

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: P332639-930

Luminaire Tested: **S124DIP-S1020D590U930-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332639-930
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-S1020D590U930-4F0-1E-UDD-D4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

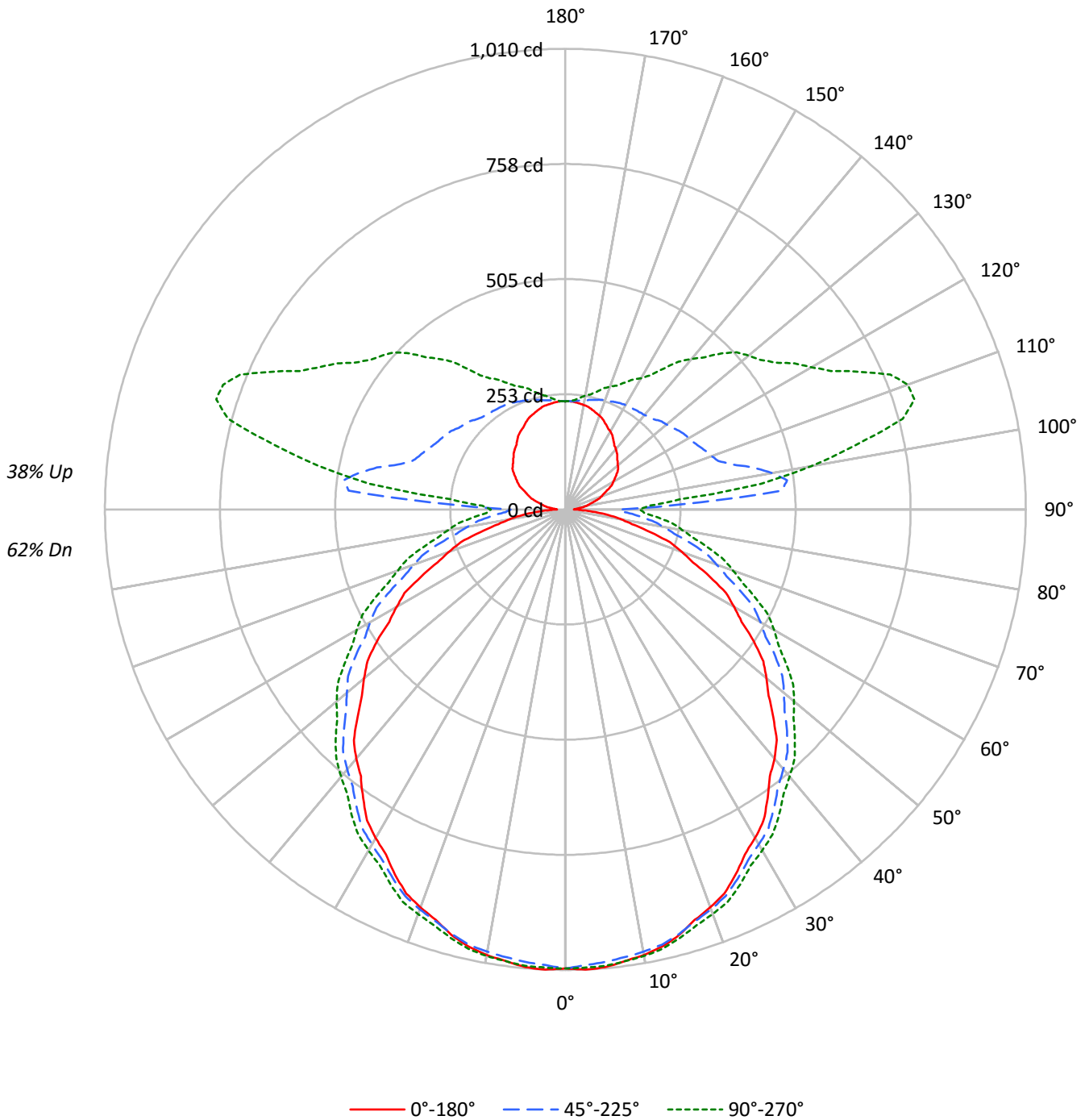
Lumens per Lamp: N/A
Luminaire Lumens: 5154.4 lumens
Efficiency: N/A
Efficacy: 105.6 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: Semi-Direct

Input Watts (W): 48.8
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



TEST NUMBER: P332639-930
CATALOG NUMBER: S124DIP-S1020D590U930-4F0-1E-UDD-D4

Luminous Intensity Polar Plot





TEST NUMBER: P332639-930

CATALOG NUMBER: S124DIP-S1020D590U930-4F0-1E-UDD-D4

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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	62				62
1	99	94	90	86	92	88	84	81	77	74	71	67	64	62	57	55	54	49				49
2	90	82	75	69	84	76	70	65	67	62	58	58	54	51	49	47	44	40				40
3	82	71	63	57	76	67	60	54	58	53	48	51	46	43	43	40	37	33				33
4	74	63	54	48	69	59	51	45	52	46	41	45	40	36	39	35	32	28				28
5	68	56	47	41	63	52	45	39	46	40	35	40	35	31	35	31	27	24				24
6	63	50	41	35	58	47	39	34	41	35	30	36	31	27	31	27	24	21				21
7	58	45	37	31	54	42	35	29	38	31	27	33	28	24	28	24	21	19				19
8	54	41	33	27	50	39	31	26	34	28	24	30	25	21	26	22	19	17				17
9	50	37	30	24	47	35	28	23	31	25	21	28	23	19	24	20	17	15				15
10	47	34	27	22	44	32	25	21	29	23	19	26	21	17	22	18	15	13				13

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



TEST NUMBER: P332639-930

CATALOG NUMBER: S124DIP-S1020D590U930-4F0-1E-UDD-D4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.3	1.8
10°-20°	273.1	5.3
20°-30°	413.0	8.0
30°-40°	499.7	9.7
40°-50°	528.2	10.2
50°-60°	497.1	9.6
60°-70°	412.5	8.0
70°-80°	289.7	5.6
80°-90°	165.1	3.2
90°-100°	268.2	5.2
100°-110°	427.9	8.3
110°-120°	367.1	7.1
120°-130°	295.4	5.7
130°-140°	235.3	4.6
140°-150°	173.2	3.4
150°-160°	120.1	2.3
160°-170°	70.6	1.4
170°-180°	23.0	0.4
0°-30°	781.4	15.2
0°-40°	1281.1	24.9
0°-60°	2306.5	44.7
0°-90°	3173.8	61.6
90°-120°	1063.1	20.6
90°-150°	1767.0	34.3
90°-180°	1981.0	38.4
0°-180°	5154.4	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°	18	67	120	152	163	13
95°	30	101	477	315	252	29
105°	65	113	380	758	766	69
115°	103	139	325	600	714	102
125°	138	164	302	497	561	123
135°	161	192	278	422	483	125
145°	184	209	267	340	377	116
155°	208	224	260	294	306	96
165°	226	234	249	263	267	64
175°	236	237	239	242	241	22
180°	237	237	237	237	237	



TEST NUMBER: P332639-930

CATALOG NUMBER: S124DIP-S1020D590U930-4F0-1E-UDD-D4

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°	33.4	43.9	54.4	64.7	75.0	85.6	97.1	108.1	119.3	130.4	137.5
90°	18.5	29.4	40.8	51.4	61.8	72.2	85.8	96.5	108.3	119.9	126.8
92.5°	22.4	33.8	47.3	62.0	77.8	97.3	131.8	178.6	224.5	253.7	236.1
95°	30.0	39.6	52.6	66.9	86.3	115.1	165.8	252.4	373.8	477.1	494.6
97.5°	40.8	47.9	59.0	71.7	88.5	113.5	154.8	228.0	348.6	490.3	587.3
100°	47.8	54.3	64.0	76.1	91.5	114.5	151.7	214.0	318.7	459.6	585.4
102.5°	55.2	61.6	70.2	81.1	95.3	117.1	151.5	207.3	297.6	423.5	552.8
105°	64.6	70.9	78.3	88.9	102.2	122.9	154.5	202.4	276.7	379.5	495.0
107.5°	77.2	82.2	88.6	98.7	110.8	130.5	159.8	203.7	268.1	352.1	447.5
110°	84.8	89.3	95.1	104.2	116.1	134.8	164.0	205.3	265.2	341.4	423.0



TEST NUMBER: P332639-930

CATALOG NUMBER: S124DIP-S1020D590U930-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	92.1	96.1	101.9	110.2	121.7	140.1	168.1	207.2	263.3	333.6	406.8
115°	102.6	106.2	111.7	118.6	129.7	147.4	174.1	209.9	261.2	325.1	389.1
117.5°	114.6	117.2	121.5	128.0	137.6	155.1	180.2	213.3	259.6	317.8	377.2
120°	121.9	123.6	127.6	133.5	142.1	159.1	184.1	215.6	258.6	313.3	370.0
122.5°	129.4	130.4	133.9	138.8	147.6	163.7	188.3	217.8	257.9	308.4	362.5
125°	137.9	139.6	142.1	147.0	155.6	171.6	194.6	222.3	257.9	302.2	351.6
127.5°	146.4	147.7	150.7	156.4	165.3	180.8	201.7	226.2	256.5	294.5	338.0
130°	150.3	152.0	155.4	162.2	170.7	186.1	205.9	228.0	255.8	289.6	329.5
132.5°	155.2	156.5	161.0	167.4	176.7	190.9	209.9	230.9	255.6	285.6	321.9
135°	160.9	162.7	167.4	175.3	185.1	198.0	215.1	233.6	254.5	278.5	309.5
137.5°	167.6	169.2	174.0	181.3	191.2	203.0	218.2	234.6	252.5	273.2	299.1
140°	172.4	173.7	178.5	186.1	195.7	206.8	221.0	236.2	252.3	270.1	293.4
142.5°	176.8	178.1	182.8	190.3	199.7	210.3	223.8	237.4	252.3	268.3	288.9
145°	183.9	185.1	189.5	195.7	204.3	214.4	226.5	239.0	252.6	266.9	283.3
147.5°	192.2	192.4	196.2	202.7	209.8	218.9	230.2	241.2	253.0	265.3	278.6
150°	197.4	197.6	201.1	206.4	213.1	221.8	232.1	242.3	253.0	264.2	275.8
152.5°	201.3	201.4	205.0	210.2	216.4	224.5	233.6	243.0	252.3	262.3	272.8
155°	207.9	208.4	211.2	215.8	220.9	227.9	235.8	243.7	251.1	259.5	268.3
157.5°	214.5	214.5	217.1	220.7	225.2	230.6	237.4	243.7	250.0	256.7	263.8
160°	218.6	218.6	220.5	223.7	227.4	232.5	238.1	243.7	248.8	254.4	260.5
162.5°	222.3	221.9	223.4	226.3	229.7	233.7	238.9	243.7	247.7	252.2	257.5
165°	226.5	226.5	227.4	229.8	232.1	234.9	239.0	242.8	245.6	248.8	252.6
167.5°	230.6	230.2	230.6	232.4	233.7	235.9	239.0	241.7	243.4	245.5	248.1
170°	232.5	232.1	232.5	233.9	234.9	236.3	238.6	240.9	241.8	243.2	245.1
172.5°	234.4	233.9	234.0	235.1	235.6	236.6	238.2	240.2	240.4	241.0	242.5
175°	236.3	235.8	235.8	236.3	236.8	236.8	237.7	239.0	238.6	238.6	239.5
177.5°	237.1	236.8	236.4	236.8	236.8	236.8	237.1	237.8	237.1	237.1	237.5
180°	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8



TEST NUMBER: P332639-930

CATALOG NUMBER: S124DIP-S1020D590U930-4F0-1E-UDD-D4

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°	145.0	152.3	159.6	164.4	166.6	169.0	171.0	173.3
90°	134.5	142.2	149.9	154.6	157.0	159.6	161.1	163.1
92.5°	211.7	196.1	189.1	184.3	180.9	180.3	180.8	182.8
95°	456.2	390.9	335.3	294.7	274.2	262.0	255.9	252.1
97.5°	613.3	593.1	554.2	510.1	478.8	453.0	441.2	433.7
100°	660.1	676.1	660.1	630.0	591.3	564.7	552.4	550.5
102.5°	652.6	705.3	718.4	708.4	685.5	666.9	654.1	653.1
105°	607.8	694.6	746.8	770.1	773.0	771.3	766.8	766.0
107.5°	548.0	639.8	710.8	756.3	781.1	793.4	799.9	802.9
110°	511.6	597.8	671.0	726.0	761.1	782.6	793.0	799.2



TEST NUMBER: P332639-930

CATALOG NUMBER: S124DIP-S1020D590U930-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	483.2	559.9	629.2	684.1	723.7	749.3	763.0	771.8
115°	452.8	515.5	575.4	623.7	662.3	691.9	708.5	714.0
117.5°	433.9	486.5	534.5	575.9	609.3	634.7	651.8	656.7
120°	423.8	472.1	514.3	550.8	579.4	601.8	615.9	623.0
122.5°	414.8	461.6	500.4	532.8	557.0	576.3	588.3	595.3
125°	401.0	445.8	482.7	511.4	531.5	546.5	556.8	561.1
127.5°	384.5	427.2	463.7	491.1	511.5	525.2	534.3	538.8
130°	372.5	413.8	450.0	477.6	498.1	511.3	520.2	524.5
132.5°	360.7	399.6	434.7	462.3	482.5	497.1	505.6	510.0
135°	342.8	377.0	409.4	435.5	455.5	470.0	479.0	483.3
137.5°	327.1	356.4	383.9	407.4	426.1	440.2	447.5	452.2
140°	318.0	343.2	367.4	389.1	406.7	418.2	425.9	430.9
142.5°	310.2	332.3	353.2	372.0	387.5	398.0	404.9	408.5
145°	299.7	317.1	332.5	346.7	359.4	368.4	374.0	377.3
147.5°	291.1	303.9	315.2	326.0	335.3	342.9	347.2	348.9
150°	287.0	297.7	307.0	315.4	322.8	328.8	331.6	332.1
152.5°	282.8	292.0	300.6	307.5	313.8	318.8	320.4	320.9
155°	276.7	284.1	291.1	296.7	301.4	305.1	306.5	306.5
157.5°	270.1	276.4	282.2	286.7	290.2	293.0	293.8	293.8
160°	266.0	271.2	276.2	280.0	282.7	285.6	286.0	286.0
162.5°	262.0	266.3	270.3	273.7	275.7	278.5	279.0	278.6
165°	256.2	259.0	262.3	264.6	266.5	268.3	267.9	267.4
167.5°	250.8	252.9	255.5	256.9	257.9	259.0	258.9	258.6
170°	247.4	248.8	250.7	252.1	253.0	253.5	253.0	253.0
172.5°	244.4	245.5	246.6	247.6	248.2	248.7	248.2	247.4
175°	240.4	240.9	241.8	241.8	241.8	242.8	241.8	240.9
177.5°	237.8	238.2	238.2	238.6	238.2	238.6	237.8	237.1
180°	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8

(END OF REPORT)