

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: P332657-927

Luminaire Tested: **S124DIP-S1020D1035U927-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332657-927  
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-S1020D1035U927-4F0-1E-UDD-D4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1035 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6264.0 lumens  
Efficiency: N/A  
Efficacy: 103.5 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

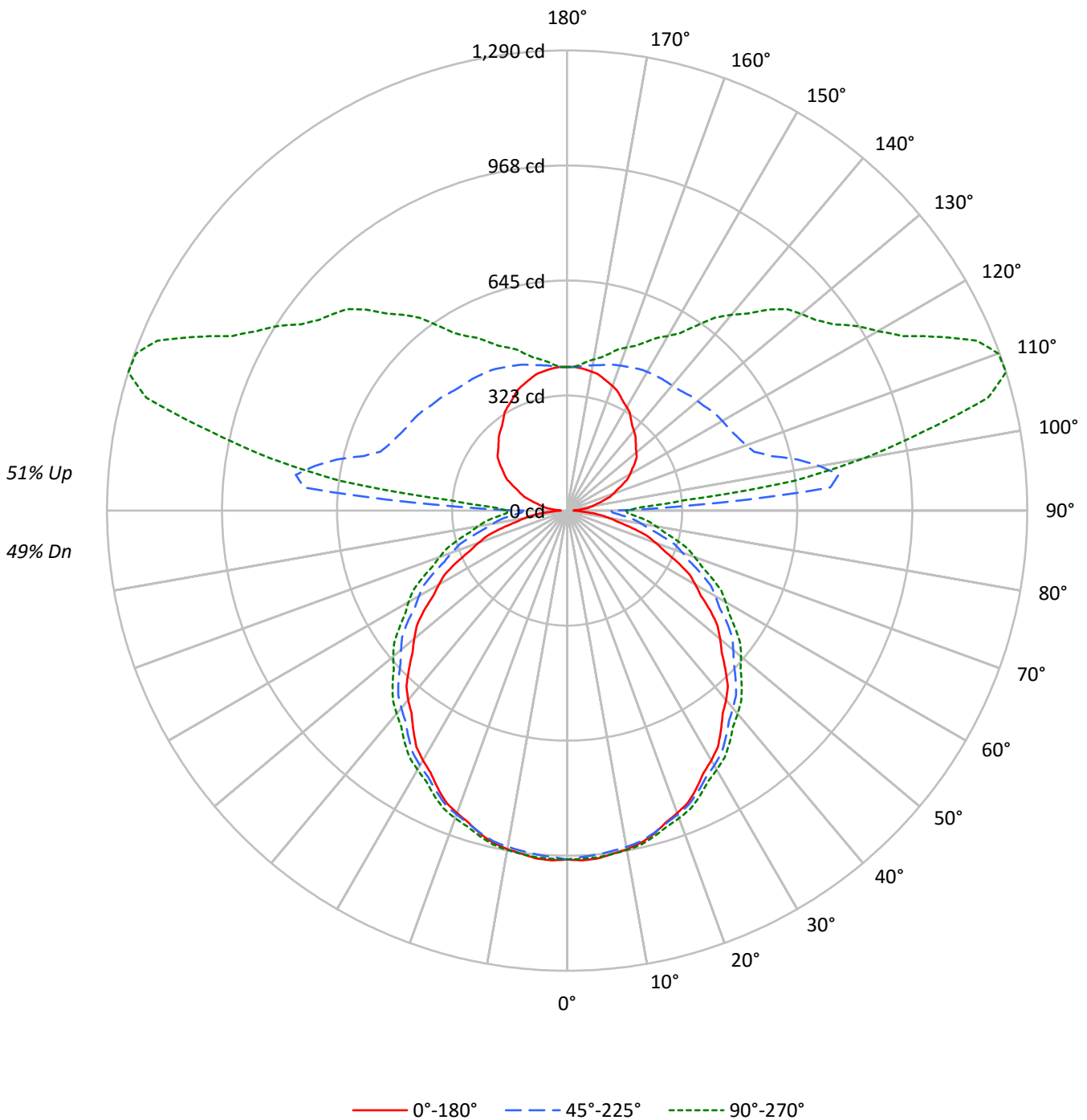
Input Watts (W): 60.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	55	55	55	49
1	97	92	88	84	89	85	81	78	71	68	66	59	57	55	47	46	45	39
2	88	80	73	68	80	73	68	63	62	58	54	51	48	45	41	39	37	32
3	80	70	62	56	73	64	57	52	54	49	45	45	41	38	36	33	31	27
4	73	61	53	47	66	57	49	44	48	42	38	40	35	32	32	29	26	23
5	67	55	46	40	61	50	43	37	43	37	32	35	31	28	29	25	23	19
6	61	49	40	34	56	45	38	32	38	32	28	32	27	24	26	23	20	17
7	57	44	36	30	52	41	33	28	35	29	25	29	24	21	24	20	18	15
8	52	40	32	26	48	37	30	25	32	26	22	26	22	19	22	18	16	13
9	49	36	29	23	45	34	27	22	29	23	19	24	20	17	20	17	14	12
10	46	33	26	21	42	31	24	20	27	21	17	22	18	15	19	15	13	11

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

	0°	45°	90°
0°	7896	7896	7896
5°	7920	7717	7739
10°	7872	7591	7585
15°	7802	7444	7404
20°	7695	7284	7227
25°	7575	7102	7034
30°	7445	6922	6835
35°	7299	6739	6660
40°	7181	6564	6478
45°	7007	6402	6322
50°	6859	6215	6158
55°	6707	6040	5964
60°	6469	5816	5788
65°	6208	5578	5571
70°	5894	5303	5319
75°	5453	5001	5089
80°	4964	4711	4865
85°	4347	4456	4735



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	92.6	1.5
10°-20°	265.4	4.2
20°-30°	401.3	6.4
30°-40°	485.5	7.8
40°-50°	513.3	8.2
50°-60°	483.1	7.7
60°-70°	400.8	6.4
70°-80°	281.5	4.5
80°-90°	161.4	2.6
90°-100°	385.2	6.2
100°-110°	675.1	10.8
110°-120°	589.0	9.4
120°-130°	482.4	7.7
130°-140°	391.6	6.3
140°-150°	292.7	4.7
150°-160°	204.1	3.3
160°-170°	120.1	1.9
170°-180°	39.1	0.6
0°-30°	759.3	12.1
0°-40°	1244.8	19.9
0°-60°	2241.1	35.8
0°-90°	3084.7	49.2
90°-120°	1649.3	26.3
90°-150°	2816.0	45.0
90°-180°	3179.0	50.8
0°-180°	6264.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	978	978	978	978	978	
5°	979	976	968	976	976	93
15°	939	940	936	946	945	264
25°	859	865	868	880	882	395
35°	751	764	776	790	794	470
45°	626	647	668	686	692	484
55°	491	514	546	568	575	437
65°	340	375	412	438	448	336
75°	188	229	275	304	315	200
85°	58	104	153	185	197	62
90°	18	68	123	155	166	13
95°	40	133	740	443	328	41
105°	102	167	591	1216	1221	110
115°	169	222	514	964	1152	168
125°	231	275	491	807	911	206
135°	272	324	466	698	796	210
145°	312	356	454	573	633	196
155°	354	382	441	500	521	163
165°	385	397	423	448	455	109
175°	402	402	406	411	410	38
180°	402	402	402	402	402	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	981.6	981.0	980.4	979.9	979.2	978.2	976.6	975.1	973.5	971.9	973.3
5°	979.1	978.4	977.7	977.0	976.3	975.0	973.4	971.6	969.9	968.2	970.2
7.5°	970.8	970.4	969.9	969.6	969.1	968.2	966.8	965.4	963.9	962.5	964.7
10°	963.8	963.6	963.4	963.1	962.9	962.1	960.9	959.7	958.5	957.3	959.5
12.5°	954.2	954.2	954.1	954.0	954.0	953.5	952.8	951.9	951.1	950.2	952.3
15°	938.7	938.9	939.1	939.4	939.6	939.4	938.7	937.9	937.2	936.4	938.7
17.5°	917.4	918.1	918.9	919.6	920.4	920.6	920.4	920.4	920.2	920.0	922.3
20°	902.5	903.2	904.0	904.7	905.5	905.9	906.2	906.4	906.7	906.9	909.3
22.5°	885.8	886.8	887.7	888.7	889.5	890.3	890.7	891.1	891.5	892.0	894.5
25°	858.7	860.2	861.6	863.1	864.5	865.6	866.3	867.1	867.8	868.5	871.2
27.5°	828.5	830.6	832.7	834.9	837.0	838.7	839.8	840.9	842.0	843.1	845.7
30°	808.3	810.2	812.2	814.1	816.1	817.9	819.6	821.3	823.0	824.7	827.4
32.5°	786.4	788.8	791.1	793.4	795.7	797.9	799.8	801.7	803.6	805.5	808.5
35°	751.4	754.3	757.2	760.1	763.0	765.7	768.2	770.6	773.0	775.5	778.9
37.5°	716.1	719.5	722.8	726.2	729.5	732.7	735.7	738.7	741.8	744.8	748.2
40°	693.3	696.5	699.7	702.8	706.0	709.2	712.6	716.1	719.5	722.9	726.5
42.5°	667.0	670.6	674.1	677.7	681.2	685.0	689.0	693.0	697.0	701.0	705.0
45°	626.5	631.1	635.7	640.4	645.0	649.6	654.3	658.9	663.5	668.1	672.2
47.5°	587.7	592.5	597.2	602.1	606.8	611.9	617.2	622.6	628.0	633.3	637.5
50°	559.7	565.1	570.4	575.8	581.1	586.5	591.8	597.1	602.5	607.8	612.8
52.5°	531.6	537.0	542.3	547.7	553.1	558.8	564.9	571.1	577.2	583.4	588.2
55°	490.7	495.8	500.9	506.0	511.1	517.3	524.7	532.0	539.2	546.5	551.4
57.5°	444.9	451.2	457.6	463.9	470.2	477.0	484.3	491.5	498.8	506.0	511.8
60°	415.1	421.4	427.8	434.1	440.5	447.6	455.7	463.7	471.7	479.7	485.3
62.5°	386.2	393.1	400.1	406.9	413.8	421.3	429.4	437.4	445.4	453.4	459.1
65°	339.5	347.3	355.1	362.9	370.7	378.7	387.0	395.3	403.5	411.9	417.9
67.5°	294.6	302.9	311.2	319.5	327.7	336.3	345.2	354.0	362.9	371.8	378.0
70°	264.0	272.3	280.5	288.8	297.1	305.9	315.1	324.3	333.6	342.9	349.4
72.5°	234.2	242.6	251.1	259.6	268.1	277.2	287.0	296.8	306.7	316.6	322.9
75°	188.4	197.4	206.4	215.4	224.4	234.0	244.2	254.4	264.7	274.9	281.7
77.5°	145.7	155.2	164.8	174.3	183.9	193.9	204.7	215.4	226.1	236.8	243.7
80°	119.4	129.1	138.9	148.6	158.4	168.6	179.3	190.0	200.7	211.4	218.7
82.5°	93.1	103.2	113.4	123.5	133.6	144.0	154.7	165.4	176.2	186.9	194.3
85°	58.1	68.3	78.5	88.7	98.9	109.6	120.5	131.4	142.4	153.4	160.7
87.5°	32.6	42.9	53.2	63.3	73.4	83.7	95.3	106.0	116.9	127.9	134.8
90°	18.3	29.6	41.7	52.3	62.8	72.9	88.1	98.5	110.6	122.6	129.0
92.5°	25.7	38.5	54.7	73.1	93.5	119.5	170.2	242.0	312.3	354.0	319.0
95°	40.3	50.8	66.7	85.0	112.0	154.2	233.0	372.7	571.7	739.8	764.6
97.5°	59.7	66.6	80.4	96.8	119.9	156.2	219.0	336.0	533.9	767.4	927.5
100°	72.2	78.5	90.3	106.2	127.5	160.7	216.9	315.8	486.6	719.1	928.1
102.5°	84.8	91.7	102.1	116.5	136.4	167.9	219.4	307.3	453.9	660.9	876.1
105°	102.3	109.6	118.4	132.8	151.9	181.8	228.8	303.4	423.1	591.0	783.0
107.5°	124.0	129.6	137.5	151.6	169.2	198.1	241.4	309.7	412.8	549.3	706.9
110°	137.7	142.7	150.0	163.0	180.5	207.9	251.2	315.1	410.6	533.8	668.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	150.7	155.3	163.0	174.8	192.0	219.0	260.6	321.0	410.4	523.7	644.1
115°	169.4	174.0	181.8	191.9	209.1	235.4	274.9	330.1	411.5	514.1	619.1
117.5°	190.1	193.7	199.9	209.9	225.3	251.8	289.1	339.9	413.1	506.8	604.0
120°	203.2	205.5	211.8	221.2	235.4	261.4	298.5	346.7	414.6	502.4	595.0
122.5°	215.9	217.5	223.2	231.5	246.3	271.2	307.9	353.2	416.4	497.3	585.6
125°	231.3	234.2	238.8	247.2	262.0	287.1	321.6	364.1	420.0	490.9	571.5
127.5°	245.8	248.1	253.6	263.3	278.7	303.2	335.4	373.5	421.7	482.6	553.4
130°	253.2	256.1	262.2	273.8	288.6	313.4	344.1	378.9	423.1	477.6	542.1
132.5°	261.4	263.7	271.7	282.7	298.7	321.9	351.8	385.2	424.8	473.5	532.1
135°	271.9	275.0	283.0	296.4	313.0	334.4	362.2	392.4	426.5	466.2	515.9
137.5°	283.4	286.2	294.6	307.2	324.2	344.1	369.3	396.7	426.3	461.0	502.3
140°	291.6	293.7	302.2	315.4	331.8	350.8	374.7	400.3	427.4	457.7	494.9
142.5°	299.6	302.0	310.0	322.7	338.7	356.9	379.9	403.1	428.6	456.0	488.9
145°	311.9	314.0	321.7	332.6	347.3	364.6	385.2	406.5	429.4	453.9	480.7
147.5°	326.0	326.5	333.3	344.4	356.6	372.2	391.5	410.1	430.2	451.1	473.6
150°	334.9	335.4	341.4	350.7	362.3	377.2	394.7	412.0	430.2	449.2	469.0
152.5°	342.1	342.3	348.6	357.4	367.9	381.7	397.2	413.3	429.0	446.0	463.9
155°	353.5	354.3	359.0	366.9	375.7	387.5	400.9	414.4	427.1	441.3	456.3
157.5°	364.7	364.7	369.2	375.3	382.9	392.3	403.6	414.4	425.0	436.4	448.5
160°	371.7	371.7	374.9	380.4	386.7	395.5	404.9	414.4	423.1	432.6	442.9
162.5°	378.0	377.4	379.9	384.8	390.5	397.4	406.2	414.4	421.2	428.8	437.8
165°	385.2	385.2	386.7	390.7	394.7	399.3	406.5	412.8	417.6	423.1	429.4
167.5°	392.3	391.5	392.3	395.3	397.5	401.1	406.3	410.9	413.8	417.4	421.8
170°	395.5	394.7	395.5	397.8	399.3	401.7	405.7	409.6	411.2	413.6	416.8
172.5°	398.5	397.8	397.9	399.7	400.6	402.3	405.0	408.4	408.7	409.8	412.3
175°	401.7	400.9	400.9	401.7	402.5	402.5	404.1	406.5	405.7	405.7	407.3
177.5°	403.1	402.5	401.9	402.5	402.5	402.5	403.1	404.4	403.1	403.1	403.8
180°	402.5	402.5	402.5	402.5	402.5	402.5	402.5	402.5	402.5	402.5	402.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	974.7	976.0	977.4	977.9	977.8	977.6	977.4	977.2
5°	972.1	974.1	976.0	976.8	976.6	976.4	976.1	975.9
7.5°	966.9	969.1	971.3	972.2	972.0	971.8	971.5	971.3
10°	961.6	963.8	966.1	967.0	966.8	966.5	966.3	966.1
12.5°	954.3	956.2	958.2	959.3	959.2	959.1	959.1	959.0
15°	940.9	943.0	945.2	946.2	945.9	945.7	945.5	945.2
17.5°	924.5	926.8	929.0	930.0	929.8	929.6	929.4	929.2
20°	911.7	914.2	916.6	917.8	917.8	917.8	917.8	917.8
22.5°	896.8	899.3	901.7	903.2	903.6	903.9	904.3	904.7
25°	873.9	876.5	879.2	880.7	881.0	881.2	881.5	881.7
27.5°	848.1	850.6	853.1	854.4	854.8	855.1	855.3	855.6
30°	830.1	832.7	835.4	837.0	837.5	838.0	838.5	839.0
32.5°	811.6	814.7	817.8	819.5	820.0	820.5	820.9	821.5
35°	782.3	785.7	789.1	791.2	791.9	792.6	793.4	794.1
37.5°	751.7	755.2	758.6	760.7	761.5	762.3	763.0	763.8
40°	730.2	733.8	737.5	739.8	740.8	741.7	742.8	743.7
42.5°	709.1	713.1	717.2	719.5	720.3	721.1	721.9	722.6
45°	676.4	680.6	684.7	687.4	688.6	689.8	691.0	692.2
47.5°	641.8	646.1	650.5	653.3	654.7	656.2	657.7	659.2
50°	617.6	622.5	627.3	630.5	632.0	633.4	634.9	636.4
52.5°	593.1	597.9	602.9	605.9	607.4	608.9	610.4	611.8
55°	556.3	561.2	566.0	569.2	570.6	572.1	573.5	575.0
57.5°	517.6	523.4	529.2	532.7	534.1	535.5	536.9	538.2
60°	490.9	496.5	502.1	505.9	507.9	509.8	511.7	513.7
62.5°	464.6	470.2	475.9	479.6	481.6	483.5	485.4	487.4
65°	424.0	430.1	436.2	440.2	442.1	444.1	446.0	448.0
67.5°	384.1	390.3	396.5	400.5	402.4	404.3	406.2	408.1
70°	355.9	362.5	369.1	373.3	374.9	376.7	378.3	380.1
72.5°	329.3	335.6	342.1	346.2	348.1	350.0	351.9	353.8
75°	288.5	295.3	302.1	306.7	308.9	311.1	313.2	315.4
77.5°	250.6	257.5	264.4	269.1	271.4	273.8	276.1	278.5
80°	226.0	233.3	240.6	245.2	247.2	249.1	251.0	253.0
82.5°	201.8	209.4	216.8	221.7	223.8	225.9	228.1	230.2
85°	167.9	175.2	182.5	187.4	189.9	192.3	194.7	197.2
87.5°	142.0	149.2	156.5	161.1	163.3	165.6	167.6	169.8
90°	136.8	144.7	152.5	157.0	159.7	162.5	163.6	165.6
92.5°	272.2	240.7	223.6	212.2	204.9	202.5	201.8	203.7
95°	694.4	578.5	479.0	406.7	370.1	347.8	335.8	327.6
97.5°	967.1	927.9	856.9	778.6	723.9	678.4	656.7	642.4
100°	1050.1	1072.5	1040.4	986.0	918.9	872.4	850.3	845.7
102.5°	1040.9	1125.8	1143.4	1123.2	1082.8	1049.8	1026.7	1023.5
105°	970.2	1113.1	1197.5	1233.9	1237.5	1233.1	1223.9	1221.1
107.5°	873.3	1025.0	1141.2	1215.7	1256.5	1276.3	1285.9	1289.8
110°	814.7	957.0	1077.4	1168.1	1226.2	1261.4	1277.6	1286.6





TEST NUMBER: P332657-927

CATALOG NUMBER: S124DIP-S1020D1035U927-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	770.0	896.4	1010.2	1100.8	1166.5	1208.6	1230.5	1244.0
115°	723.3	825.9	923.8	1003.3	1067.5	1116.7	1143.7	1151.7
117.5°	696.6	782.1	860.0	927.8	983.1	1024.9	1052.5	1059.3
120°	682.9	761.4	829.5	889.1	936.0	972.8	995.3	1006.0
122.5°	671.0	746.9	809.3	861.8	901.7	933.1	952.3	962.7
125°	652.0	724.7	783.9	830.4	863.5	887.9	904.4	910.6
127.5°	629.2	698.5	757.3	801.6	835.1	857.1	871.5	877.8
130°	612.1	679.0	737.1	782.0	815.9	837.1	851.2	857.4
132.5°	594.9	657.8	714.5	759.2	792.5	816.3	829.7	835.9
135°	569.7	625.0	677.1	719.3	752.4	776.0	790.1	796.3
137.5°	547.3	594.4	638.6	676.7	707.5	730.6	742.2	749.1
140°	534.4	574.7	613.5	649.0	677.8	696.4	708.7	716.3
142.5°	523.1	558.6	591.8	622.6	648.1	665.3	676.0	681.5
145°	507.5	535.8	561.0	584.4	605.1	619.6	628.4	633.3
147.5°	494.6	516.2	535.4	553.3	568.6	580.9	587.7	589.9
150°	488.0	506.1	522.0	536.2	548.8	559.1	563.9	564.7
152.5°	481.0	496.6	511.2	522.9	533.7	542.0	544.9	545.7
155°	470.6	483.2	495.0	504.5	512.5	518.8	521.2	521.2
157.5°	459.3	469.9	479.9	487.5	493.5	498.2	499.6	499.6
160°	452.3	461.1	469.8	476.1	480.9	485.6	486.4	486.4
162.5°	445.4	452.8	459.6	465.3	468.8	473.6	474.4	473.7
165°	435.8	440.5	446.0	450.0	453.1	456.3	455.5	454.7
167.5°	426.4	430.1	434.5	436.9	438.5	440.5	440.4	439.7
170°	420.7	423.1	426.3	428.6	430.2	431.0	430.2	430.2
172.5°	415.7	417.4	419.3	421.0	422.0	422.8	422.0	420.7
175°	408.8	409.6	411.2	411.2	411.2	412.8	411.2	409.6
177.5°	404.4	405.0	405.0	405.7	405.0	405.7	404.4	403.1
180°	402.5	402.5	402.5	402.5	402.5	402.5	402.5	402.5

(END OF REPORT)