

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: P332153-930

Luminaire Tested: **S123DIW-S775D460U930-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332153-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S775D460U930-4F0-1E-UDD-D1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 775 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

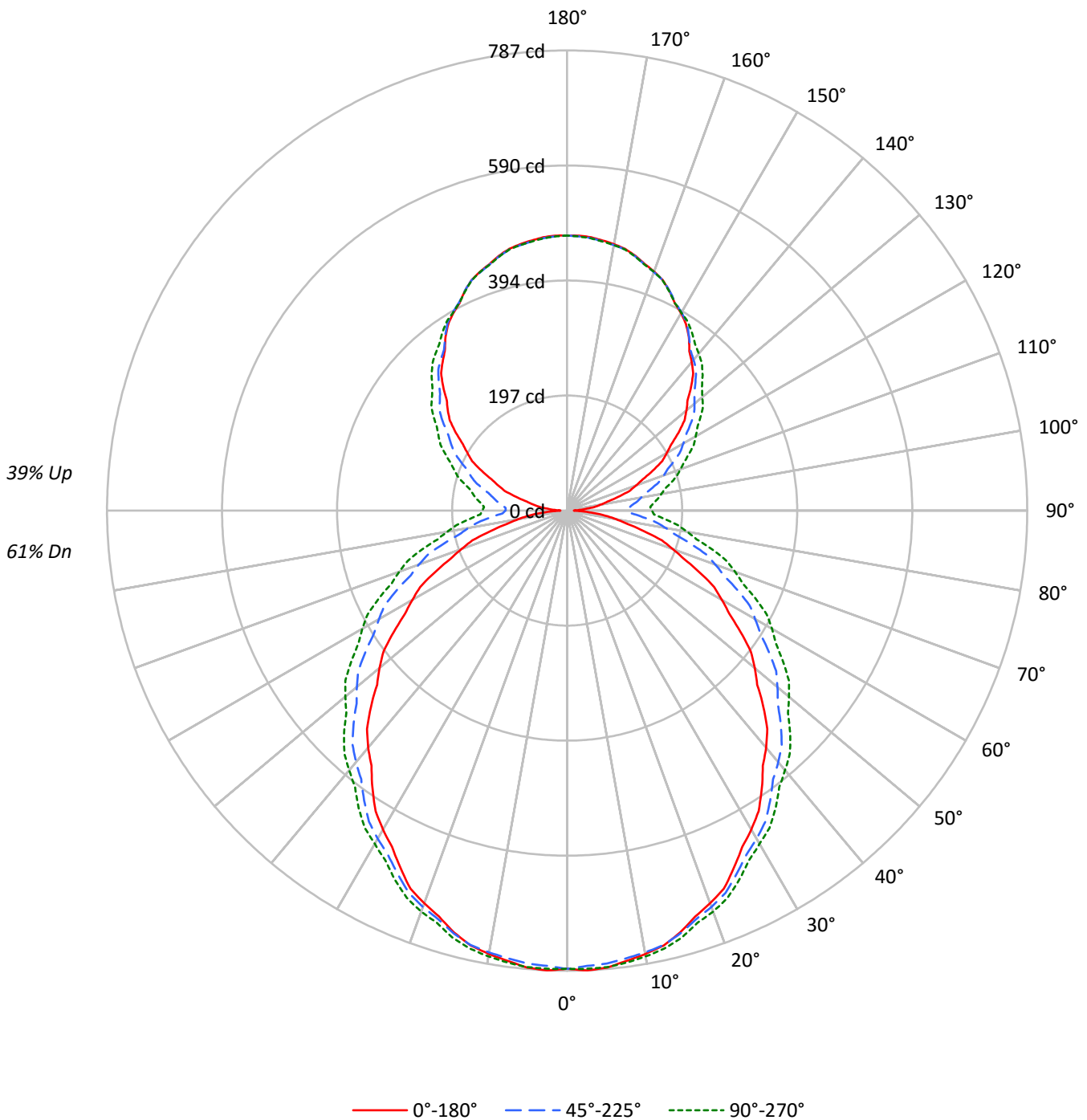
Lumens per Lamp: N/A  
Luminaire Lumens: 3938.0 lumens  
Efficiency: N/A  
Efficacy: 104.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct  
  
Input Watts (W): 37.7  
Input Voltage (V): 120  
Input 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: P332153-930

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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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	61
1	99	94	90	86	92	88	84	81	77	74	71	66	64	62	57	55	54	49
2	90	81	75	69	83	76	70	65	66	62	58	58	54	51	49	47	44	40
3	82	71	63	57	76	67	60	54	58	53	48	50	46	42	43	40	37	33
4	74	63	54	48	69	59	51	45	52	45	41	45	40	36	38	35	32	28
5	68	56	47	41	63	52	45	39	46	40	35	40	35	31	34	31	27	24
6	63	50	41	35	58	47	39	34	41	35	30	36	31	27	31	27	24	21
7	58	45	37	31	54	43	35	29	38	31	27	33	28	24	28	24	21	19
8	54	41	33	27	50	39	31	26	34	28	24	30	25	21	26	22	19	17
9	50	37	30	24	47	35	28	23	31	25	21	28	23	19	24	20	17	15
10	47	34	27	22	44	32	26	21	29	23	19	26	21	17	22	18	15	14

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

	0°	45°	90°
0°	8436	8436	8436
5°	8462	8223	8228
10°	8386	8033	7993
15°	8278	7819	7738
20°	8123	7573	7456
25°	7933	7290	7160
30°	7737	7036	6861
35°	7518	6767	6621
40°	7310	6522	6365
45°	7079	6288	6161
50°	6848	6055	5934
55°	6597	5818	5731
60°	6352	5577	5522
65°	6098	5319	5274
70°	5718	5030	5022
75°	5236	4699	4763
80°	4684	4372	4467
85°	4170	4150	4296



TEST NUMBER: P332153-930

CATALOG NUMBER: S123DIW-S775D460U930-4F0-1E-UDD-D1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	74.3	1.9
10°-20°	211.8	5.4
20°-30°	316.7	8.0
30°-40°	378.3	9.6
40°-50°	395.8	10.0
50°-60°	371.4	9.4
60°-70°	310.2	7.9
70°-80°	221.9	5.6
80°-90°	133.7	3.4
90°-100°	113.7	2.9
100°-110°	152.7	3.9
110°-120°	196.7	5.0
120°-130°	228.5	5.8
130°-140°	241.1	6.1
140°-150°	228.9	5.8
150°-160°	190.9	4.8
160°-170°	127.0	3.2
170°-180°	44.5	1.1
0°-30°	602.8	15.3
0°-40°	981.1	24.9
0°-60°	1748.2	44.4
0°-90°	2414.1	61.3
90°-120°	463.1	11.8
90°-150°	1161.6	29.5
90°-180°	1524.0	38.7
0°-180°	3938.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	784	784	784	784	784	
5°	785	783	778	784	784	74
15°	747	749	749	757	756	210
25°	674	683	686	696	697	311
35°	580	594	605	618	622	363
45°	475	495	516	532	540	366
55°	362	390	421	443	451	324
65°	250	284	321	346	355	247
75°	136	176	219	246	257	145
85°	42	85	130	158	167	44
90°	12	57	105	135	145	9
95°	31	68	112	139	148	32
105°	90	112	151	174	184	96
115°	161	174	203	223	230	160
125°	232	235	258	273	278	207
135°	300	302	310	324	328	231
145°	363	363	364	370	372	226
155°	414	414	415	416	413	191
165°	451	450	450	452	450	127
175°	469	468	468	470	467	45
180°	470	470	470	470	470	



TEST NUMBER: P332153-930

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	783.7	783.7	783.7	783.7	783.7	783.7	783.7	783.7	783.7	783.7	783.7
2.5°	787.1	786.6	786.2	785.7	785.3	784.4	783.3	782.0	780.8	779.6	780.8
5°	784.6	784.2	783.7	783.4	783.0	782.3	781.1	780.0	778.9	777.7	779.3
7.5°	776.8	776.9	777.0	777.1	777.1	776.7	775.5	774.5	773.3	772.3	774.1
10°	770.1	770.4	770.8	771.2	771.5	771.3	770.3	769.4	768.4	767.4	769.4
12.5°	761.8	762.4	762.9	763.4	763.9	763.9	763.3	762.6	762.0	761.3	763.0
15°	747.0	747.5	748.1	748.7	749.3	749.4	749.3	749.1	748.9	748.7	750.6
17.5°	728.2	729.4	730.5	731.6	732.7	733.3	733.2	733.1	733.0	733.0	734.7
20°	714.5	715.7	716.8	718.0	719.1	719.8	720.2	720.6	721.0	721.4	723.1
22.5°	700.2	701.3	702.5	703.6	704.7	705.6	706.1	706.6	707.2	707.7	709.9
25°	674.4	676.3	678.2	680.1	682.0	683.2	683.8	684.4	684.9	685.5	687.9
27.5°	648.5	650.6	652.8	654.9	657.1	658.8	660.0	661.2	662.4	663.7	665.8
30°	630.0	632.5	635.0	637.4	639.8	641.9	643.4	644.9	646.5	647.9	650.2
32.5°	609.5	612.3	615.1	617.8	620.6	623.0	624.9	627.0	628.9	630.9	633.3
35°	580.5	583.5	586.6	589.6	592.6	595.4	597.9	600.3	602.8	605.3	608.1
37.5°	549.8	553.2	556.6	560.0	563.5	566.6	569.7	572.7	575.8	578.8	582.0
40°	529.3	532.7	536.1	539.6	542.9	546.6	550.3	554.2	557.9	561.7	564.9
42.5°	506.7	510.9	515.1	519.3	523.4	527.5	531.4	535.4	539.3	543.3	546.8
45°	474.7	479.2	483.7	488.3	492.8	497.5	502.2	507.0	511.8	516.5	520.1
47.5°	441.0	446.2	451.3	456.5	461.6	466.9	472.4	477.8	483.2	488.6	492.7
50°	419.1	424.4	429.7	435.1	440.4	446.0	451.9	457.8	463.7	469.5	473.9
52.5°	395.9	401.5	407.2	412.8	418.4	424.4	431.0	437.4	443.9	450.4	454.9
55°	362.0	368.2	374.5	380.7	387.0	393.5	400.4	407.2	414.0	420.9	426.0
57.5°	328.8	335.3	341.9	348.4	355.0	361.9	369.4	376.9	384.3	391.8	397.0
60°	305.7	312.4	319.3	326.1	333.0	340.2	348.1	355.8	363.5	371.4	376.7
62.5°	283.7	290.7	297.7	304.7	311.7	319.3	327.5	335.7	344.0	352.2	357.5
65°	250.1	257.6	264.9	272.3	279.7	287.6	296.0	304.3	312.7	321.0	326.7
67.5°	216.0	223.8	231.7	239.5	247.4	255.6	264.1	272.6	281.0	289.6	295.8
70°	192.1	200.2	208.4	216.5	224.7	233.3	242.5	251.5	260.7	269.8	275.8
72.5°	170.2	178.4	186.5	194.7	202.8	211.7	221.0	230.5	239.9	249.2	255.5
75°	135.7	144.6	153.6	162.5	171.4	180.6	190.0	199.6	209.0	218.6	224.8
77.5°	105.7	114.7	123.7	132.6	141.6	150.9	160.5	170.1	179.6	189.1	195.8
80°	84.5	93.8	103.1	112.4	121.7	131.3	141.1	151.0	160.9	170.7	177.2
82.5°	66.0	75.5	85.0	94.4	103.9	113.6	123.6	133.6	143.7	153.7	160.1
85°	41.8	51.3	60.8	70.3	79.7	89.5	99.6	109.7	119.7	129.8	136.2
87.5°	22.7	32.4	42.0	51.6	61.2	71.0	80.9	90.7	100.6	110.6	117.1
90°	11.5	21.6	31.7	41.8	51.9	62.4	73.1	83.8	94.6	105.3	112.1
92.5°	19.3	28.3	37.3	46.1	55.1	64.7	74.8	85.0	95.1	105.2	111.8
95°	31.2	39.1	47.1	55.1	63.1	72.1	82.0	92.0	101.9	111.9	118.1
97.5°	47.1	54.2	61.3	68.4	75.5	83.7	93.1	102.5	111.8	121.2	127.2
100°	58.0	64.5	71.1	77.6	84.2	92.0	101.2	110.3	119.4	128.6	134.4
102.5°	70.5	76.3	82.1	87.8	93.6	101.0	110.1	119.3	128.4	137.5	143.1
105°	89.9	94.7	99.4	104.1	108.8	115.6	124.5	133.5	142.4	151.2	156.5
107.5°	111.7	115.7	119.6	123.6	127.6	133.5	141.6	149.6	157.7	165.8	171.0
110°	125.2	128.8	132.3	135.9	139.5	145.2	153.0	160.7	168.4	176.2	181.5



TEST NUMBER: P332153-930

CATALOG NUMBER: S123DIW-S775D460U930-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	140.0	142.9	145.8	148.7	151.6	156.7	164.0	171.4	178.6	186.0	191.2
115°	161.3	163.8	166.3	168.8	171.4	175.9	182.6	189.3	196.0	202.6	207.2
117.5°	183.4	185.0	186.5	188.2	189.7	193.6	199.8	206.0	212.2	218.4	222.9
120°	196.7	198.1	199.5	201.0	202.4	206.0	211.9	217.8	223.6	229.4	233.7
122.5°	211.2	212.0	212.9	213.7	214.6	217.8	223.6	229.3	235.1	240.8	244.8
125°	232.4	232.6	232.8	233.1	233.3	236.1	241.5	246.8	252.2	257.5	261.1
127.5°	252.7	253.1	253.5	253.8	254.1	256.5	260.8	265.2	269.6	273.9	277.3
130°	266.4	266.8	267.3	267.7	268.2	270.3	273.8	277.4	280.9	284.5	287.7
132.5°	279.2	279.9	280.5	281.1	281.8	283.5	286.3	289.2	292.0	294.9	298.0
135°	299.9	300.2	300.4	300.8	301.1	302.2	304.3	306.2	308.3	310.2	313.3
137.5°	318.9	319.2	319.4	319.7	319.9	320.7	322.1	323.6	325.0	326.4	329.0
140°	331.5	331.9	332.3	332.7	333.2	333.7	334.4	335.0	335.7	336.3	339.1
142.5°	343.6	343.9	344.1	344.5	344.7	345.0	345.2	345.4	345.8	346.0	348.5
145°	362.6	362.6	362.5	362.5	362.5	362.6	362.8	363.1	363.3	363.5	365.0
147.5°	378.3	378.5	378.9	379.1	379.4	379.7	379.9	380.2	380.4	380.7	381.1
150°	389.8	390.0	390.1	390.3	390.4	390.6	390.8	390.9	391.1	391.3	391.3
152.5°	399.3	399.5	399.7	399.9	400.1	400.3	400.4	400.6	400.6	400.7	400.9
155°	414.2	414.2	414.2	414.2	414.2	414.3	414.3	414.4	414.5	414.6	414.9
157.5°	426.9	426.8	426.7	426.6	426.5	426.5	426.6	426.6	426.6	426.7	427.1
160°	434.9	434.7	434.6	434.4	434.2	434.1	434.1	434.1	434.1	434.1	434.6
162.5°	442.0	441.7	441.5	441.2	441.1	441.0	441.0	441.1	441.2	441.2	441.6
165°	451.1	450.9	450.6	450.4	450.1	450.0	450.0	450.0	450.0	450.0	450.5
167.5°	458.4	458.1	457.8	457.5	457.1	457.0	457.1	457.1	457.2	457.2	457.8
170°	462.6	462.3	461.9	461.6	461.3	461.1	461.1	461.1	461.1	461.1	461.7
172.5°	465.9	465.5	465.2	464.9	464.5	464.3	464.3	464.3	464.3	464.3	464.9
175°	469.2	468.9	468.6	468.2	467.9	467.7	467.7	467.7	467.7	467.7	468.2
177.5°	470.7	470.3	470.1	469.9	469.6	469.4	469.4	469.4	469.4	469.4	469.9
180°	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3



TEST NUMBER: P332153-930

CATALOG NUMBER: S123DIW-S775D460U930-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	783.7	783.7	783.7	783.7	783.7	783.7	783.7	783.7
2.5°	782.0	783.3	784.4	785.0	784.8	784.6	784.5	784.4
5°	780.7	782.3	783.7	784.4	784.2	784.1	783.9	783.7
7.5°	776.0	778.0	779.8	780.6	780.4	780.2	780.0	779.8
10°	771.3	773.1	775.0	775.8	775.4	775.0	774.7	774.3
12.5°	764.8	766.5	768.3	769.0	768.6	768.3	767.8	767.4
15°	752.4	754.4	756.3	757.1	756.9	756.8	756.5	756.4
17.5°	736.4	738.1	739.8	740.5	740.3	740.0	739.7	739.5
20°	724.8	726.5	728.2	729.1	729.4	729.5	729.7	729.9
22.5°	712.0	714.2	716.3	717.4	717.3	717.1	717.1	716.9
25°	690.5	692.9	695.4	696.6	696.6	696.6	696.6	696.6
27.5°	667.9	670.0	672.1	673.3	673.4	673.6	673.8	673.9
30°	652.5	654.8	657.0	658.2	658.2	658.2	658.2	658.2
32.5°	635.7	638.1	640.6	642.0	642.5	642.9	643.4	643.8
35°	611.0	613.8	616.6	618.5	619.2	620.0	620.7	621.5
37.5°	585.2	588.5	591.7	593.6	594.2	594.8	595.4	596.1
40°	568.2	571.4	574.6	576.6	577.4	578.1	578.9	579.7
42.5°	550.3	553.8	557.4	559.7	560.8	561.8	562.9	563.9
45°	523.7	527.3	530.9	533.5	535.0	536.5	538.0	539.6
47.5°	496.8	500.8	504.9	507.5	508.7	509.9	511.0	512.2
50°	478.3	482.6	487.0	489.8	491.1	492.4	493.8	495.1
52.5°	459.4	464.0	468.5	471.6	473.2	474.8	476.5	478.1
55°	431.1	436.3	441.3	444.7	446.2	447.7	449.2	450.8
57.5°	402.2	407.3	412.5	416.0	417.8	419.6	421.3	423.1
60°	382.0	387.3	392.6	396.3	398.4	400.5	402.6	404.6
62.5°	362.9	368.2	373.5	377.1	379.0	381.0	382.9	384.8
65°	332.4	338.0	343.7	347.6	349.4	351.3	353.3	355.1
67.5°	302.0	308.3	314.5	318.4	319.9	321.6	323.2	324.7
70°	281.9	288.0	294.1	298.0	299.9	301.8	303.7	305.7
72.5°	261.7	267.9	274.2	278.3	280.1	282.0	283.9	285.8
75°	231.1	237.3	243.6	247.9	250.1	252.4	254.7	257.0
77.5°	202.4	209.0	215.6	219.7	221.5	223.2	225.0	226.7
80°	183.6	190.0	196.6	200.7	202.6	204.5	206.4	208.3
82.5°	166.6	173.0	179.4	183.6	185.6	187.4	189.3	191.2
85°	142.7	149.1	155.6	159.7	161.6	163.5	165.4	167.3
87.5°	123.6	130.0	136.6	140.8	142.8	144.7	146.6	148.5
90°	118.9	125.6	132.5	136.9	138.9	141.0	143.1	145.1
92.5°	118.3	124.9	131.4	135.5	137.2	138.8	140.5	142.1
95°	124.3	130.4	136.7	140.7	142.7	144.6	146.4	148.3
97.5°	133.2	139.3	145.3	149.2	151.1	153.0	154.8	156.7
100°	140.1	145.9	151.6	155.5	157.5	159.6	161.7	163.7
102.5°	148.7	154.3	159.9	163.6	165.5	167.3	169.2	171.0
105°	161.8	167.1	172.4	176.0	177.9	179.8	181.6	183.5
107.5°	176.4	181.7	187.1	190.5	192.2	193.7	195.3	196.8
110°	186.7	192.0	197.2	200.6	201.9	203.3	204.6	205.9





TEST NUMBER: P332153-930

CATALOG NUMBER: S123DIW-S775D460U930-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	196.3	201.5	206.7	210.1	211.7	213.4	215.0	216.6
115°	211.9	216.5	221.2	224.2	225.7	227.1	228.5	230.0
117.5°	227.4	231.9	236.4	239.3	240.5	241.7	243.0	244.3
120°	238.0	242.3	246.5	249.3	250.5	251.6	252.8	254.0
122.5°	248.8	252.8	256.8	259.3	260.5	261.5	262.7	263.7
125°	264.8	268.5	272.1	274.4	275.4	276.5	277.4	278.4
127.5°	280.5	283.8	287.1	289.3	290.2	291.1	292.0	292.9
130°	291.0	294.2	297.5	299.5	300.0	300.6	301.2	301.7
132.5°	301.0	304.1	307.1	309.1	310.0	310.8	311.6	312.5
135°	316.4	319.5	322.6	324.6	325.3	326.1	326.9	327.7
137.5°	331.7	334.3	337.0	338.6	339.2	339.9	340.5	341.1
140°	341.9	344.6	347.4	348.9	349.3	349.7	350.1	350.4
142.5°	350.9	353.4	355.8	357.3	357.8	358.3	358.8	359.3
145°	366.4	367.9	369.3	370.2	370.6	371.1	371.5	371.9
147.5°	381.6	382.0	382.5	382.8	382.9	383.2	383.4	383.5
150°	391.3	391.3	391.3	391.2	391.1	391.0	390.9	390.8
152.5°	401.0	401.1	401.3	401.1	400.8	400.5	400.1	399.7
155°	415.2	415.6	415.9	415.7	415.2	414.6	414.0	413.4
157.5°	427.5	427.8	428.1	428.0	427.6	427.1	426.6	426.2
160°	435.0	435.4	435.8	435.8	435.5	435.1	434.8	434.5
162.5°	442.1	442.5	442.9	442.8	442.3	441.7	441.2	440.7
165°	451.0	451.5	452.0	451.9	451.3	450.8	450.2	449.6
167.5°	458.3	458.8	459.3	459.3	458.8	458.3	457.8	457.2
170°	462.3	462.8	463.4	463.4	462.8	462.3	461.7	461.1
172.5°	465.4	465.9	466.4	466.4	465.8	465.2	464.6	464.1
175°	468.7	469.2	469.7	469.7	469.1	468.6	468.0	467.4
177.5°	470.3	470.7	471.0	471.0	470.5	470.1	469.6	469.1
180°	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3

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