

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: P331281-930

Luminaire Tested: **S122DIP-S290D1080U930-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331281-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DIP-S290D1080U930-4F0-1E-UDD-D4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4406.5 lumens
Efficiency: N/A
Efficacy: 104.4 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

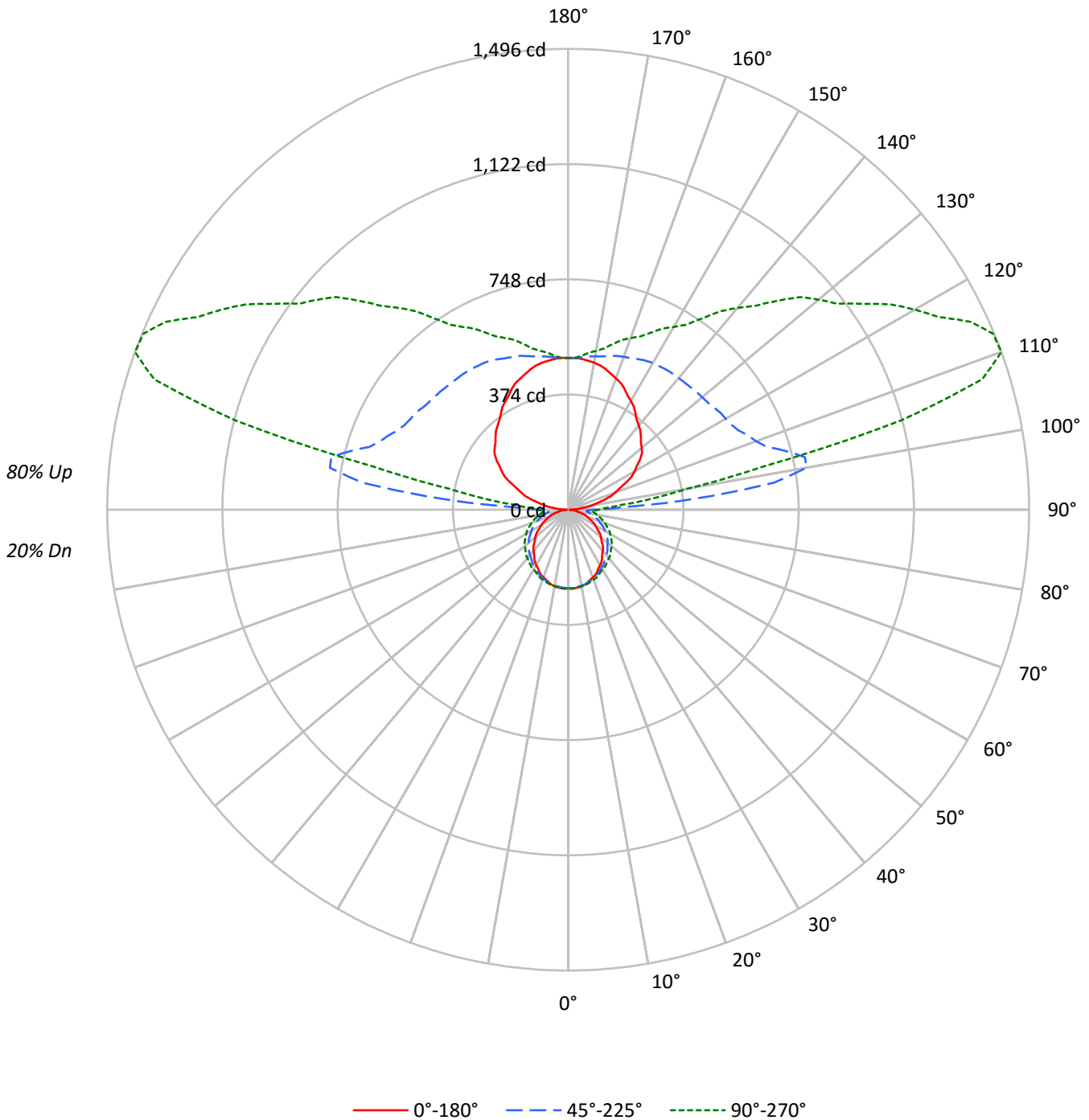
Input Watts (W): 42.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	100	100	100	100	88	88	88	88	67	67	67	47	47	47	28	28	28	20
1	90	86	82	79	80	76	73	70	57	55	53	40	39	37	24	23	23	15
2	82	75	69	64	72	66	61	57	50	46	43	35	33	31	21	20	19	12
3	75	65	58	53	65	58	52	47	44	39	36	30	28	26	18	17	16	10
4	68	58	50	44	60	51	44	39	38	34	30	27	24	22	16	15	13	9
5	62	51	43	37	55	45	38	33	34	30	26	24	21	19	14	13	11	7
6	57	45	38	32	50	40	34	29	31	26	22	21	18	16	13	11	10	6
7	53	41	33	28	46	36	30	25	28	23	19	19	16	14	12	10	9	6
8	49	37	29	24	43	33	26	22	25	20	17	18	15	12	11	9	8	5
9	45	33	26	21	40	30	23	19	23	18	15	16	13	11	10	8	7	4
10	42	30	23	19	37	27	21	17	21	16	13	15	12	10	9	7	6	4

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4127	4127	4127
5°	4146	3973	3957
10°	4121	3855	3812
15°	4063	3730	3659
20°	3992	3597	3511
25°	3922	3468	3376
30°	3821	3336	3241
35°	3720	3209	3148
40°	3615	3101	3051
45°	3512	3004	2971
50°	3404	2917	2891
55°	3289	2822	2810
60°	3151	2723	2724
65°	3006	2608	2622
70°	2844	2485	2512
75°	2639	2365	2410
80°	2312	2240	2305
85°	2005	2134	2226



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.2	0.5
10°-20°	69.4	1.6
20°-30°	105.2	2.4
30°-40°	128.2	2.9
40°-50°	137.9	3.1
50°-60°	133.9	3.0
60°-70°	116.9	2.7
70°-80°	90.0	2.0
80°-90°	64.8	1.5
90°-100°	238.5	5.4
100°-110°	698.6	15.9
110°-120°	730.0	16.6
120°-130°	595.6	13.5
130°-140°	474.0	10.8
140°-150°	355.5	8.1
150°-160°	249.2	5.7
160°-170°	146.7	3.3
170°-180°	47.8	1.1
0°-30°	198.9	4.5
0°-40°	327.1	7.4
0°-60°	598.8	13.6
0°-90°	870.6	19.8
90°-120°	1667.2	37.8
90°-150°	3092.2	70.2
90°-180°	3536.0	80.2
0°-180°	4406.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	256	256	256	256	256	
5°	256	255	253	255	255	24
15°	244	245	245	248	248	69
25°	222	225	228	232	234	102
35°	192	198	205	213	216	120
45°	157	167	180	191	195	121
55°	120	134	153	166	171	108
65°	82	101	122	137	142	82
75°	46	66	90	105	111	48
85°	13	36	60	75	81	14
90°	5	38	81	94	99	4
95°	36	102	414	196	169	38
105°	117	187	734	1299	1116	125
115°	205	263	609	1245	1442	203
125°	285	338	577	1004	1165	253
135°	334	398	562	836	959	258
145°	381	438	555	691	758	239
155°	433	467	539	609	634	199
165°	472	486	516	547	556	133
175°	492	492	496	502	501	47
180°	492	492	492	492	492	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6
2.5°	257.1	256.8	256.7	256.4	256.2	255.9	255.4	255.0	254.5	254.0	254.4
5°	256.3	256.1	255.8	255.6	255.3	254.9	254.5	254.0	253.5	253.0	253.5
7.5°	254.0	253.8	253.6	253.5	253.3	253.1	252.7	252.3	251.9	251.5	252.2
10°	252.3	252.1	251.9	251.8	251.6	251.4	251.1	250.9	250.6	250.4	251.0
12.5°	249.2	249.3	249.3	249.4	249.4	249.3	249.2	249.0	248.7	248.6	249.2
15°	244.4	244.6	244.8	244.9	245.1	245.2	245.2	245.2	245.2	245.2	245.9
17.5°	238.2	238.6	238.9	239.3	239.6	239.9	240.2	240.4	240.7	241.0	241.7
20°	234.1	234.5	234.9	235.3	235.7	236.1	236.4	236.8	237.1	237.4	238.3
22.5°	229.7	230.1	230.6	231.1	231.5	232.0	232.4	232.9	233.4	233.8	234.7
25°	222.3	222.8	223.4	224.0	224.5	225.2	225.9	226.7	227.4	228.1	229.1
27.5°	213.4	214.3	215.2	216.1	217.1	218.0	218.8	219.7	220.6	221.5	222.7
30°	207.4	208.5	209.5	210.6	211.7	212.8	213.9	214.9	216.0	217.0	218.3
32.5°	200.9	202.1	203.3	204.5	205.7	206.9	208.2	209.5	210.8	212.0	213.5
35°	191.5	192.9	194.3	195.7	197.1	198.5	200.2	201.7	203.3	204.8	206.6
37.5°	181.2	182.9	184.5	186.1	187.7	189.6	191.6	193.6	195.6	197.6	199.7
40°	174.5	176.3	178.1	179.9	181.6	183.7	185.9	188.2	190.4	192.6	194.7
42.5°	168.0	169.7	171.5	173.3	175.2	177.3	179.9	182.5	185.0	187.5	189.9
45°	157.0	159.2	161.5	163.7	165.9	168.4	171.4	174.2	177.1	180.0	182.5
47.5°	146.3	148.7	151.2	153.5	156.0	158.9	162.2	165.6	169.0	172.4	175.0
50°	138.9	141.5	144.0	146.5	149.1	152.2	156.0	159.6	163.3	167.1	169.8
52.5°	131.8	134.4	137.1	139.8	142.5	145.8	149.7	153.6	157.5	161.4	164.3
55°	120.3	123.4	126.3	129.2	132.2	135.8	140.1	144.4	148.7	153.0	156.0
57.5°	109.1	112.4	115.8	119.1	122.5	126.3	130.7	135.0	139.4	143.8	147.0
60°	101.1	104.7	108.2	111.7	115.3	119.4	124.1	128.7	133.5	138.1	141.3
62.5°	94.0	97.7	101.3	105.0	108.7	112.8	117.6	122.2	126.9	131.7	134.9
65°	82.2	86.3	90.3	94.3	98.3	102.8	107.6	112.5	117.4	122.2	125.6
67.5°	71.4	75.7	79.8	84.1	88.3	92.9	97.8	102.8	107.8	112.8	116.2
70°	63.7	68.0	72.2	76.6	80.8	85.5	90.6	95.7	100.9	105.9	109.5
72.5°	56.6	61.0	65.4	69.8	74.3	79.0	84.2	89.4	94.6	99.7	103.2
75°	45.6	50.1	54.8	59.4	64.0	68.9	74.2	79.5	84.7	90.0	93.5
77.5°	34.9	39.7	44.5	49.3	54.2	59.3	64.7	70.0	75.3	80.6	84.2
80°	27.8	32.8	37.8	42.8	47.9	53.1	58.4	63.8	69.1	74.4	77.9
82.5°	21.9	26.8	31.8	36.7	41.7	46.9	52.3	57.7	63.1	68.5	72.0
85°	13.4	18.4	23.6	28.6	33.8	38.9	44.2	49.5	54.7	60.0	63.4
87.5°	7.4	12.9	18.6	23.9	29.2	34.8	41.0	47.6	54.1	59.5	62.6
90°	4.6	12.2	20.8	27.5	34.2	42.0	52.0	63.9	74.8	81.1	83.4
92.5°	15.0	24.5	35.8	44.4	55.3	69.0	95.4	130.6	162.6	169.3	153.4
95°	36.1	43.8	57.1	69.5	88.5	115.7	164.2	251.5	366.3	413.8	370.6
97.5°	56.6	65.1	78.6	94.9	115.8	145.6	205.1	324.7	512.0	673.2	707.4
100°	75.5	81.4	92.9	111.2	133.1	163.5	218.3	338.4	547.6	785.2	924.7
102.5°	92.6	97.5	108.8	126.8	149.2	179.4	230.2	337.5	531.3	787.0	1004.4
105°	117.4	123.6	132.6	149.2	172.4	202.3	251.0	339.7	500.2	733.7	988.5
107.5°	144.6	149.5	157.9	172.8	195.4	225.1	272.4	350.0	483.3	676.9	902.1
110°	162.5	168.0	175.3	189.2	210.8	241.1	286.7	359.0	478.6	649.3	848.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	179.1	184.3	192.2	205.1	225.6	256.4	300.4	368.7	477.4	630.6	809.5
115°	205.1	210.8	217.4	229.6	249.5	277.4	321.8	383.3	478.8	609.4	761.6
117.5°	231.6	236.0	242.3	252.9	271.7	300.2	341.4	398.9	482.9	597.5	730.1
120°	248.3	252.4	258.4	267.3	286.6	314.9	355.1	409.5	485.8	590.4	713.0
122.5°	264.2	267.4	273.2	282.6	301.7	330.6	368.4	418.8	489.5	585.6	698.3
125°	284.9	287.7	293.4	304.8	323.7	351.6	388.2	433.5	494.9	577.1	676.9
127.5°	301.6	305.2	313.2	325.5	343.6	371.9	407.2	447.6	500.8	571.2	657.0
130°	311.4	315.1	324.5	337.7	356.5	383.8	418.7	456.5	505.6	567.9	643.8
132.5°	320.5	325.0	335.1	349.0	368.7	395.8	428.8	465.3	510.2	565.3	632.8
135°	333.8	337.5	348.9	363.1	384.9	411.8	443.0	477.0	515.7	561.9	617.7
137.5°	346.7	351.1	362.5	377.6	399.3	424.0	454.3	485.6	520.4	559.6	606.3
140°	356.4	360.2	371.5	386.5	407.3	431.9	460.6	490.1	522.4	557.7	599.7
142.5°	366.3	369.2	379.8	394.8	414.9	438.0	465.6	494.3	524.2	557.0	593.5
145°	380.7	384.5	394.0	408.2	427.1	448.0	473.5	500.1	526.6	555.0	585.8
147.5°	396.6	399.5	408.5	421.7	437.4	455.9	480.0	503.3	527.3	551.6	578.2
150°	407.2	410.1	417.7	430.0	444.2	461.2	483.1	504.8	526.6	549.3	572.0
152.5°	417.8	419.2	426.7	437.6	451.0	466.5	486.1	505.6	525.1	545.5	566.7
155°	432.8	433.7	439.4	449.9	460.3	474.5	490.6	506.7	522.8	538.9	556.9
157.5°	445.3	446.3	450.9	459.9	468.2	480.2	493.8	506.7	518.4	532.1	547.6
160°	453.6	454.6	458.4	465.9	473.5	484.0	495.4	506.7	516.2	527.6	540.8
162.5°	462.0	461.5	465.2	471.2	478.1	486.2	496.1	506.0	513.9	523.7	534.8
165°	471.7	470.8	472.6	478.3	483.1	488.7	497.3	503.9	509.6	516.2	524.7
167.5°	479.6	478.5	480.2	483.8	487.2	490.8	497.0	502.6	505.2	509.6	514.9
170°	484.9	483.1	484.0	486.8	488.7	491.5	496.3	501.0	502.9	505.7	509.6
172.5°	488.0	486.8	486.2	489.1	490.2	492.3	495.5	498.7	499.9	501.2	504.3
175°	491.5	490.6	489.7	491.5	491.5	492.5	494.4	496.3	495.4	496.3	497.3
177.5°	493.3	491.7	491.0	492.5	492.5	492.5	493.3	494.8	493.3	492.5	493.3
180°	492.5	492.5	492.5	492.5	492.5	492.5	492.5	492.5	492.5	492.5	492.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6
2.5°	254.7	255.0	255.4	255.5	255.4	255.2	255.1	254.9
5°	254.0	254.5	254.9	255.1	255.0	254.9	254.9	254.8
7.5°	252.7	253.3	254.0	254.2	254.1	254.0	254.0	253.9
10°	251.7	252.3	253.0	253.3	253.2	253.2	253.1	253.0
12.5°	249.9	250.5	251.2	251.5	251.4	251.4	251.3	251.2
15°	246.6	247.4	248.2	248.5	248.4	248.3	248.3	248.2
17.5°	242.6	243.3	244.0	244.4	244.4	244.4	244.4	244.4
20°	239.2	240.1	241.0	241.5	241.5	241.5	241.5	241.5
22.5°	235.7	236.6	237.5	238.0	238.1	238.2	238.4	238.6
25°	230.2	231.1	232.1	232.7	232.9	233.2	233.4	233.7
27.5°	224.0	225.3	226.5	227.2	227.4	227.6	227.7	228.0
30°	219.6	221.0	222.3	223.1	223.3	223.6	223.8	224.0
32.5°	215.0	216.5	218.1	219.1	219.5	220.0	220.4	220.8
35°	208.5	210.3	212.1	213.3	213.9	214.4	215.0	215.6
37.5°	201.6	203.7	205.7	207.0	207.6	208.2	208.8	209.4
40°	196.9	199.0	201.1	202.6	203.3	204.1	204.8	205.5
42.5°	192.2	194.5	196.9	198.4	199.2	199.9	200.6	201.4
45°	185.1	187.7	190.2	191.9	192.7	193.6	194.4	195.2
47.5°	177.7	180.3	183.0	184.8	185.7	186.6	187.5	188.4
50°	172.6	175.5	178.2	180.1	181.0	181.9	182.8	183.7
52.5°	167.1	170.0	172.8	174.8	175.8	176.8	177.7	178.6
55°	158.9	161.8	164.9	166.8	167.9	169.0	170.1	171.1
57.5°	150.2	153.4	156.5	158.7	159.8	160.9	161.9	163.1
60°	144.4	147.6	150.7	152.8	153.9	155.1	156.3	157.4
62.5°	138.3	141.6	145.0	147.2	148.2	149.3	150.4	151.5
65°	129.0	132.3	135.7	137.9	139.0	140.1	141.1	142.2
67.5°	119.5	122.9	126.4	128.7	129.7	130.9	132.0	133.1
70°	113.0	116.5	120.1	122.4	123.4	124.3	125.3	126.3
72.5°	106.6	110.1	113.6	115.9	117.1	118.3	119.5	120.7
75°	97.1	100.6	104.2	106.5	107.5	108.6	109.7	110.7
77.5°	87.7	91.2	94.7	97.1	98.2	99.4	100.5	101.7
80°	81.4	84.8	88.3	90.6	91.7	92.9	94.0	95.1
82.5°	75.4	78.9	82.3	84.6	85.7	86.8	87.9	88.9
85°	66.9	70.4	73.9	76.1	77.3	78.4	79.6	80.7
87.5°	65.8	68.8	72.6	74.9	76.0	77.0	78.1	79.2
90°	85.8	87.2	92.4	95.5	96.4	97.4	98.4	99.4
92.5°	135.3	126.8	122.1	118.2	118.5	116.4	118.2	117.6
95°	297.0	242.3	205.7	186.9	175.6	169.0	167.1	169.1
97.5°	624.6	522.3	422.9	356.4	312.2	289.8	277.0	270.0
100°	907.8	793.4	666.8	554.1	476.4	436.6	410.0	393.9
102.5°	1092.7	1069.3	977.3	857.9	773.3	704.7	671.3	649.1
105°	1188.4	1298.3	1313.4	1284.1	1226.3	1168.5	1128.6	1116.3
107.5°	1113.9	1277.8	1379.1	1426.8	1435.1	1432.7	1425.5	1408.8
110°	1050.4	1222.6	1346.5	1425.9	1467.5	1486.5	1495.9	1495.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	992.3	1157.6	1289.9	1380.6	1438.2	1469.3	1486.2	1492.2
115°	920.3	1068.6	1195.1	1294.4	1362.5	1407.0	1432.6	1441.9
117.5°	865.3	995.8	1110.7	1203.9	1273.3	1320.1	1347.0	1354.9
120°	837.5	957.2	1059.9	1147.7	1214.9	1260.4	1288.7	1299.1
122.5°	815.1	925.0	1022.3	1101.6	1161.9	1206.4	1231.6	1240.3
125°	782.3	882.1	967.7	1040.2	1095.8	1132.5	1157.0	1165.3
127.5°	749.9	840.2	920.9	987.8	1036.4	1070.9	1092.1	1098.9
130°	729.0	812.5	889.2	953.1	1000.2	1033.1	1052.6	1060.9
132.5°	709.0	786.3	857.0	917.0	963.3	996.1	1014.2	1021.7
135°	680.9	745.2	809.4	863.6	905.0	936.9	954.6	959.1
137.5°	658.1	711.8	763.0	810.2	848.0	875.4	891.0	897.2
140°	643.6	690.4	735.3	777.9	808.7	833.8	848.5	854.7
142.5°	631.9	671.6	710.1	745.8	774.9	797.8	810.9	812.4
145°	615.6	647.4	677.3	705.2	728.3	744.9	754.7	758.0
147.5°	603.2	627.9	650.9	671.2	690.1	703.2	709.8	711.7
150°	594.8	615.6	635.5	652.6	666.8	678.2	683.8	684.8
152.5°	586.4	605.8	622.6	637.4	648.6	658.4	662.6	662.8
155°	574.9	590.0	604.2	614.7	625.1	631.7	635.5	633.7
157.5°	561.4	574.1	586.0	594.2	601.6	607.1	608.8	608.8
160°	553.1	563.5	574.0	580.6	587.2	591.9	592.9	592.9
162.5°	544.8	553.7	562.6	567.7	574.3	577.6	578.5	577.7
165°	532.3	538.9	545.5	549.3	553.1	556.9	556.9	556.0
167.5°	520.3	525.5	530.0	533.5	535.1	537.2	537.0	535.9
170°	514.3	517.1	520.9	522.8	523.7	526.6	525.6	523.7
172.5°	507.4	509.6	512.6	513.7	514.7	516.0	515.0	513.9
175°	500.1	501.0	502.0	502.9	502.9	503.9	502.9	501.0
177.5°	494.8	494.8	495.5	495.5	495.5	495.5	494.8	493.3
180°	492.5	492.5	492.5	492.5	492.5	492.5	492.5	492.5

(END OF REPORT)