1069.5	1069.8	1070.1	1070.4
127.5°	1151.3	1151.1	1150.9	1150.7	1150.5	1150.2	1150.0	1149.8
130°	1202.8	1203.1	1203.4	1203.5	1203.5	1203.5	1203.5	1203.5
132.5°	1253.4	1253.7	1253.9	1254.0	1253.7	1253.5	1253.3	1253.0
135°	1323.0	1323.7	1324.3	1324.9	1325.4	1326.1	1326.7	1327.2
137.5°	1389.9	1390.5	1391.2	1391.4	1391.2	1391.1	1390.9	1390.7
140°	1431.3	1432.2	1433.1	1433.6	1434.0	1434.2	1434.5	1434.9
142.5°	1469.5	1470.2	1470.8	1471.1	1471.2	1471.3	1471.3	1471.4
145°	1524.2	1524.5	1524.7	1525.3	1525.8	1526.4	1527.1	1527.6
147.5°	1572.2	1572.4	1572.7	1573.0	1573.2	1573.5	1573.9	1574.1
150°	1602.9	1602.9	1602.9	1603.1	1603.4	1603.7	1604.0	1604.3
152.5°	1629.7	1630.1	1630.7	1630.8	1630.6	1630.4	1630.2	1630.0
155°	1665.8	1667.1	1668.2	1668.4	1667.5	1666.6	1665.7	1664.8
157.5°	1696.9	1698.5	1700.0	1700.0	1698.5	1696.9	1695.4	1693.8
160°	1716.8	1718.6	1720.4	1720.4	1718.6	1716.8	1715.0	1713.2
162.5°	1733.0	1734.7	1736.5	1736.3	1734.4	1732.3	1730.3	1728.2
165°	1755.6	1758.0	1760.4	1760.2	1757.6	1754.9	1752.2	1749.5
167.5°	1772.3	1774.9	1777.5	1777.4	1774.3	1771.4	1768.4	1765.4
170°	1782.5	1784.9	1787.3	1787.0	1784.0	1781.0	1778.1	1775.0
172.5°	1789.0	1791.4	1793.8	1793.3	1790.1	1786.9	1783.7	1780.4
175°	1796.5	1799.3	1802.0	1801.5	1797.9	1794.3	1790.7	1787.2
177.5°	1799.6	1801.5	1803.4	1803.0	1800.1	1797.2	1794.3	1791.4
180°	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9

(END OF REPORT)