

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: P332429-830

Luminaire Tested: **S123RDIW-S560D1535U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332429-830
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: S123RDIW-S560D1535U830-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7029.5 lumens
Efficiency: N/A
Efficacy: 116.0 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

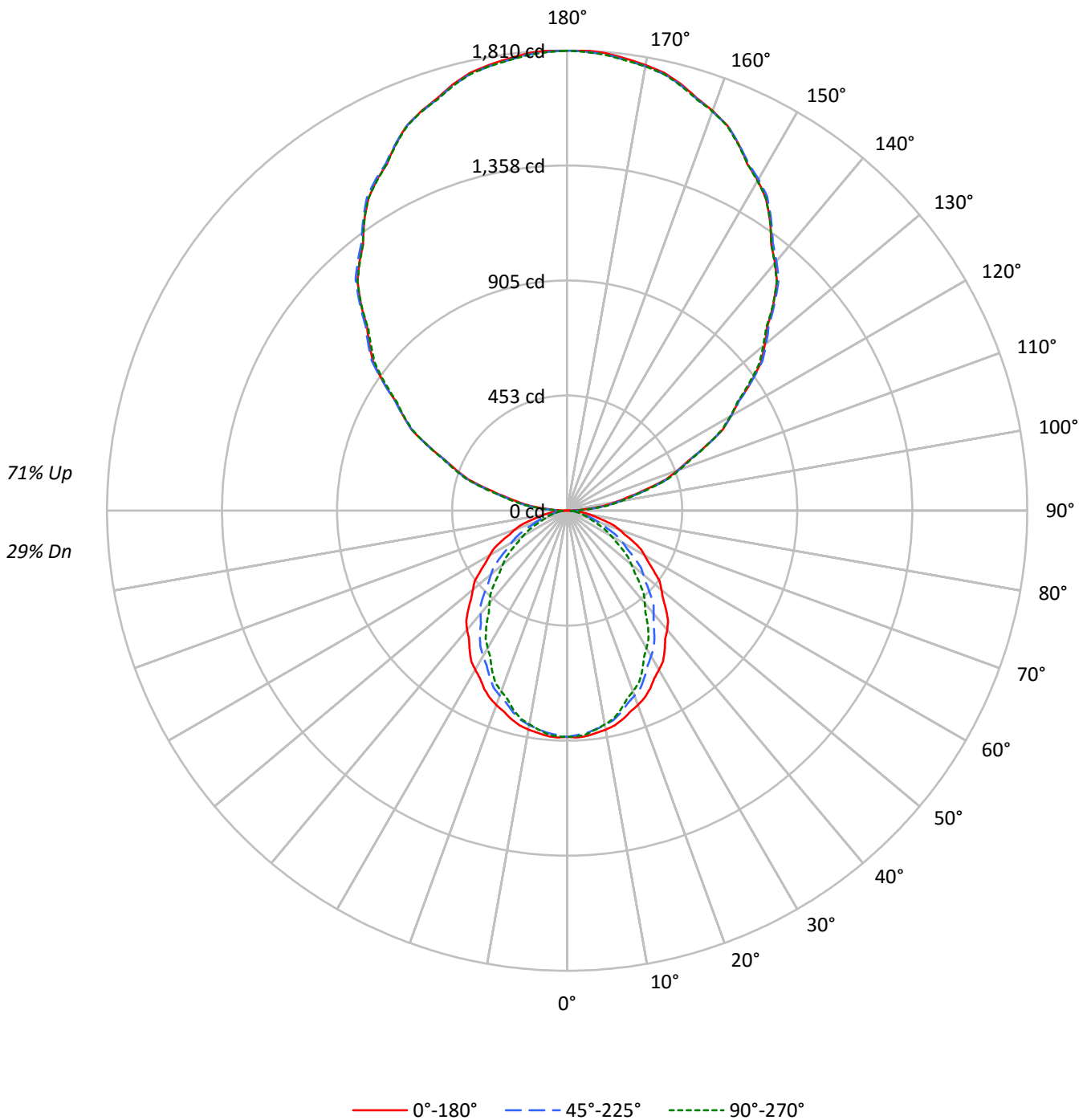
Input Watts (W): 60.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	37	37	37	29
1	93	89	85	82	83	80	77	74	63	61	59	47	46	45	33	32	31	25
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	29	28	26	21
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	26	24	23	18
4	71	61	53	47	63	55	48	43	43	39	35	33	30	27	23	21	20	15
5	65	54	46	41	58	49	42	37	39	34	30	29	26	24	21	19	17	14
6	60	48	41	35	53	44	37	32	35	30	26	27	23	21	19	17	15	12
7	55	44	36	31	49	39	33	28	32	27	23	24	21	18	17	15	14	11
8	51	39	32	27	46	36	29	25	29	24	21	22	19	16	16	14	12	10
9	48	36	29	24	43	33	26	22	26	22	18	20	17	15	15	13	11	9
10	44	33	26	21	40	30	24	20	24	20	16	19	15	13	14	11	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9582	9582	9582
5°	9619	9487	9541
10°	9565	9368	9335
15°	9461	9149	9052
20°	9321	8874	8668
25°	9175	8567	8291
30°	8983	8211	7762
35°	8784	7857	7276
40°	8604	7436	6674
45°	8363	7024	6132
50°	8100	6553	5526
55°	7833	6016	4960
60°	7584	5440	4336
65°	7264	4819	3713
70°	6861	4047	2999
75°	6276	3182	2824
80°	5597	2820	2591
85°	4730	2495	2322



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.6	1.2
10°-20°	232.6	3.3
20°-30°	334.9	4.8
30°-40°	377.3	5.4
40°-50°	360.9	5.1
50°-60°	295.6	4.2
60°-70°	199.4	2.8
70°-80°	100.3	1.4
80°-90°	31.9	0.5
90°-100°	117.9	1.7
100°-110°	352.8	5.0
110°-120°	600.0	8.5
120°-130°	789.3	11.2
130°-140°	887.1	12.6
140°-150°	872.0	12.4
150°-160°	734.1	10.4
160°-170°	488.7	7.0
170°-180°	171.1	2.4
0°-30°	651.1	9.3
0°-40°	1028.4	14.6
0°-60°	1684.8	24.0
0°-90°	2016.5	28.7
90°-120°	1070.7	15.2
90°-150°	3619.1	51.5
90°-180°	5013.0	71.3
0°-180°	7029.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	890	890	890	890	890	
5°	890	886	878	884	883	84
15°	849	840	821	817	812	239
25°	772	754	721	706	698	355
35°	668	642	598	568	554	418
45°	549	516	461	422	403	424
55°	417	380	321	280	264	374
65°	285	245	189	155	146	282
75°	151	116	76	70	68	161
85°	38	23	20	19	19	43
90°	1	16	34	40	43	7
95°	84	94	105	110	111	94
105°	320	323	336	336	338	343
115°	604	608	606	607	606	597
125°	884	888	886	880	874	788
135°	1147	1155	1154	1149	1146	884
145°	1392	1394	1398	1397	1392	869
155°	1593	1593	1595	1600	1590	733
165°	1735	1731	1731	1739	1730	489
175°	1805	1800	1799	1807	1798	171
180°	1809	1809	1809	1809	1809	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	890.2	890.2	890.2	890.2	890.2	890.2	890.2	890.2	890.2	890.2	890.2
2.5°	893.2	892.6	892.1	891.6	891.1	890.0	888.5	886.9	885.4	883.9	885.3
5°	890.2	889.5	888.6	887.9	887.0	885.7	883.7	881.8	879.9	878.0	879.4
7.5°	882.0	881.2	880.2	879.4	878.5	876.8	874.4	871.9	869.3	866.9	867.6
10°	875.1	873.9	872.8	871.7	870.6	868.6	865.7	862.8	859.9	857.1	857.1
12.5°	865.3	864.0	862.7	861.5	860.3	857.9	854.3	850.8	847.3	843.8	843.7
15°	849.0	847.3	845.6	843.8	842.1	838.9	834.4	829.9	825.4	821.0	820.1
17.5°	828.7	826.7	824.6	822.6	820.5	816.6	810.9	805.2	799.5	793.8	792.1
20°	813.7	811.2	808.6	806.0	803.4	799.1	793.0	786.9	780.8	774.7	772.6
22.5°	796.9	794.0	791.1	788.1	785.1	780.4	773.9	767.4	761.0	754.5	751.9
25°	772.5	768.5	764.5	760.5	756.5	750.8	743.4	736.0	728.7	721.3	717.9
27.5°	742.9	738.5	734.1	729.6	725.2	718.9	710.7	702.5	694.3	686.1	681.4
30°	722.7	717.9	713.1	708.3	703.5	696.5	687.6	678.6	669.6	660.6	655.2
32.5°	702.5	697.1	691.6	686.2	680.7	673.3	663.7	654.2	644.7	635.2	629.2
35°	668.5	662.8	657.0	651.3	645.5	637.6	627.6	617.7	607.8	597.9	590.9
37.5°	634.2	627.8	621.4	614.9	608.5	600.0	589.4	578.8	568.2	557.5	549.7
40°	612.3	605.2	598.1	591.1	584.0	574.8	563.5	552.0	540.6	529.2	520.8
42.5°	587.4	580.3	573.3	566.3	559.2	549.8	538.0	526.2	514.4	502.7	493.5
45°	549.4	542.2	535.0	527.8	520.6	510.8	498.4	486.1	473.7	461.4	452.2
47.5°	511.4	503.5	495.6	487.7	479.8	469.7	457.2	444.9	432.5	420.2	410.3
50°	483.7	476.2	468.6	461.1	453.6	443.3	430.3	417.4	404.4	391.3	381.4
52.5°	458.9	450.7	442.5	434.3	426.2	415.7	402.7	389.9	377.0	364.2	353.8
55°	417.4	409.4	401.6	393.7	385.9	375.1	361.5	347.9	334.2	320.6	311.2
57.5°	378.9	370.3	361.7	353.2	344.6	333.5	319.8	306.1	292.4	278.7	269.9
60°	352.3	343.6	334.7	325.8	317.1	305.9	292.7	279.4	266.0	252.7	244.0
62.5°	325.7	317.0	308.1	299.3	290.5	279.4	266.1	252.8	239.4	226.1	218.0
65°	285.2	276.4	267.6	258.7	249.9	239.2	226.7	214.2	201.7	189.2	181.3
67.5°	244.6	235.7	226.8	217.8	209.0	198.5	186.4	174.5	162.5	150.4	144.6
70°	218.0	209.3	200.8	192.1	183.4	173.4	162.2	151.0	139.8	128.6	122.9
72.5°	191.4	182.9	174.4	165.9	157.3	148.0	137.8	127.5	117.3	107.2	102.5
75°	150.9	143.2	135.5	127.8	120.1	111.8	103.0	94.2	85.4	76.5	74.9
77.5°	114.0	107.0	100.0	93.0	86.1	79.7	74.1	68.4	62.7	57.0	56.2
80°	90.3	83.7	77.1	70.5	63.9	59.0	55.6	52.2	48.8	45.5	45.0
82.5°	67.8	62.0	56.4	50.7	45.0	41.4	39.8	38.3	36.7	35.1	34.6
85°	38.3	34.8	31.2	27.7	24.1	22.1	21.7	21.2	20.7	20.2	19.9
87.5°	14.1	13.4	12.6	11.8	11.0	11.0	11.9	12.7	13.5	14.3	14.4
90°	1.4	4.6	7.7	10.9	14.0	17.7	21.8	25.9	30.0	34.1	35.3
92.5°	34.4	36.6	38.6	40.8	43.0	45.2	47.6	49.9	52.2	54.6	55.6
95°	83.9	86.1	88.3	90.5	92.7	95.1	97.6	100.1	102.6	105.2	106.4
97.5°	148.9	150.6	152.2	153.9	155.5	157.2	159.1	160.9	162.8	164.6	166.1
100°	193.3	195.2	197.1	199.0	200.9	202.6	204.2	205.8	207.4	209.0	209.9
102.5°	244.5	245.6	246.8	247.9	249.0	250.6	252.7	254.8	256.8	258.9	260.0
105°	319.8	320.5	321.0	321.7	322.3	324.0	326.9	329.7	332.6	335.5	335.5
107.5°	407.4	407.7	408.1	408.5	408.9	409.6	410.8	411.9	413.0	414.2	415.2
110°	461.9	462.6	463.2	463.8	464.5	465.1	465.7	466.4	466.9	467.6	468.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	518.8	519.2	519.5	519.9	520.3	520.6	520.7	520.8	520.9	521.0	522.5
115°	604.1	605.0	606.0	606.9	607.8	608.0	607.4	606.7	606.1	605.5	605.8
117.5°	689.9	690.5	691.2	691.8	692.4	692.3	691.5	690.7	689.8	689.1	689.0
120°	743.4	745.3	747.2	749.0	750.9	751.1	749.5	747.9	746.3	744.8	744.4
122.5°	799.1	800.4	801.8	803.2	804.6	804.9	804.1	803.2	802.5	801.6	800.8
125°	884.0	885.0	886.0	886.9	887.9	888.0	887.4	886.7	886.1	885.5	884.2
127.5°	962.5	964.5	966.6	968.6	970.6	971.3	970.5	969.9	969.2	968.5	966.7
130°	1014.8	1017.4	1019.8	1022.4	1024.9	1025.7	1024.7	1023.8	1022.8	1021.9	1020.7
132.5°	1067.1	1069.6	1072.1	1074.7	1077.2	1078.2	1077.4	1076.8	1076.0	1075.3	1073.8
135°	1147.0	1148.9	1150.8	1152.6	1154.6	1155.4	1155.1	1154.7	1154.4	1154.1	1152.8
137.5°	1220.9	1222.5	1224.1	1225.7	1227.2	1228.4	1229.3	1230.0	1230.9	1231.7	1230.4
140°	1272.1	1273.7	1275.3	1276.8	1278.4	1279.3	1279.7	1280.0	1280.3	1280.6	1280.3
142.5°	1318.7	1320.2	1321.8	1323.4	1325.0	1326.1	1326.6	1327.2	1327.8	1328.3	1328.0
145°	1391.5	1392.1	1392.7	1393.4	1394.0	1394.8	1395.7	1396.7	1397.6	1398.5	1398.3
147.5°	1455.1	1456.2	1457.4	1458.6	1459.7	1460.7	1461.6	1462.4	1463.3	1464.2	1464.2
150°	1499.5	1500.2	1500.7	1501.4	1502.0	1502.6	1503.3	1503.9	1504.5	1505.1	1505.1
152.5°	1535.9	1536.7	1537.7	1538.5	1539.4	1540.0	1540.4	1540.8	1541.2	1541.5	1542.1
155°	1593.3	1593.3	1593.3	1593.3	1593.3	1593.5	1593.7	1594.0	1594.4	1594.7	1596.0
157.5°	1642.2	1641.8	1641.4	1641.1	1640.7	1640.6	1640.9	1641.1	1641.3	1641.6	1642.9
160°	1672.9	1672.3	1671.6	1670.9	1670.4	1670.0	1670.0	1670.0	1670.0	1670.0	1671.6
162.5°	1700.2	1699.3	1698.4	1697.5	1696.7	1696.3	1696.6	1696.9	1697.0	1697.3	1698.9
165°	1735.4	1734.5	1733.5	1732.6	1731.6	1731.2	1731.2	1731.2	1731.2	1731.2	1733.1
167.5°	1763.6	1762.3	1761.0	1759.7	1758.5	1758.0	1758.2	1758.5	1758.8	1759.0	1761.0
170°	1779.4	1778.2	1777.0	1775.7	1774.4	1773.8	1773.8	1773.8	1773.8	1773.8	1776.0
172.5°	1792.0	1790.7	1789.4	1788.2	1787.0	1786.3	1786.3	1786.3	1786.3	1786.3	1788.3
175°	1805.1	1803.8	1802.5	1801.3	1800.0	1799.4	1799.4	1799.4	1799.4	1799.4	1801.3
177.5°	1810.4	1809.5	1808.5	1807.4	1806.4	1805.9	1805.9	1805.9	1805.9	1805.9	1807.4
180°	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	890.2	890.2	890.2	890.2	890.2	890.2	890.2	890.2
2.5°	886.7	888.2	889.6	890.1	889.9	889.6	889.4	889.1
5°	880.8	882.3	883.7	884.3	884.0	883.6	883.4	883.0
7.5°	868.5	869.2	870.1	870.2	869.6	869.1	868.6	868.0
10°	857.3	857.5	857.6	857.3	856.6	855.7	855.0	854.1
12.5°	843.6	843.5	843.4	842.8	841.9	840.9	840.1	839.1
15°	819.4	818.5	817.7	816.7	815.6	814.5	813.4	812.3
17.5°	790.4	788.7	786.9	785.3	783.6	781.9	780.2	778.6
20°	770.5	768.5	766.4	764.4	762.4	760.5	758.6	756.7
22.5°	749.3	746.7	744.1	741.9	740.1	738.3	736.5	734.7
25°	714.5	711.1	707.8	705.2	703.5	701.7	699.9	698.1
27.5°	676.7	672.0	667.3	663.6	660.9	658.3	655.5	652.8
30°	649.7	644.2	638.9	634.8	632.3	629.7	627.1	624.5
32.5°	623.3	617.3	611.3	607.0	604.4	601.6	598.9	596.3
35°	584.0	577.1	570.2	565.3	562.4	559.6	556.7	553.7
37.5°	541.9	534.0	526.2	520.6	517.0	513.4	509.8	506.2
40°	512.6	504.2	495.9	489.8	486.2	482.5	478.8	475.0
42.5°	484.5	475.3	466.2	460.0	456.7	453.4	450.1	446.8
45°	443.1	433.9	424.8	418.3	414.4	410.6	406.7	402.8
47.5°	400.3	390.4	380.4	373.7	370.3	366.8	363.4	360.0
50°	371.5	361.5	351.6	344.7	341.0	337.3	333.7	330.0
52.5°	343.6	333.2	322.8	316.0	312.7	309.4	306.1	302.8
55°	302.0	292.7	283.3	277.1	273.9	270.7	267.5	264.3
57.5°	261.1	252.3	243.6	237.8	235.1	232.3	229.6	226.9
60°	235.4	226.7	218.0	212.4	209.6	206.9	204.2	201.4
62.5°	209.8	201.7	193.5	188.0	185.2	182.3	179.5	176.6
65°	173.4	165.6	157.7	152.9	151.2	149.4	147.6	145.8
67.5°	138.7	132.8	127.0	123.1	121.2	119.3	117.4	115.6
70°	117.3	111.7	106.0	102.4	100.6	98.9	97.1	95.3
72.5°	97.9	93.4	88.8	86.1	85.4	84.6	83.9	83.1
75°	73.3	71.7	70.1	69.2	68.8	68.5	68.1	67.9
77.5°	55.3	54.5	53.5	53.0	52.7	52.3	52.0	51.7
80°	44.5	44.0	43.5	43.2	42.9	42.5	42.2	41.8
82.5°	34.1	33.6	33.2	32.9	32.8	32.8	32.7	32.6
85°	19.6	19.2	18.9	18.8	18.8	18.8	18.8	18.8
87.5°	14.6	14.7	14.8	14.9	14.9	14.9	14.9	14.9
90°	36.7	37.9	39.2	40.2	40.7	41.4	42.0	42.6
92.5°	56.6	57.6	58.6	58.9	58.5	58.2	57.8	57.4
95°	107.7	109.0	110.2	110.8	110.8	110.8	110.8	110.8
97.5°	167.5	168.9	170.4	171.1	171.0	170.8	170.7	170.6
100°	210.8	211.8	212.7	213.5	214.1	214.8	215.4	216.0
102.5°	260.9	261.8	262.8	263.2	263.1	262.9	262.8	262.7
105°	335.5	335.5	335.5	335.7	336.4	337.1	337.6	338.3
107.5°	416.2	417.2	418.2	418.5	418.1	417.7	417.4	417.0
110°	470.1	471.4	472.7	473.0	472.3	471.7	471.1	470.4



TEST NUMBER: P332429-830

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	524.1	525.6	527.1	527.8	527.7	527.5	527.4	527.3
115°	606.1	606.4	606.7	606.7	606.4	606.1	605.8	605.5
117.5°	688.9	688.9	688.8	688.3	687.4	686.5	685.7	684.8
120°	744.1	743.9	743.5	743.0	742.4	741.8	741.1	740.5
122.5°	799.9	799.2	798.3	797.5	796.6	795.7	794.8	793.9
125°	883.0	881.7	880.4	879.1	877.9	876.7	875.3	874.1
127.5°	965.0	963.2	961.4	959.8	958.4	956.9	955.5	953.9
130°	1019.4	1018.1	1016.9	1015.1	1013.0	1010.7	1008.5	1006.3
132.5°	1072.3	1070.8	1069.3	1067.7	1066.0	1064.3	1062.5	1060.8
135°	1151.6	1150.3	1149.1	1148.1	1147.5	1146.8	1146.2	1145.6
137.5°	1229.1	1227.8	1226.4	1225.1	1223.9	1222.8	1221.5	1220.3
140°	1280.0	1279.7	1279.3	1278.1	1275.8	1273.7	1271.4	1269.2
142.5°	1327.8	1327.4	1327.1	1326.1	1324.4	1322.7	1321.0	1319.3
145°	1397.9	1397.6	1397.3	1396.5	1395.2	1394.0	1392.7	1391.5
147.5°	1464.2	1464.2	1464.2	1463.3	1461.4	1459.5	1457.5	1455.7
150°	1505.1	1505.1	1505.1	1504.2	1502.3	1500.4	1498.5	1496.7
152.5°	1542.6	1543.0	1543.6	1543.0	1541.3	1539.7	1538.0	1536.4
155°	1597.2	1598.5	1599.8	1599.3	1597.0	1594.9	1592.6	1590.4
157.5°	1644.3	1645.6	1646.9	1646.7	1644.9	1643.1	1641.3	1639.6
160°	1673.2	1674.8	1676.3	1676.5	1675.3	1674.0	1672.7	1671.4
162.5°	1700.4	1702.0	1703.6	1703.5	1701.4	1699.4	1697.3	1695.4
165°	1734.9	1736.8	1738.7	1738.6	1736.4	1734.2	1731.9	1729.8
167.5°	1762.9	1764.9	1766.8	1766.8	1764.9	1762.9	1761.0	1759.0
170°	1778.2	1780.5	1782.6	1782.6	1780.5	1778.2	1776.0	1773.8
172.5°	1790.2	1792.2	1794.1	1794.0	1791.8	1789.6	1787.3	1785.2
175°	1803.2	1805.1	1806.9	1806.8	1804.6	1802.3	1800.2	1798.0
177.5°	1808.9	1810.4	1811.9	1811.8	1810.1	1808.3	1806.6	1804.8
180°	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3

(END OF REPORT)