

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: P331949-930

Luminaire Tested: **S123DIP-S560D1195U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331949-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIP-S560D1195U930-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1195 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5818.2 lumens  
Efficiency: N/A  
Efficacy: 117.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

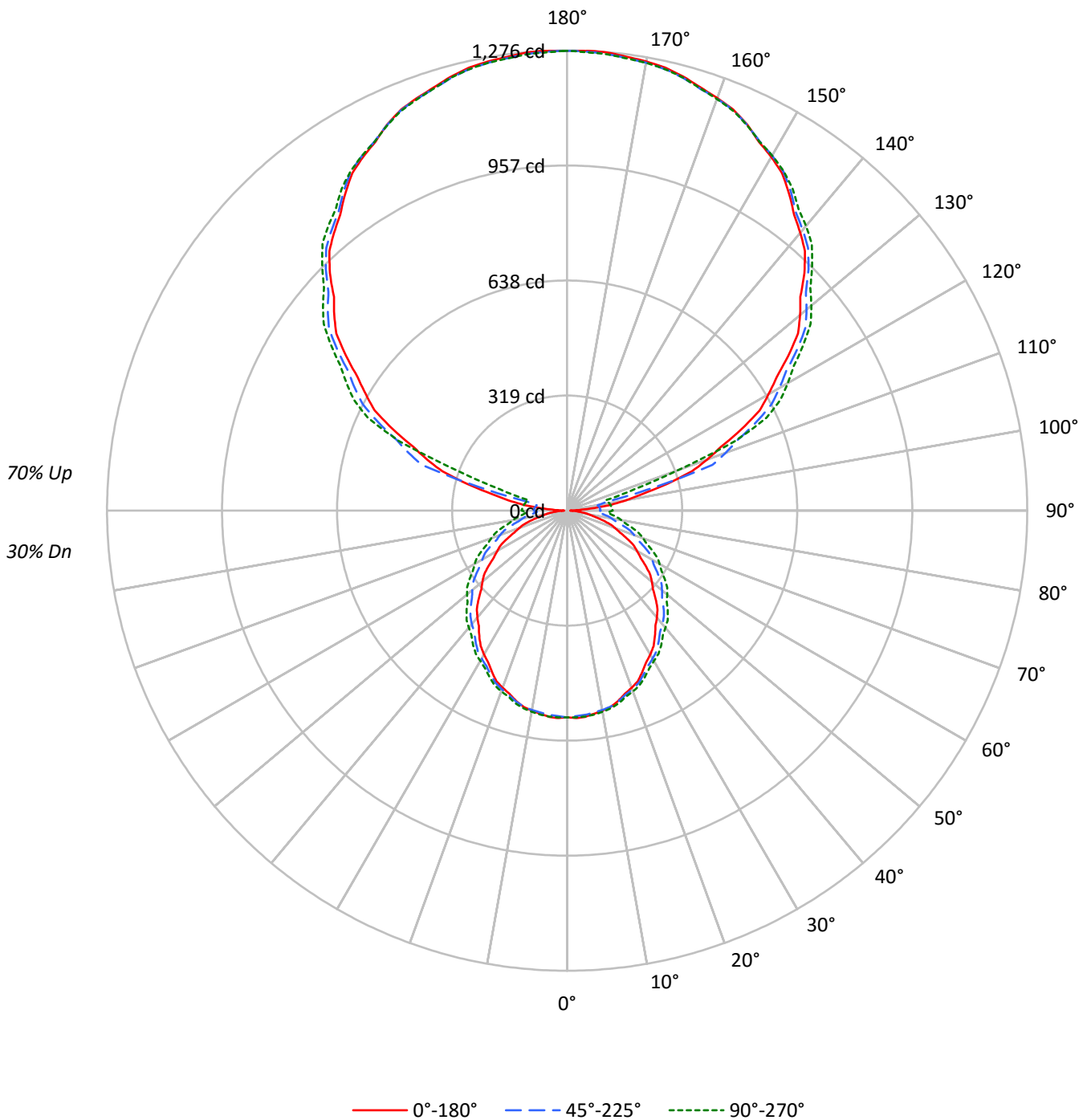
Input Watts (W): 49.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	102	102	102	102	92	92	92	92	72	72	72	55	55	55	38	38	38	30
1	93	88	84	81	83	79	76	73	62	60	58	47	45	44	33	32	31	24
2	84	77	70	65	75	69	64	59	54	51	47	41	38	36	28	27	25	20
3	77	67	60	54	68	60	54	49	48	43	40	36	33	30	25	23	21	16
4	70	59	51	45	62	53	47	41	42	37	33	32	28	26	22	20	18	14
5	64	52	44	39	57	47	40	35	37	32	29	28	25	22	20	18	16	12
6	59	47	39	33	52	42	35	30	34	29	25	25	22	19	18	16	14	10
7	54	42	34	29	48	38	31	26	30	25	22	23	20	17	16	14	12	9
8	50	38	31	25	45	34	28	23	28	23	19	21	17	15	15	13	11	8
9	47	35	27	22	42	31	25	21	25	20	17	19	16	13	14	11	10	7
10	43	32	25	20	39	29	22	18	23	18	15	18	14	12	13	10	9	7

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

	0°	45°	90°
0°	6171	6171	6171
5°	6191	6015	6019
10°	6135	5878	5848
15°	6056	5720	5660
20°	5943	5540	5454
25°	5804	5333	5238
30°	5660	5147	5019
35°	5500	4950	4844
40°	5347	4771	4656
45°	5177	4599	4506
50°	5010	4430	4341
55°	4826	4256	4193
60°	4646	4080	4040
65°	4462	3891	3859
70°	4185	3680	3673
75°	3832	3437	3484
80°	3426	3199	3268
85°	3052	3034	3143



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	54.4	0.9
10°-20°	154.9	2.7
20°-30°	231.7	4.0
30°-40°	276.7	4.8
40°-50°	289.5	5.0
50°-60°	271.7	4.7
60°-70°	226.9	3.9
70°-80°	162.4	2.8
80°-90°	100.4	1.7
90°-100°	107.1	1.8
100°-110°	265.6	4.6
110°-120°	560.5	9.6
120°-130°	692.8	11.9
130°-140°	729.6	12.5
140°-150°	676.8	11.6
150°-160°	544.6	9.4
160°-170°	351.5	6.0
170°-180°	121.1	2.1
0°-30°	441.0	7.6
0°-40°	717.7	12.3
0°-60°	1279.0	22.0
0°-90°	1768.6	30.4
90°-120°	933.1	16.0
90°-150°	3032.3	52.1
90°-180°	4050.0	69.6
0°-180°	5818.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	573	573	573	573	573	
5°	574	573	569	574	573	54
15°	546	548	548	554	553	154
25°	493	499	502	509	510	227
35°	425	435	443	452	455	266
45°	347	362	378	389	395	268
55°	265	286	308	324	330	237
65°	183	208	235	253	260	181
75°	99	129	160	180	188	106
85°	31	62	95	115	122	32
90°	9	49	93	117	126	8
95°	65	53	91	116	123	77
105°	287	308	254	113	112	304
115°	533	547	577	600	610	526
125°	748	757	778	792	799	668
135°	930	936	946	960	961	716
145°	1073	1079	1081	1087	1090	671
155°	1181	1179	1180	1184	1179	544
165°	1246	1243	1242	1249	1243	352
175°	1275	1270	1271	1277	1270	121
180°	1275	1275	1275	1275	1275	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3
2.5°	575.8	575.5	575.2	574.8	574.5	573.9	573.0	572.1	571.2	570.3	571.2
5°	574.0	573.6	573.4	573.2	572.8	572.3	571.4	570.6	569.8	568.9	570.1
7.5°	568.3	568.3	568.4	568.5	568.6	568.2	567.4	566.6	565.7	564.9	566.3
10°	563.4	563.6	563.9	564.2	564.4	564.3	563.5	562.9	562.1	561.5	562.9
12.5°	557.3	557.7	558.2	558.5	558.9	558.9	558.4	557.9	557.4	556.9	558.2
15°	546.5	546.9	547.3	547.7	548.1	548.3	548.1	548.0	547.9	547.7	549.1
17.5°	532.7	533.5	534.4	535.2	536.1	536.5	536.4	536.3	536.3	536.2	537.4
20°	522.8	523.6	524.4	525.2	526.0	526.6	526.9	527.2	527.4	527.7	529.0
22.5°	512.3	513.1	513.9	514.8	515.6	516.2	516.6	517.0	517.4	517.7	519.3
25°	493.4	494.8	496.2	497.6	499.0	499.9	500.3	500.7	501.1	501.5	503.3
27.5°	474.4	476.0	477.6	479.2	480.7	481.9	482.8	483.7	484.6	485.5	487.1
30°	460.9	462.7	464.5	466.4	468.1	469.6	470.7	471.8	472.9	474.0	475.7
32.5°	445.9	447.9	450.0	452.0	454.0	455.8	457.2	458.6	460.1	461.5	463.3
35°	424.7	426.9	429.1	431.4	433.6	435.6	437.4	439.2	441.0	442.8	444.9
37.5°	402.2	404.7	407.2	409.7	412.2	414.6	416.8	419.0	421.2	423.5	425.8
40°	387.2	389.7	392.2	394.7	397.2	399.8	402.6	405.4	408.1	410.9	413.3
42.5°	370.7	373.8	376.8	379.8	382.9	385.9	388.8	391.7	394.6	397.5	400.1
45°	347.2	350.6	353.9	357.3	360.5	363.9	367.5	370.9	374.4	377.8	380.5
47.5°	322.6	326.4	330.2	333.9	337.7	341.6	345.6	349.5	353.5	357.5	360.4
50°	306.6	310.5	314.4	318.3	322.2	326.3	330.6	334.9	339.2	343.5	346.7
52.5°	289.7	293.8	297.9	302.0	306.1	310.5	315.3	320.0	324.7	329.5	332.8
55°	264.8	269.4	273.9	278.5	283.2	287.9	292.9	297.9	302.9	307.9	311.6
57.5°	240.6	245.3	250.1	254.9	259.7	264.8	270.3	275.7	281.2	286.7	290.4
60°	223.6	228.6	233.6	238.6	243.5	248.9	254.6	260.3	266.0	271.7	275.6
62.5°	207.6	212.7	217.8	222.9	228.0	233.6	239.6	245.6	251.7	257.7	261.5
65°	183.0	188.4	193.8	199.3	204.6	210.4	216.5	222.6	228.7	234.8	239.0
67.5°	158.0	163.8	169.5	175.2	181.0	186.9	193.2	199.4	205.6	211.8	216.4
70°	140.6	146.5	152.5	158.4	164.4	170.7	177.3	184.0	190.7	197.4	201.8
72.5°	124.5	130.5	136.5	142.4	148.4	154.8	161.7	168.6	175.5	182.4	186.9
75°	99.3	105.8	112.3	118.9	125.4	132.2	139.1	146.0	153.0	159.9	164.4
77.5°	77.3	83.9	90.5	97.0	103.6	110.4	117.4	124.4	131.4	138.4	143.2
80°	61.8	68.6	75.4	82.3	89.0	96.0	103.2	110.5	117.7	124.9	129.6
82.5°	48.3	55.3	62.1	69.1	76.0	83.1	90.4	97.8	105.1	112.4	117.2
85°	30.6	37.5	44.5	51.4	58.4	65.5	72.9	80.2	87.6	94.9	99.6
87.5°	16.8	24.1	31.5	38.8	46.1	53.6	61.2	68.9	76.5	84.1	89.0
90°	9.0	17.9	26.9	35.8	44.7	54.1	63.8	73.7	83.5	93.3	98.9
92.5°	25.3	30.8	36.4	41.9	47.5	54.7	63.8	72.7	81.8	90.8	96.8
95°	64.7	61.5	58.2	55.0	51.8	54.7	63.8	73.0	82.1	91.2	96.9
97.5°	122.2	123.3	124.3	125.3	126.3	122.5	113.8	105.2	96.5	87.8	93.7
100°	165.7	174.4	183.0	191.7	200.3	191.4	164.9	138.5	112.0	85.6	91.3
102.5°	215.2	222.3	229.3	236.3	243.4	232.0	202.4	172.8	143.2	113.7	112.3
105°	287.2	292.9	298.6	304.2	309.8	306.2	293.2	280.2	267.3	254.3	220.9
107.5°	362.6	367.4	372.0	376.7	381.4	388.1	396.7	405.4	414.0	422.7	399.1
110°	412.9	417.1	421.3	425.5	429.7	435.7	443.6	451.4	459.3	467.2	463.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	461.5	465.0	468.6	472.1	475.7	481.4	488.9	496.6	504.3	511.9	515.5
115°	532.6	535.6	538.5	541.4	544.3	549.3	556.1	563.0	569.9	576.8	582.2
117.5°	602.0	604.6	607.2	609.8	612.4	616.4	622.2	627.8	633.5	639.1	644.1
120°	644.7	647.3	649.9	652.5	655.1	659.0	664.1	669.4	674.6	679.8	684.7
122.5°	688.7	690.6	692.5	694.4	696.3	699.9	705.1	710.2	715.3	720.5	724.8
125°	748.3	750.0	751.6	753.3	755.0	758.3	763.2	768.0	772.9	777.8	781.1
127.5°	806.7	808.2	809.8	811.3	812.9	815.8	820.1	824.4	828.8	833.2	836.6
130°	843.0	844.6	846.1	847.7	849.2	851.7	855.4	859.0	862.6	866.3	869.7
132.5°	877.3	879.1	880.7	882.3	884.0	886.2	889.2	892.0	895.0	897.8	901.2
135°	930.5	931.6	932.7	933.8	935.0	936.7	939.1	941.4	943.8	946.2	949.3
137.5°	975.8	977.3	978.8	980.3	981.8	983.2	984.5	985.9	987.2	988.5	991.6
140°	1005.6	1006.9	1008.1	1009.4	1010.6	1011.9	1012.8	1013.9	1015.0	1016.0	1019.0
142.5°	1033.6	1034.8	1036.0	1037.1	1038.3	1039.2	1039.9	1040.6	1041.4	1042.0	1044.6
145°	1072.9	1074.2	1075.5	1076.8	1078.2	1079.1	1079.5	1079.9	1080.4	1080.8	1082.3
147.5°	1109.2	1110.2	1111.2	1112.1	1113.0	1113.8	1114.2	1114.6	1115.0	1115.4	1116.2
150°	1132.0	1132.5	1133.2	1133.8	1134.5	1135.0	1135.4	1135.8	1136.3	1136.7	1137.1
152.5°	1152.4	1152.7	1153.0	1153.2	1153.6	1153.8	1154.1	1154.4	1154.6	1154.9	1155.6
155°	1181.2	1180.8	1180.3	1179.9	1179.5	1179.4	1179.6	1179.8	1180.1	1180.2	1181.3
157.5°	1203.5	1203.5	1203.5	1203.4	1203.4	1203.2	1203.1	1202.8	1202.6	1202.4	1203.7
160°	1217.2	1217.0	1216.8	1216.6	1216.3	1216.1	1215.9	1215.7	1215.5	1215.3	1216.6
162.5°	1230.0	1229.6	1229.0	1228.4	1227.8	1227.5	1227.3	1227.1	1226.9	1226.6	1228.1
165°	1245.6	1245.0	1244.3	1243.7	1243.1	1242.7	1242.4	1242.2	1242.0	1241.8	1243.5
167.5°	1257.8	1256.9	1256.1	1255.2	1254.3	1253.9	1253.9	1253.9	1253.9	1253.9	1255.6
170°	1264.5	1263.7	1262.9	1262.0	1261.2	1260.8	1260.8	1260.8	1260.8	1260.8	1262.4
172.5°	1269.1	1268.1	1267.1	1266.1	1265.0	1264.6	1264.8	1264.9	1265.1	1265.3	1267.0
175°	1275.0	1273.9	1272.8	1271.8	1270.7	1270.3	1270.6	1270.7	1271.0	1271.1	1272.7
177.5°	1276.5	1275.6	1274.8	1274.0	1273.1	1272.8	1272.9	1273.1	1273.3	1273.4	1274.8
180°	1275.0	1275.0	1275.0	1275.0	1275.0	1275.0	1275.0	1275.0	1275.0	1275.0	1275.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3
2.5°	572.1	573.0	573.9	574.3	574.1	574.1	574.0	573.8
5°	571.2	572.3	573.4	573.9	573.7	573.6	573.5	573.3
7.5°	567.7	569.1	570.5	571.1	571.0	570.8	570.6	570.5
10°	564.3	565.7	567.0	567.5	567.3	567.0	566.7	566.5
12.5°	559.5	560.8	562.1	562.6	562.3	562.0	561.7	561.5
15°	550.5	551.9	553.3	553.9	553.8	553.6	553.5	553.3
17.5°	538.7	540.0	541.2	541.8	541.5	541.4	541.2	541.0
20°	530.3	531.5	532.7	533.5	533.5	533.7	533.9	533.9
22.5°	520.9	522.5	524.1	524.8	524.7	524.6	524.6	524.5
25°	505.1	507.0	508.7	509.6	509.6	509.6	509.6	509.6
27.5°	488.6	490.2	491.7	492.6	492.7	492.8	492.9	493.0
30°	477.4	479.0	480.7	481.5	481.5	481.5	481.5	481.5
32.5°	465.0	466.8	468.6	469.7	470.0	470.3	470.7	471.0
35°	446.9	449.1	451.1	452.4	453.0	453.6	454.1	454.7
37.5°	428.1	430.5	432.8	434.3	434.7	435.1	435.6	436.0
40°	415.6	418.0	420.4	421.8	422.4	423.0	423.5	424.0
42.5°	402.6	405.2	407.8	409.4	410.3	411.0	411.8	412.5
45°	383.1	385.7	388.4	390.3	391.3	392.5	393.6	394.7
47.5°	363.5	366.4	369.3	371.3	372.1	373.0	373.9	374.7
50°	349.8	353.1	356.3	358.3	359.3	360.3	361.3	362.2
52.5°	336.1	339.4	342.8	345.0	346.2	347.3	348.5	349.8
55°	315.4	319.1	322.9	325.3	326.4	327.5	328.6	329.8
57.5°	294.2	298.0	301.7	304.3	305.6	306.9	308.2	309.5
60°	279.5	283.3	287.2	289.9	291.5	292.9	294.5	296.0
62.5°	265.5	269.4	273.2	275.9	277.3	278.7	280.1	281.5
65°	243.1	247.3	251.5	254.3	255.7	257.1	258.4	259.8
67.5°	220.9	225.5	230.1	232.9	234.1	235.2	236.4	237.6
70°	206.3	210.7	215.2	218.0	219.4	220.8	222.2	223.6
72.5°	191.4	196.0	200.6	203.6	205.0	206.4	207.7	209.1
75°	169.0	173.7	178.2	181.3	183.0	184.7	186.3	188.0
77.5°	148.1	152.9	157.7	160.8	162.1	163.3	164.6	165.9
80°	134.4	139.1	143.8	146.8	148.2	149.6	151.0	152.4
82.5°	121.9	126.5	131.3	134.4	135.7	137.1	138.5	139.9
85°	104.4	109.1	113.8	116.8	118.2	119.6	121.0	122.4
87.5°	93.9	98.8	103.6	106.8	108.4	109.8	111.3	112.8
90°	104.4	110.0	115.5	119.2	121.1	122.9	124.7	126.5
92.5°	102.7	108.7	114.6	118.4	119.9	121.5	122.9	124.5
95°	102.7	108.5	114.3	117.9	119.3	120.7	122.1	123.4
97.5°	99.5	105.3	111.1	114.8	116.4	118.1	119.6	121.2
100°	97.0	102.7	108.4	112.1	113.7	115.3	116.9	118.5
102.5°	111.0	109.7	108.4	108.7	110.5	112.2	114.0	115.8
105°	187.5	154.2	120.8	104.9	106.6	108.3	110.0	111.6
107.5°	375.4	351.9	328.2	303.0	276.2	249.3	222.5	195.6
110°	460.5	457.1	453.8	437.7	408.6	379.7	350.7	321.7





TEST NUMBER: P331949-930

CATALOG NUMBER: S123DIP-S560D1195U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	519.2	522.8	526.4	525.6	520.5	515.4	510.2	505.1
115°	587.7	593.1	598.5	602.3	604.2	606.2	608.1	610.1
117.5°	649.1	654.1	659.1	662.2	663.4	664.7	665.9	667.2
120°	689.6	694.5	699.3	702.2	703.2	704.2	705.2	706.1
122.5°	729.0	733.3	737.5	740.2	741.4	742.5	743.6	744.8
125°	784.4	787.7	791.1	793.4	794.8	796.2	797.6	799.1
127.5°	840.0	843.4	846.8	848.8	849.3	849.8	850.4	850.8
130°	873.2	876.7	880.1	882.1	882.5	882.9	883.4	883.8
132.5°	904.6	907.9	911.3	913.1	913.5	913.9	914.3	914.6
135°	952.4	955.6	958.7	960.3	960.3	960.4	960.5	960.6
137.5°	994.9	998.1	1001.3	1003.1	1003.3	1003.6	1003.9	1004.1
140°	1021.9	1024.8	1027.7	1029.3	1029.6	1029.9	1030.1	1030.4
142.5°	1047.2	1049.7	1052.2	1053.5	1053.6	1053.7	1053.9	1053.9
145°	1083.9	1085.4	1086.9	1087.9	1088.5	1089.1	1089.6	1090.1
147.5°	1117.0	1117.7	1118.4	1118.6	1118.1	1117.7	1117.2	1116.7
150°	1137.5	1137.9	1138.3	1138.4	1138.0	1137.7	1137.3	1136.9
152.5°	1156.3	1157.2	1157.9	1157.8	1156.9	1156.0	1155.0	1154.1
155°	1182.3	1183.4	1184.5	1184.3	1183.1	1181.9	1180.6	1179.3
157.5°	1204.9	1206.2	1207.5	1207.3	1205.7	1204.0	1202.3	1200.7
160°	1217.8	1219.0	1220.3	1220.3	1218.8	1217.3	1215.8	1214.3
162.5°	1229.6	1230.9	1232.4	1232.4	1231.1	1229.8	1228.5	1227.2
165°	1245.2	1246.8	1248.5	1248.6	1247.2	1245.7	1244.2	1242.8
167.5°	1257.3	1259.0	1260.7	1260.7	1259.0	1257.3	1255.6	1253.9
170°	1264.1	1265.8	1267.5	1267.5	1265.8	1264.1	1262.4	1260.8
172.5°	1268.7	1270.3	1272.0	1271.9	1270.1	1268.3	1266.4	1264.5
175°	1274.1	1275.6	1277.1	1276.9	1275.3	1273.6	1271.9	1270.2
177.5°	1276.1	1277.5	1278.8	1278.6	1277.0	1275.3	1273.6	1271.9
180°	1275.0	1275.0	1275.0	1275.0	1275.0	1275.0	1275.0	1275.0

(END OF REPORT)