

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: P332648-930

Luminaire Tested: **S124DIP-S1020D810U930-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332648-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIP-S1020D810U930-4F0-1E-UDD-D4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 810 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

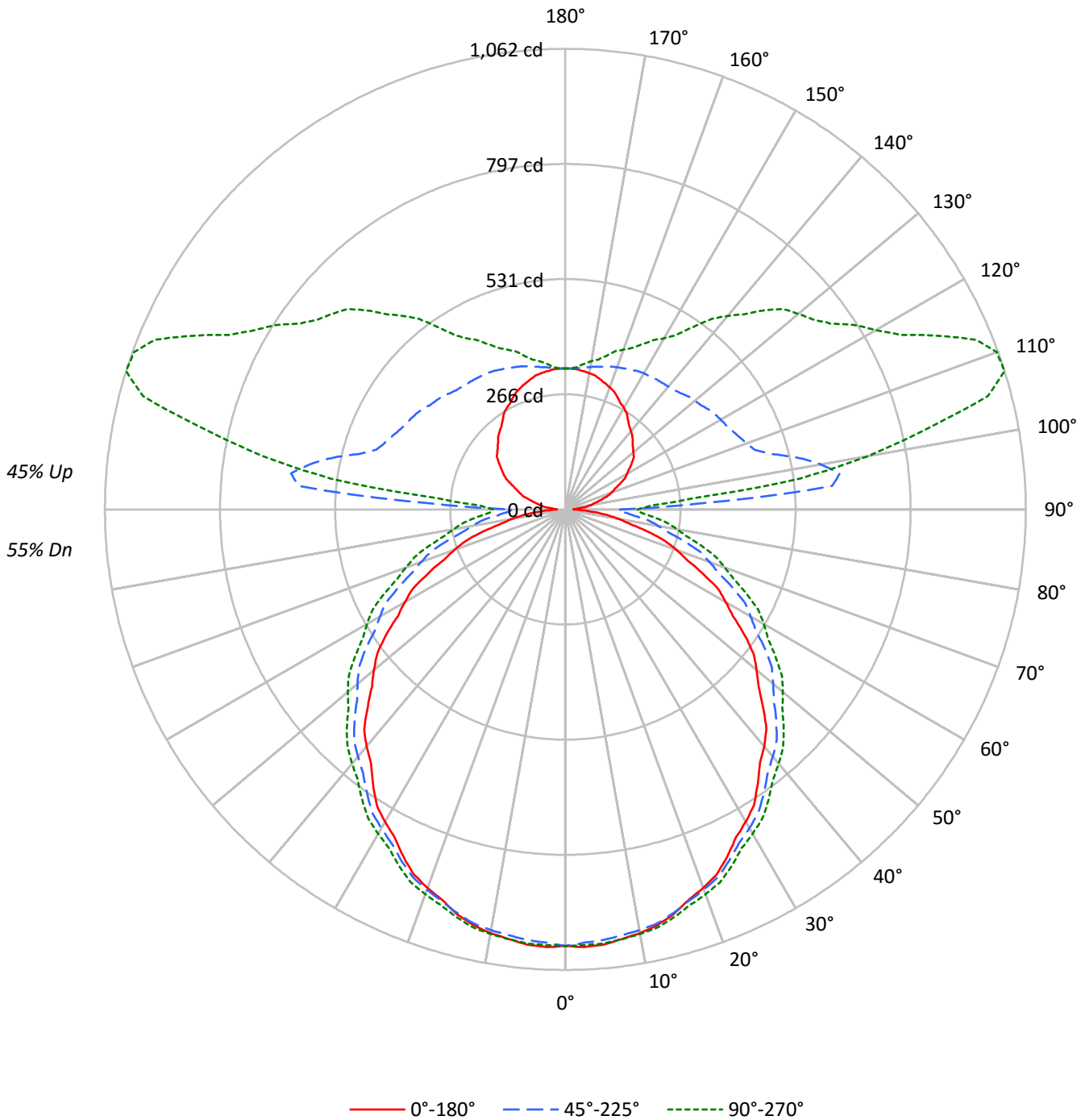
Lumens per Lamp: N/A
Luminaire Lumens: 5793.2 lumens
Efficiency: N/A
Efficacy: 106.5 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: General Diffuse

Input Watts (W): 54.4
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	50	30	10	0	
RCR																						
0	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55				
1	98	93	89	85	90	86	82	79	74	71	68	62	60	58	52	50	49	44				
2	89	80	74	68	82	75	69	64	64	60	56	54	51	48	45	42	40	36				
3	80	70	63	56	74	65	58	53	56	51	46	47	43	40	39	36	34	30				
4	73	62	54	47	68	58	50	45	50	44	39	42	38	34	35	32	29	25				
5	67	55	47	40	62	51	44	38	44	38	34	38	33	29	31	28	25	22				
6	62	49	41	35	57	46	38	33	40	34	29	34	29	25	28	25	22	19				
7	57	44	36	30	53	42	34	29	36	30	26	31	26	22	26	22	19	17				
8	53	40	32	27	49	38	30	25	33	27	23	28	23	20	24	20	17	15				
9	49	37	29	24	46	34	27	23	30	24	20	26	21	18	22	18	15	13				
10	46	34	26	21	43	32	25	20	28	22	18	24	19	16	20	17	14	12				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8127	8127	8127
5°	8151	7942	7965
10°	8102	7812	7807
15°	8029	7662	7620
20°	7920	7496	7438
25°	7797	7310	7239
30°	7663	7125	7034
35°	7511	6935	6855
40°	7390	6755	6667
45°	7210	6588	6507
50°	7059	6397	6337
55°	6902	6217	6138
60°	6657	5986	5956
65°	6389	5740	5734
70°	6066	5458	5474
75°	5612	5146	5239
80°	5110	4847	5007
85°	4474	4583	4872



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.3	1.6
10°-20°	273.1	4.7
20°-30°	413.0	7.1
30°-40°	499.7	8.6
40°-50°	528.2	9.1
50°-60°	497.1	8.6
60°-70°	412.5	7.1
70°-80°	289.7	5.0
80°-90°	165.6	2.9
90°-100°	331.6	5.7
100°-110°	559.8	9.7
110°-120°	485.2	8.4
120°-130°	394.8	6.8
130°-140°	318.2	5.5
140°-150°	236.5	4.1
150°-160°	164.6	2.8
160°-170°	96.8	1.7
170°-180°	31.5	0.5
0°-30°	781.4	13.5
0°-40°	1281.1	22.1
0°-60°	2306.5	39.8
0°-90°	3174.2	54.8
90°-120°	1376.6	23.8
90°-150°	2326.1	40.2
90°-180°	2619.0	45.2
0°-180°	5793.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1007	1007	1007	1007	1007	
5°	1008	1004	996	1005	1004	96
15°	966	967	964	973	973	272
25°	884	890	894	906	907	407
35°	773	787	798	813	817	484
45°	645	666	688	706	712	498
55°	505	529	562	584	592	450
65°	349	386	424	451	461	346
75°	194	236	283	313	325	206
85°	60	107	158	190	203	64
90°	19	68	123	156	167	13
95°	36	119	618	385	294	35
105°	85	142	493	1002	1008	91
115°	138	183	426	793	947	137
125°	187	222	403	662	747	167
135°	220	262	378	569	650	170
145°	252	287	366	463	513	158
155°	285	308	356	403	420	131
165°	310	320	341	361	367	88
175°	324	324	327	332	330	31
180°	324	324	324	324	324	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7
2.5°	1010.2	1009.7	1009.0	1008.4	1007.8	1006.7	1005.1	1003.6	1001.9	1000.3	1001.7
5°	1007.7	1007.0	1006.2	1005.5	1004.8	1003.5	1001.8	1000.0	998.3	996.5	998.5
7.5°	999.1	998.7	998.3	997.8	997.4	996.5	995.0	993.5	992.1	990.6	992.9
10°	992.0	991.7	991.5	991.2	991.0	990.2	989.0	987.7	986.4	985.2	987.5
12.5°	982.0	982.0	981.9	981.9	981.9	981.4	980.6	979.7	978.8	978.0	980.1
15°	966.0	966.3	966.5	966.8	967.0	966.8	966.0	965.3	964.5	963.8	966.0
17.5°	944.2	944.9	945.7	946.4	947.2	947.5	947.3	947.2	947.1	946.9	949.2
20°	928.9	929.6	930.3	931.1	931.9	932.4	932.6	932.9	933.1	933.4	935.9
22.5°	911.7	912.6	913.6	914.6	915.5	916.2	916.6	917.1	917.5	918.0	920.6
25°	883.8	885.3	886.7	888.3	889.7	890.9	891.6	892.4	893.2	893.9	896.7
27.5°	852.6	854.8	857.0	859.2	861.4	863.2	864.3	865.4	866.6	867.7	870.3
30°	831.9	833.9	835.9	837.9	839.9	841.8	843.5	845.3	847.0	848.8	851.6
32.5°	809.3	811.8	814.2	816.6	819.0	821.2	823.1	825.1	827.0	829.0	832.1
35°	773.3	776.3	779.3	782.3	785.3	788.1	790.6	793.0	795.6	798.1	801.6
37.5°	736.9	740.5	743.9	747.4	750.8	754.1	757.2	760.3	763.4	766.5	770.1
40°	713.5	716.8	720.1	723.3	726.6	729.9	733.4	736.9	740.5	744.0	747.7
42.5°	686.5	690.2	693.8	697.5	701.1	705.0	709.1	713.2	717.3	721.5	725.6
45°	644.7	649.5	654.3	659.1	663.8	668.5	673.4	678.1	682.8	687.6	691.9
47.5°	604.9	609.8	614.7	619.6	624.5	629.7	635.2	640.7	646.3	651.8	656.2
50°	576.0	581.6	587.0	592.6	598.0	603.6	609.1	614.6	620.1	625.6	630.6
52.5°	547.1	552.7	558.2	563.7	569.2	575.1	581.4	587.7	594.0	600.4	605.4
55°	505.0	510.3	515.5	520.8	526.0	532.4	540.0	547.5	555.0	562.5	567.5
57.5°	457.9	464.4	470.9	477.4	484.0	490.9	498.4	505.9	513.3	520.8	526.8
60°	427.2	433.7	440.3	446.8	453.3	460.6	469.0	477.2	485.4	493.7	499.5
62.5°	397.5	404.6	411.7	418.8	425.9	433.6	441.9	450.1	458.4	466.7	472.5
65°	349.4	357.4	365.5	373.5	381.5	389.8	398.3	406.8	415.3	423.9	430.1
67.5°	303.2	311.8	320.2	328.8	337.3	346.1	355.2	364.4	373.5	382.6	389.0
70°	271.7	280.2	288.7	297.2	305.7	314.8	324.2	333.8	343.3	352.9	359.6
72.5°	241.0	249.7	258.4	267.2	275.9	285.3	295.4	305.5	315.7	325.8	332.3
75°	193.9	203.2	212.4	221.7	231.0	240.8	251.4	261.9	272.4	282.9	289.9
77.5°	149.9	159.7	169.6	179.4	189.2	199.6	210.7	221.7	232.7	243.7	250.8
80°	122.9	132.9	142.9	153.0	163.0	173.5	184.5	195.5	206.5	217.5	225.1
82.5°	95.8	106.2	116.7	127.1	137.5	148.2	159.2	170.2	181.3	192.3	200.0
85°	59.8	70.3	80.8	91.3	101.8	112.8	124.0	135.3	146.5	157.8	165.3
87.5°	33.5	43.9	54.5	64.9	75.3	85.9	97.6	108.6	119.8	131.0	138.2
90°	18.7	30.0	41.9	52.6	63.2	73.6	88.2	99.0	111.0	123.1	129.7
92.5°	24.4	36.8	51.8	68.6	86.8	110.0	153.2	213.4	272.4	308.4	281.7
95°	35.7	45.9	60.5	77.0	100.6	136.6	202.4	317.2	479.9	617.7	639.0
97.5°	51.0	58.1	70.8	85.5	105.7	136.8	189.7	286.3	447.8	638.3	768.8
100°	60.8	67.3	78.4	92.5	111.1	139.7	187.0	268.9	408.7	598.2	768.2
102.5°	71.0	77.8	87.5	100.3	117.6	144.6	188.3	261.1	381.4	550.3	725.2
105°	84.7	91.6	99.9	112.5	129.0	154.7	194.5	256.7	355.2	492.6	648.7
107.5°	102.1	107.5	114.8	127.0	142.1	166.8	203.6	260.6	345.6	457.5	586.0
110°	112.9	117.7	124.4	135.6	150.6	173.9	210.7	264.1	343.0	444.2	553.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	123.3	127.6	134.4	144.7	159.2	182.2	217.6	268.1	341.9	435.1	533.4
115°	138.1	142.3	149.0	157.6	171.9	194.3	227.8	274.1	341.4	425.9	511.8
117.5°	154.7	157.8	163.1	171.5	184.2	206.4	238.1	280.8	341.4	418.5	498.1
120°	165.0	167.1	172.3	180.0	191.6	213.4	244.9	285.4	341.7	414.0	489.8
122.5°	175.2	176.7	181.2	187.9	199.9	220.8	251.8	289.8	342.2	409.0	481.2
125°	187.4	189.8	193.3	200.1	212.0	232.8	262.0	297.7	344.1	402.6	468.6
127.5°	199.1	200.9	205.2	213.0	225.3	245.6	272.6	304.4	344.2	394.4	452.5
130°	204.8	207.2	212.0	221.3	233.2	253.6	279.2	308.1	344.6	389.4	442.4
132.5°	211.5	213.3	219.6	228.4	241.3	260.2	285.1	312.7	345.4	385.3	433.5
135°	219.6	222.2	228.5	239.4	252.8	270.3	293.0	317.7	345.6	378.0	419.0
137.5°	228.9	231.1	237.9	247.9	261.6	277.7	298.2	320.5	344.5	372.7	406.8
140°	235.5	237.3	244.0	254.6	267.7	283.0	302.4	323.0	345.0	369.5	400.1
142.5°	241.8	243.7	250.1	260.4	273.2	288.0	306.4	325.1	345.6	367.6	394.8
145°	251.7	253.3	259.4	268.2	280.0	293.9	310.5	327.7	346.2	365.9	387.8
147.5°	263.0	263.4	268.7	277.7	287.5	300.0	315.6	330.6	346.8	363.6	381.8
150°	270.2	270.5	275.4	282.8	292.1	304.1	318.1	332.2	346.8	362.1	378.1
152.5°	275.9	276.0	281.0	288.1	296.6	307.7	320.2	333.1	345.8	359.5	374.0
155°	284.9	285.6	289.4	295.8	302.8	312.3	323.2	334.0	344.2	355.7	367.9
157.5°	294.0	294.0	297.6	302.6	308.7	316.2	325.4	334.0	342.6	351.8	361.6
160°	299.6	299.6	302.1	306.6	311.8	318.8	326.4	334.0	341.0	348.7	357.0
162.5°	304.8	304.2	306.2	310.2	314.8	320.2	327.4	334.0	339.6	345.7	352.9
165°	310.5	310.5	311.8	315.0	318.1	322.0	327.7	332.8	336.6	341.0	346.2
167.5°	316.2	315.6	316.2	318.6	320.4	323.3	327.6	331.3	333.5	336.5	340.1
170°	318.8	318.1	318.8	320.7	322.0	323.8	327.0	330.2	331.5	333.4	336.0
172.5°	321.3	320.7	320.8	322.2	322.9	324.3	326.5	329.2	329.5	330.4	332.4
175°	323.8	323.2	323.2	323.8	324.5	324.5	325.8	327.7	327.0	327.0	328.3
177.5°	325.0	324.5	324.0	324.5	324.5	324.5	325.0	326.0	325.0	325.0	325.5
180°	324.5	324.5	324.5	324.5	324.5	324.5	324.5	324.5	324.5	324.5	324.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7
2.5°	1003.1	1004.5	1005.9	1006.5	1006.3	1006.1	1005.9	1005.8
5°	1000.5	1002.5	1004.5	1005.3	1005.1	1004.9	1004.6	1004.4
7.5°	995.2	997.4	999.6	1000.6	1000.4	1000.1	999.9	999.6
10°	989.7	992.0	994.3	995.2	995.0	994.7	994.5	994.3
12.5°	982.1	984.1	986.2	987.2	987.2	987.1	987.1	987.0
15°	968.3	970.5	972.8	973.8	973.5	973.3	973.1	972.8
17.5°	951.5	953.8	956.1	957.2	956.9	956.8	956.5	956.3
20°	938.3	940.9	943.4	944.6	944.6	944.6	944.6	944.6
22.5°	923.0	925.5	928.1	929.5	929.9	930.3	930.7	931.1
25°	899.4	902.1	904.9	906.4	906.7	906.9	907.2	907.4
27.5°	872.9	875.4	878.0	879.4	879.7	880.0	880.3	880.6
30°	854.4	857.0	859.8	861.4	861.9	862.4	863.0	863.5
32.5°	835.3	838.5	841.6	843.4	843.9	844.4	844.9	845.5
35°	805.1	808.6	812.1	814.2	815.0	815.7	816.5	817.3
37.5°	773.6	777.2	780.7	782.9	783.7	784.6	785.3	786.1
40°	751.5	755.2	759.0	761.4	762.4	763.4	764.4	765.4
42.5°	729.8	733.9	738.1	740.5	741.4	742.2	743.0	743.7
45°	696.1	700.4	704.7	707.4	708.7	709.9	711.2	712.4
47.5°	660.6	665.0	669.4	672.4	673.8	675.4	676.9	678.4
50°	635.6	640.7	645.6	648.9	650.4	651.9	653.4	654.9
52.5°	610.4	615.4	620.4	623.6	625.2	626.6	628.2	629.7
55°	572.5	577.6	582.5	585.8	587.3	588.8	590.3	591.8
57.5°	532.7	538.7	544.6	548.3	549.7	551.1	552.5	553.9
60°	505.2	511.0	516.7	520.7	522.7	524.6	526.7	528.6
62.5°	478.2	484.0	489.8	493.6	495.6	497.6	499.6	501.7
65°	436.3	442.6	448.9	453.1	455.0	457.1	459.0	461.1
67.5°	395.3	401.7	408.1	412.2	414.2	416.1	418.1	420.0
70°	366.3	373.1	379.8	384.2	385.9	387.7	389.4	391.2
72.5°	338.9	345.4	352.0	356.3	358.2	360.2	362.2	364.1
75°	296.9	303.9	311.0	315.6	317.9	320.2	322.4	324.7
77.5°	258.0	265.1	272.1	277.0	279.3	281.8	284.1	286.6
80°	232.6	240.1	247.6	252.3	254.4	256.4	258.4	260.4
82.5°	207.7	215.5	223.1	228.1	230.3	232.5	234.7	236.9
85°	172.8	180.3	187.8	192.9	195.4	197.9	200.4	202.9
87.5°	145.5	153.0	160.4	165.1	167.4	169.7	171.8	174.0
90°	137.6	145.5	153.4	158.0	160.7	163.3	164.7	166.7
92.5°	245.5	221.6	209.5	201.2	195.7	194.2	194.0	196.1
95°	584.0	492.0	413.3	356.0	326.9	309.5	300.2	294.2
97.5°	802.2	772.0	716.2	654.0	610.4	574.1	557.2	546.1
100°	868.0	887.5	863.1	820.1	766.5	729.3	711.9	708.6
102.5°	859.6	929.4	944.9	929.6	897.5	871.3	853.0	850.9
105°	801.0	917.5	986.8	1017.1	1020.4	1017.3	1010.4	1008.5
107.5°	721.4	845.0	940.0	1000.9	1034.1	1050.5	1058.7	1062.1
110°	673.1	789.1	887.4	961.4	1008.6	1037.4	1050.9	1058.7



TEST NUMBER: P332648-930

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	636.1	739.2	832.1	906.0	959.4	993.8	1011.8	1023.1
115°	597.0	680.9	761.0	825.8	877.9	917.9	940.0	947.0
117.5°	573.8	643.9	707.8	763.3	808.2	842.4	865.0	871.0
120°	561.7	626.0	682.0	730.8	769.2	799.2	817.7	826.8
122.5°	551.1	613.3	664.8	707.8	740.4	766.1	782.0	790.8
125°	534.5	594.1	642.9	681.0	708.0	728.1	741.7	747.0
127.5°	514.5	571.4	619.8	656.2	683.5	701.6	713.5	719.1
130°	499.8	554.6	602.5	639.3	666.9	684.4	696.1	701.4
132.5°	485.1	536.7	583.3	620.0	647.1	666.6	677.8	683.1
135°	463.2	508.6	551.5	586.1	613.1	632.4	644.2	649.5
137.5°	443.8	482.6	519.0	550.2	575.4	594.2	603.9	609.8
140°	432.7	465.9	497.9	526.9	550.5	565.7	575.9	582.3
142.5°	423.0	452.2	479.6	504.8	525.6	539.7	548.7	553.3
145°	409.8	432.9	453.6	472.6	489.6	501.4	508.8	513.0
147.5°	398.8	416.3	431.8	446.3	458.9	468.9	474.6	476.5
150°	393.3	408.0	420.8	432.2	442.5	450.7	454.5	455.2
152.5°	387.8	400.3	412.1	421.5	430.2	436.9	439.2	439.9
155°	379.3	389.6	399.1	406.8	413.1	418.2	420.1	420.1
157.5°	370.2	378.8	386.9	393.0	397.8	401.6	402.8	402.8
160°	364.7	371.7	378.7	383.8	387.6	391.4	392.1	392.1
162.5°	359.1	365.0	370.6	375.1	377.9	381.7	382.4	381.9
165°	351.2	355.1	359.5	362.7	365.3	367.9	367.2	366.6
167.5°	343.7	346.7	350.3	352.1	353.4	355.1	355.0	354.4
170°	339.2	341.0	343.6	345.5	346.8	347.4	346.8	346.8
172.5°	335.1	336.5	338.0	339.4	340.1	340.8	340.1	339.2
175°	329.6	330.2	331.5	331.5	331.5	332.8	331.5	330.2
177.5°	326.0	326.5	326.5	327.0	326.5	327.0	326.0	325.0
180°	324.5	324.5	324.5	324.5	324.5	324.5	324.5	324.5

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