

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: CORELITE

Report Number: P933872

Luminaire Tested: SQ4-FA-025U-050D-935-1D-UNV-STD-W-8

Issue Date: 12/17/2024

Test Information

Test Method: LM-79-2019
Report Number: P933872
REPORT IS A COMBINATION OF REPORTS P933676 AND P933786
Test Lab: INNOVATION CENTER
Issue Date: 12/17/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: CORELITE
Catalog Number: SQ4-FA-025U-050D-935-1D-UNV-STD-W-8
Description: CORELITE SQ4 SUSPENDED INDIRECT LED LUMINAIRE WITH Asymmetric Frosted Continuous I
Lens
Light Source: -
Ballast/Driver: -

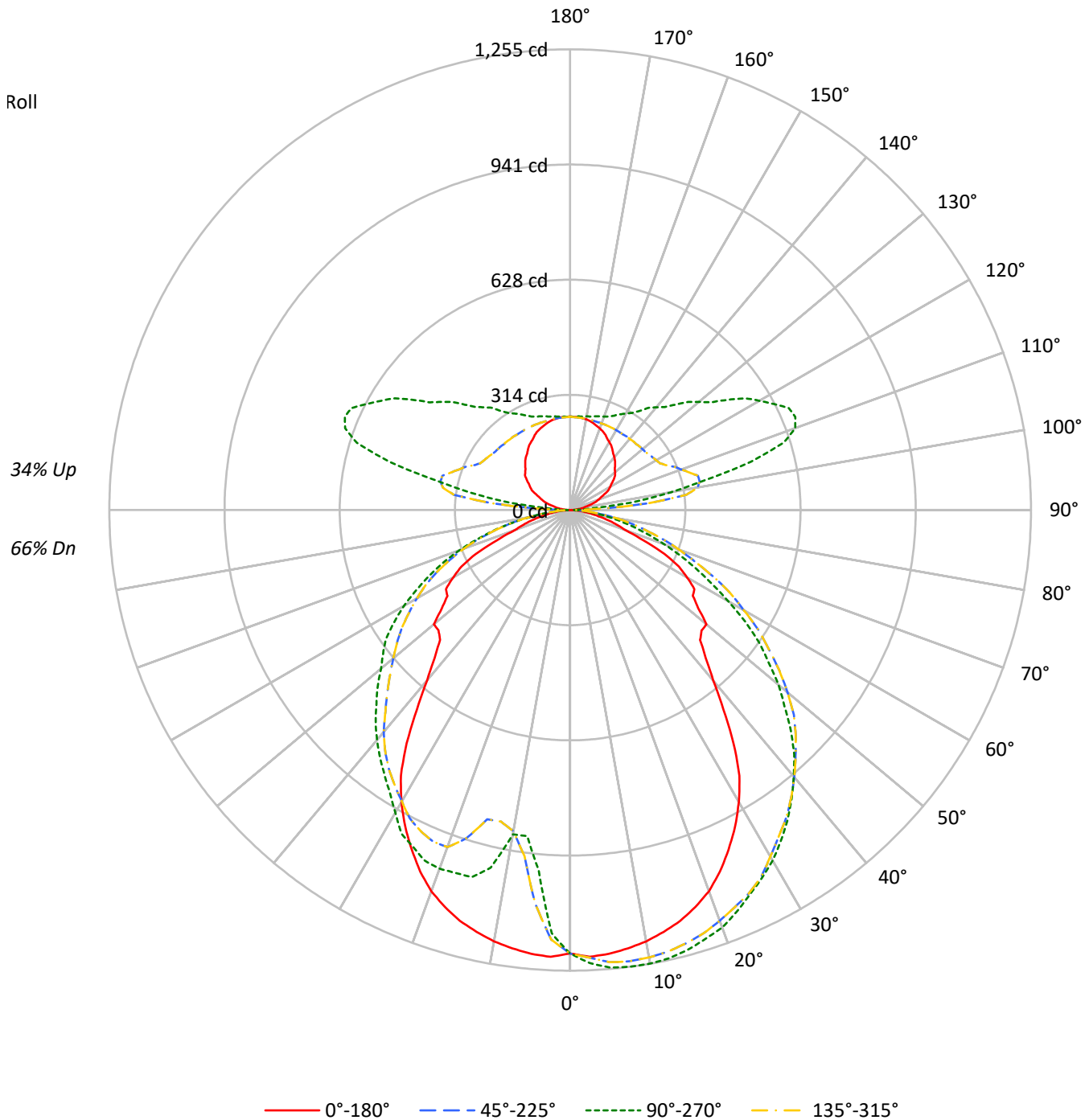
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4781.4 lumens
Efficiency: N/A
Efficacy: 108.7 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.26 / 1.36
Luminous Opening: Rectangular w/ Sides (W: 0.29' x L: 8' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 44
Input Voltage (V): NR
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: 24 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				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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	70	70	70	66			
1	101	97	93	89	95	91	88	85	81	78	76	71	69	68	62	61	60	55			
2	92	85	78	73	87	80	74	70	71	67	63	63	59	56	55	52	50	46			
3	84	75	67	61	79	70	64	58	63	57	53	55	51	48	49	46	43	39			
4	77	66	58	52	72	62	55	49	56	50	45	49	45	41	43	40	37	34			
5	71	59	50	44	66	56	48	43	50	44	39	44	39	35	39	35	32	29			
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	35	31	28	26			
7	60	48	40	34	57	45	38	33	41	35	30	36	31	28	32	28	25	23			
8	56	43	35	30	53	41	34	29	37	31	27	33	28	25	30	26	22	20			
9	52	40	32	27	49	38	31	26	34	28	24	31	26	22	27	23	20	18			
10	49	36	29	24	46	35	28	23	31	26	22	28	23	20	25	21	18	16			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	5605	5605	5605	5605
5°	5646	5657	5646	4449
10°	5609	5573	5609	3984
15°	5547	5452	5547	4553
20°	5431	5309	5431	4562
25°	5194	5100	5194	4465
30°	4887	4927	4887	4253
35°	4357	4708	4357	4020
40°	3630	4450	3630	3844
45°	3244	4148	3244	3641
50°	3446	3789	3446	3438
55°	3242	3400	3242	3320
60°	3342	2888	3342	3041
65°	3030	2388	3030	2668
70°	2098	1903	2098	2237
75°	1839	1406	1839	1685
80°	1482	929	1482	1012
85°	852	493	852	419

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 20°
 Vertical Angle: 45°
 Luminance: 4971 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.0	2.3
10°-20°	309.6	6.5
20°-30°	478.6	10.0
30°-40°	571.3	11.9
40°-50°	574.7	12.0
50°-60°	500.0	10.5
60°-70°	354.5	7.4
70°-80°	187.6	3.9
80°-90°	47.7	1.0
90°-100°	124.0	2.6
100°-110°	325.9	6.8
110°-120°	337.9	7.1
120°-130°	271.1	5.7
130°-140°	212.7	4.4
140°-150°	163.2	3.4
150°-160°	117.6	2.5
160°-170°	71.9	1.5
170°-180°	24.3	0.5
0°-30°	897.2	18.8
0°-40°	1468.5	30.7
0°-60°	2543.1	53.2
0°-90°	3132.9	65.5
90°-120°	787.8	16.5
90°-150°	1434.7	30.0
90°-180°	1649.0	34.5
0°-180°	4781.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1208	1208	1208	1208	1208	
5°	1214	1251	1214	984	1214	115
15°	1159	1240	1159	1035	1159	326
25°	1020	1156	1020	1012	1020	469
35°	776	1032	776	881	776	480
45°	501	850	501	746	501	401
55°	408	627	408	612	408	375
65°	283	378	283	423	283	271
75°	107	179	107	215	107	113
85°	18	46	18	39	18	25
90°	2	6	2	6	2	2
95°	16	75	16	75	16	18
105°	59	510	59	510	59	62
115°	104	657	104	657	104	103
125°	145	523	145	523	145	129
135°	173	406	173	406	173	134
145°	201	329	201	329	201	126
155°	227	284	227	284	227	104
165°	245	264	245	264	245	69
175°	254	256	254	256	254	24
180°	254	254	254	254	254	



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CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0
2.5°	1218.2	1218.2	1225.1	1227.4	1227.4	1223.9	1220.5	1223.9	1234.2	1237.6	1236.5
5°	1213.7	1222.8	1235.4	1237.6	1239.9	1238.8	1236.5	1238.8	1250.2	1252.5	1253.6
7.5°	1204.5	1221.7	1237.6	1241.1	1244.5	1241.1	1239.9	1242.2	1253.6	1255.9	1255.9
10°	1193.1	1217.1	1235.4	1237.6	1241.1	1237.6	1237.6	1242.2	1253.6	1255.9	1257.0
12.5°	1177.0	1210.2	1227.4	1229.6	1234.2	1233.1	1231.9	1236.5	1247.9	1250.2	1250.2
15°	1158.8	1197.7	1213.7	1215.9	1223.9	1221.7	1221.7	1226.2	1238.8	1242.2	1241.1
17.5°	1133.7	1181.6	1200.0	1203.4	1209.1	1208.0	1209.1	1213.7	1225.1	1227.4	1228.5
20°	1105.0	1159.9	1181.6	1185.0	1190.8	1190.8	1190.8	1196.5	1208.0	1212.5	1212.5
22.5°	1066.2	1137.1	1159.9	1162.2	1169.1	1169.1	1171.3	1179.3	1189.6	1190.8	1190.8
25°	1020.5	1111.9	1131.4	1138.2	1145.1	1148.5	1151.9	1156.5	1159.9	1158.8	1159.9
27.5°	972.6	1079.9	1105.0	1109.6	1118.8	1122.3	1126.8	1128.0	1129.1	1132.5	1130.3
30°	918.8	1035.4	1073.1	1077.7	1092.5	1094.8	1090.2	1092.5	1098.2	1100.5	1102.8
32.5°	858.2	969.1	1040.0	1050.3	1064.0	1057.1	1056.0	1059.4	1068.5	1068.5	1070.8
35°	775.9	917.7	1009.1	1018.2	1028.5	1020.5	1025.1	1026.2	1031.9	1035.4	1034.2
37.5°	685.7	873.1	977.1	984.0	992.0	981.7	988.5	992.0	996.5	994.2	994.2
40°	605.7	803.4	939.4	943.9	950.8	942.8	949.6	951.9	954.2	951.9	950.8
42.5°	546.2	726.8	899.4	905.1	900.5	906.3	908.5	913.1	909.7	905.1	905.1
45°	500.6	706.2	855.9	862.8	855.9	865.1	868.5	868.5	858.2	855.9	854.8
47.5°	485.7	665.1	812.6	812.6	809.1	820.6	826.3	818.3	808.0	804.5	804.5
50°	484.5	619.4	753.1	748.6	764.5	778.2	772.5	764.5	756.5	744.0	744.0
52.5°	440.0	563.4	676.6	693.7	718.8	726.8	717.6	709.7	696.0	690.2	685.7
55°	407.9	505.2	606.8	641.1	667.4	677.7	660.6	652.5	631.9	628.5	626.2
57.5°	401.1	420.5	542.8	586.3	618.2	617.1	606.8	592.0	574.8	571.4	570.2
60°	368.0	304.0	474.2	525.7	558.8	555.4	546.2	532.5	516.6	514.3	512.0
62.5°	333.7	220.6	396.5	454.8	501.7	500.6	492.5	472.0	460.5	454.8	450.3
65°	283.4	185.1	282.3	378.3	445.7	448.0	430.9	415.9	403.4	396.5	395.4
67.5°	216.0	150.9	190.8	315.4	392.0	389.7	368.0	361.2	345.1	341.7	334.8
70°	160.0	100.5	132.6	256.0	339.4	333.7	316.5	308.6	293.7	285.7	281.2
72.5°	132.6	81.1	97.1	198.9	285.7	278.9	263.9	254.8	242.3	235.4	230.8
75°	107.4	85.7	74.3	147.4	232.0	227.4	213.7	204.6	194.3	185.1	186.2
77.5°	78.9	80.0	59.4	108.5	184.0	177.1	169.1	157.7	153.1	144.0	144.0
80°	59.4	62.9	44.6	74.3	132.6	132.6	125.7	117.7	109.7	105.1	105.1
82.5°	40.0	40.0	33.1	46.9	90.3	86.8	82.3	80.0	75.4	73.1	73.1
85°	18.3	22.8	20.5	28.5	49.2	51.5	51.5	49.2	48.0	45.8	46.9
87.5°	5.7	10.3	12.6	16.0	25.1	26.3	27.4	27.4	27.4	28.5	28.5
90°	1.7	3.1	4.4	4.8	7.5	11.2	13.0	11.5	8.6	6.5	6.5
92.5°	6.8	18.4	30.1	33.0	46.3	64.2	73.0	64.0	46.0	32.5	31.2
95°	16.4	37.6	58.9	64.2	113.9	180.3	213.5	190.5	144.6	110.1	106.2
97.5°	28.4	47.1	65.8	70.5	153.4	264.1	319.5	305.0	276.0	254.2	246.7
100°	37.6	54.5	71.5	75.7	167.8	290.6	352.0	353.2	355.3	356.9	348.0
102.5°	45.4	61.3	77.1	81.0	174.5	299.1	361.3	379.8	416.8	444.6	437.0
105°	58.7	72.2	85.6	88.9	179.4	300.0	360.3	401.8	484.8	547.0	542.9
107.5°	72.3	84.9	97.4	100.5	180.3	286.6	339.8	397.6	513.4	600.2	601.3
110°	81.6	92.9	104.2	107.0	178.9	274.8	322.7	387.4	516.8	613.9	618.1



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CANDELA DISTRIBUTION (continued):

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
112.5°	90.7	101.4	112.1	114.8	179.0	264.5	307.2	373.4	505.8	605.2	611.7
115°	104.3	114.2	124.1	126.6	180.6	252.6	288.6	352.4	480.0	575.7	584.7
117.5°	117.7	126.8	135.8	138.1	184.0	245.2	275.8	333.4	448.5	534.9	544.9
120°	125.6	134.1	142.6	144.8	186.8	242.7	270.7	323.2	428.5	507.4	517.1
122.5°	133.3	141.9	150.5	152.6	190.7	241.4	266.8	314.1	408.9	479.9	489.6
125°	145.1	152.9	160.7	162.6	196.0	240.3	262.5	302.7	383.2	443.6	452.4
127.5°	154.6	162.5	170.4	172.4	201.2	239.7	258.9	293.5	362.6	414.4	421.9
130°	159.8	168.3	176.7	178.8	205.1	240.1	257.6	288.3	349.8	395.9	402.8
132.5°	165.0	173.6	182.0	184.1	208.2	240.3	256.4	283.9	338.9	380.2	386.5
135°	172.9	180.6	188.4	190.3	211.6	240.1	254.3	277.4	323.5	358.1	363.4
137.5°	180.9	188.5	196.2	198.2	216.7	241.5	254.0	273.5	312.4	341.7	346.0
140°	187.5	194.6	201.7	203.5	219.9	241.8	252.8	269.7	303.3	328.5	332.6
142.5°	192.7	199.2	205.8	207.4	222.5	242.7	252.8	267.6	297.2	319.3	322.8
145°	200.6	206.3	211.9	213.3	226.0	242.7	251.1	263.2	287.4	305.5	308.2
147.5°	208.4	213.9	219.5	220.8	230.9	244.4	251.1	260.6	279.6	293.9	296.1
150°	213.5	218.5	223.5	224.8	233.5	245.2	251.1	259.1	275.2	287.2	289.0
152.5°	218.8	222.5	226.4	227.3	235.2	245.8	251.1	257.9	271.6	281.9	283.3
155°	226.6	229.4	232.3	232.9	239.0	247.1	251.1	256.5	267.4	275.6	276.5
157.5°	232.4	235.2	237.9	238.6	242.7	248.3	251.1	255.3	263.8	270.2	270.8
160°	236.3	238.5	240.6	241.1	244.4	248.9	251.1	254.7	262.0	267.4	267.8
162.5°	240.3	241.9	243.4	243.8	246.2	249.5	251.1	254.2	260.3	264.9	265.2
165°	244.6	246.1	247.5	247.8	249.0	250.4	251.1	253.3	257.6	261.0	261.3
167.5°	248.5	249.2	249.9	250.1	251.0	252.2	252.8	254.2	257.1	259.3	259.4
170°	251.1	251.8	252.4	252.6	252.7	252.8	252.8	254.2	257.1	259.3	259.3
172.5°	252.4	252.6	252.8	252.8	252.8	252.8	252.8	253.9	256.2	257.9	257.7
175°	254.3	254.3	254.3	254.3	253.8	253.1	252.8	253.5	254.9	256.0	256.0
177.5°	254.3	254.3	254.3	254.3	253.9	253.4	253.1	253.7	254.8	255.7	255.5
180°	254.3	254.3	254.3	254.3	254.3	254.3	254.3	254.3	254.3	254.3	254.3



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CANDELA DISTRIBUTION (continued):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0
2.5°	1238.8	1235.4	1238.8	1236.5	1237.6	1234.2	1223.9	1220.5	1223.9	1227.4	1227.4
5°	1253.6	1251.3	1253.6	1253.6	1252.5	1250.2	1238.8	1236.5	1238.8	1239.9	1237.6
7.5°	1258.2	1254.8	1258.2	1255.9	1255.9	1253.6	1242.2	1239.9	1241.1	1244.5	1241.1
10°	1258.2	1254.8	1258.2	1257.0	1255.9	1253.6	1242.2	1237.6	1237.6	1241.1	1237.6
12.5°	1252.5	1250.2	1252.5	1250.2	1250.2	1247.9	1236.5	1231.9	1233.1	1234.2	1229.6
15°	1243.3	1239.9	1243.3	1241.1	1242.2	1238.8	1226.2	1221.7	1221.7	1223.9	1215.9
17.5°	1229.6	1225.1	1229.6	1228.5	1227.4	1225.1	1213.7	1209.1	1208.0	1209.1	1203.4
20°	1213.7	1210.2	1213.7	1212.5	1212.5	1208.0	1196.5	1190.8	1190.8	1190.8	1185.0
22.5°	1188.5	1185.0	1188.5	1190.8	1190.8	1189.6	1179.3	1171.3	1169.1	1169.1	1162.2
25°	1159.9	1156.5	1159.9	1159.9	1158.8	1159.9	1156.5	1151.9	1148.5	1145.1	1138.2
27.5°	1132.5	1130.3	1132.5	1130.3	1132.5	1129.1	1128.0	1126.8	1122.3	1118.8	1109.6
30°	1105.0	1102.8	1105.0	1102.8	1100.5	1098.2	1092.5	1090.2	1094.8	1092.5	1077.7
32.5°	1070.8	1068.5	1070.8	1070.8	1068.5	1068.5	1059.4	1056.0	1057.1	1064.0	1050.3
35°	1035.4	1031.9	1035.4	1034.2	1035.4	1031.9	1026.2	1025.1	1020.5	1028.5	1018.2
37.5°	994.2	990.8	994.2	994.2	994.2	996.5	992.0	988.5	981.7	992.0	984.0
40°	951.9	947.3	951.9	950.8	951.9	954.2	951.9	949.6	942.8	950.8	943.9
42.5°	904.0	902.8	904.0	905.1	905.1	909.7	913.1	908.5	906.3	900.5	905.1
45°	852.5	850.2	852.5	854.8	855.9	858.2	868.5	868.5	865.1	855.9	862.8
47.5°	797.6	791.9	797.6	804.5	804.5	808.0	818.3	826.3	820.6	809.1	812.6
50°	739.4	740.6	739.4	744.0	744.0	756.5	764.5	772.5	778.2	764.5	748.6
52.5°	682.3	681.1	682.3	685.7	690.2	696.0	709.7	717.6	726.8	718.8	693.7
55°	625.1	627.4	625.1	626.2	628.5	631.9	652.5	660.6	677.7	667.4	641.1
57.5°	567.9	564.5	567.9	570.2	571.4	574.8	592.0	606.8	617.1	618.2	586.3
60°	501.7	497.1	501.7	512.0	514.3	516.6	532.5	546.2	555.4	558.8	525.7
62.5°	443.4	435.4	443.4	450.3	454.8	460.5	472.0	492.5	500.6	501.7	454.8
65°	381.7	378.3	381.7	395.4	396.5	403.4	415.9	430.9	448.0	445.7	378.3
67.5°	325.7	325.7	325.7	334.8	341.7	345.1	361.2	368.0	389.7	392.0	315.4
70°	274.3	273.2	274.3	281.2	285.7	293.7	308.6	316.5	333.7	339.4	256.0
72.5°	225.1	224.0	225.1	230.8	235.4	242.3	254.8	263.9	278.9	285.7	198.9
75°	181.7	179.4	181.7	186.2	185.1	194.3	204.6	213.7	227.4	232.0	147.4
77.5°	139.4	139.4	139.4	144.0	144.0	153.1	157.7	169.1	177.1	184.0	108.5
80°	104.0	102.8	104.0	105.1	105.1	109.7	117.7	125.7	132.6	132.6	74.3
82.5°	73.1	70.9	73.1	73.1	73.1	75.4	80.0	82.3	86.8	90.3	46.9
85°	45.8	45.8	45.8	46.9	45.8	48.0	49.2	51.5	51.5	49.2	28.5
87.5°	29.7	28.5	29.7	28.5	28.5	27.4	27.4	27.4	26.3	25.1	16.0
90°	6.5	6.5	6.5	6.5	6.5	8.6	11.5	13.0	11.2	7.5	4.8
92.5°	26.0	20.8	26.0	31.2	32.5	46.0	64.0	73.0	64.2	46.3	33.0
95°	90.6	74.9	90.6	106.2	110.1	144.6	190.5	213.5	180.3	113.9	64.2
97.5°	216.9	187.2	216.9	246.7	254.2	276.0	305.0	319.5	264.1	153.4	70.5
100°	312.6	277.2	312.6	348.0	356.9	355.3	353.2	352.0	290.6	167.8	75.7
102.5°	406.7	376.3	406.7	437.0	444.6	416.8	379.8	361.3	299.1	174.5	81.0
105°	526.6	510.3	526.6	542.9	547.0	484.8	401.8	360.3	300.0	179.4	88.9
107.5°	605.2	609.1	605.2	601.3	600.2	513.4	397.6	339.8	286.6	180.3	100.5
110°	635.1	652.1	635.1	618.1	613.9	516.8	387.4	322.7	274.8	178.9	107.0



TEST NUMBER: P933872

CATALOG NUMBER: SQ4-FA-025U-050D-935-1D-UNV-STD-W-8

CANDELA DISTRIBUTION (continued):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
112.5°	637.8	663.9	637.8	611.7	605.2	505.8	373.4	307.2	264.5	179.0	114.8
115°	620.9	657.1	620.9	584.7	575.7	480.0	352.4	288.6	252.6	180.6	126.6
117.5°	585.1	625.2	585.1	544.9	534.9	448.5	333.4	275.8	245.2	184.0	138.1
120°	556.1	595.1	556.1	517.1	507.4	428.5	323.2	270.7	242.7	186.8	144.8
122.5°	528.0	566.4	528.0	489.6	479.9	408.9	314.1	266.8	241.4	190.7	152.6
125°	487.9	523.3	487.9	452.4	443.6	383.2	302.7	262.5	240.3	196.0	162.6
127.5°	451.7	481.6	451.7	421.9	414.4	362.6	293.5	258.9	239.7	201.2	172.4
130°	430.4	458.0	430.4	402.8	395.9	349.8	288.3	257.6	240.1	205.1	178.8
132.5°	411.2	435.9	411.2	386.5	380.2	338.9	283.9	256.4	240.3	208.2	184.1
135°	384.7	406.0	384.7	363.4	358.1	323.5	277.4	254.3	240.1	211.6	190.3
137.5°	363.5	380.9	363.5	346.0	341.7	312.4	273.5	254.0	241.5	216.7	198.2
140°	348.9	365.3	348.9	332.6	328.5	303.3	269.7	252.8	241.8	219.9	203.5
142.5°	336.9	350.9	336.9	322.8	319.3	297.2	267.6	252.8	242.7	222.5	207.4
145°	318.8	329.4	318.8	308.2	305.5	287.4	263.2	251.1	242.7	226.0	213.3
147.5°	304.8	313.7	304.8	296.1	293.9	279.6	260.6	251.1	244.4	230.9	220.8
150°	296.2	303.3	296.2	289.0	287.2	275.2	259.1	251.1	245.2	233.5	224.8
152.5°	288.7	294.0	288.7	283.3	281.9	271.6	257.9	251.1	245.8	235.2	227.3
155°	280.1	283.6	280.1	276.5	275.6	267.4	256.5	251.1	247.1	239.0	232.9
157.5°	273.3	275.8	273.3	270.8	270.2	263.8	255.3	251.1	248.3	242.7	238.6
160°	269.2	270.7	269.2	267.8	267.4	262.0	254.7	251.1	248.9	244.4	241.1
162.5°	266.6	268.0	266.6	265.2	264.9	260.3	254.2	251.1	249.5	246.2	243.8
165°	262.8	264.2	262.8	261.3	261.0	257.6	253.3	251.1	250.4	249.0	247.8
167.5°	260.0	260.6	260.0	259.4	259.3	257.1	254.2	252.8	252.2	251.0	250.1
170°	259.3	259.3	259.3	259.3	259.3	257.1	254.2	252.8	252.8	252.7	252.6
172.5°	257.2	256.7	257.2	257.7	257.9	256.2	253.9	252.8	252.8	252.8	252.8
175°	256.0	256.0	256.0	256.0	256.0	254.9	253.5	252.8	253.1	253.8	254.3
177.5°	254.9	254.3	254.9	255.5	255.7	254.8	253.7	253.1	253.4	253.9	254.3
180°	254.3	254.3	254.3	254.3	254.3	254.3	254.3	254.3	254.3	254.3	254.3



TEST NUMBER: P933872

CATALOG NUMBER: SQ4-FA-025U-050D-935-1D-UNV-STD-W-8

CANDELA DISTRIBUTION (continued):

	160°	170°	180°	190°	200°	202.5°	210°	220°	225°	230°	240°
0°	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0
2.5°	1225.1	1218.2	1218.2	1206.8	1202.3	1198.8	1193.1	1175.9	1171.3	1166.8	1173.6
5°	1235.4	1222.8	1213.7	1193.1	1175.9	1169.1	1147.4	1106.2	1078.8	1058.2	1046.8
7.5°	1237.6	1221.7	1204.5	1172.5	1131.4	1113.1	1046.8	971.4	950.8	932.5	921.1
10°	1235.4	1217.1	1193.1	1145.1	1048.0	1015.9	949.6	900.5	888.0	884.5	888.0
12.5°	1227.4	1210.2	1177.0	1097.1	961.1	939.4	900.5	871.9	869.6	875.3	906.3
15°	1213.7	1197.7	1158.8	1033.0	913.1	897.1	869.6	859.4	871.9	912.0	1004.5
17.5°	1200.0	1181.6	1133.7	970.3	876.5	865.1	845.7	866.2	937.1	990.8	1021.6
20°	1181.6	1159.9	1105.0	924.5	850.2	840.0	830.8	923.4	977.1	996.5	1013.6
22.5°	1159.9	1137.1	1066.2	892.6	822.8	814.9	820.6	955.3	977.1	990.8	1005.6
25°	1131.4	1111.9	1020.5	867.4	801.1	791.9	813.7	951.9	964.5	968.0	997.7
27.5°	1105.0	1079.9	972.6	844.5	774.8	771.4	819.4	937.1	946.2	949.6	981.7
30°	1073.1	1035.4	918.8	820.6	747.4	746.3	820.6	918.8	916.5	925.7	957.6
32.5°	1040.0	969.1	858.2	790.8	721.1	719.9	812.6	891.4	889.1	901.7	925.7
35°	1009.1	917.7	775.9	756.5	688.0	689.1	793.1	859.4	860.5	871.9	886.8
37.5°	977.1	873.1	685.7	718.8	656.0	656.0	766.8	829.7	827.4	830.8	851.4
40°	939.4	803.4	605.7	669.7	626.2	622.8	734.8	797.6	789.6	788.5	817.1
42.5°	899.4	726.8	546.2	604.6	592.0	587.4	696.0	758.8	744.0	747.4	783.9
45°	855.9	706.2	500.6	510.9	556.5	553.1	653.7	714.2	703.9	713.1	750.8
47.5°	812.6	665.1	485.7	424.0	518.9	517.7	606.8	670.8	665.1	674.3	714.2
50°	753.1	619.4	484.5	363.4	476.5	481.1	550.8	628.5	628.5	636.5	678.8
52.5°	676.6	563.4	440.0	329.1	427.4	441.1	501.7	592.0	594.3	602.3	639.9
55°	606.8	505.2	407.9	302.8	369.1	398.8	453.7	554.2	558.8	566.8	601.1
57.5°	542.8	420.5	401.1	272.0	315.4	344.0	411.4	517.7	520.0	526.8	559.9
60°	474.2	304.0	368.0	238.8	268.6	290.3	372.6	474.2	482.2	486.8	515.4
62.5°	396.5	220.6	333.7	216.0	245.7	250.2	340.5	433.2	443.4	446.9	464.0
65°	282.3	185.1	283.4	196.6	221.7	222.9	306.3	390.8	400.0	405.7	418.2
67.5°	190.8	150.9	216.0	178.2	203.5	204.6	273.2	341.7	354.3	358.9	366.9
70°	132.6	100.5	160.0	158.8	182.8	185.1	237.7	297.1	308.6	312.0	316.5
72.5°	97.1	81.1	132.6	142.9	161.1	163.4	201.2	246.8	258.2	261.7	263.9
75°	74.3	85.7	107.4	124.6	137.2	138.3	164.5	201.2	209.2	211.4	212.6
77.5°	59.4	80.0	78.9	100.5	112.0	109.7	129.2	155.4	162.3	162.3	162.3
80°	44.6	62.9	59.4	72.0	82.3	80.0	92.5	110.8	113.1	115.4	114.3
82.5°	33.1	40.0	40.0	45.8	54.9	52.6	61.7	72.0	72.0	72.0	74.3
85°	20.5	22.8	18.3	24.0	30.8	29.7	34.3	38.9	40.0	40.0	37.7
87.5°	12.6	10.3	5.7	9.1	13.7	13.7	16.0	17.1	16.0	16.0	16.0
90°	4.4	3.1	1.7	3.1	4.4	4.8	7.5	11.2	13.0	11.5	8.6
92.5°	30.1	18.4	6.8	18.4	30.1	33.0	46.3	64.2	73.0	64.0	46.0
95°	58.9	37.6	16.4	37.6	58.9	64.2	113.9	180.3	213.5	190.5	144.6
97.5°	65.8	47.1	28.4	47.1	65.8	70.5	153.4	264.1	319.5	305.0	276.0
100°	71.5	54.5	37.6	54.5	71.5	75.7	167.8	290.6	352.0	353.2	355.3
102.5°	77.1	61.3	45.4	61.3	77.1	81.0	174.5	299.1	361.3	379.8	416.8
105°	85.6	72.2	58.7	72.2	85.6	88.9	179.4	300.0	360.3	401.8	484.8
107.5°	97.4	84.9	72.3	84.9	97.4	100.5	180.3	286.6	339.8	397.6	513.4
110°	104.2	92.9	81.6	92.9	104.2	107.0	178.9	274.8	322.7	387.4	516.8



TEST NUMBER: P933872

CATALOG NUMBER: SQ4-FA-025U-050D-935-1D-UNV-STD-W-8

CANDELA DISTRIBUTION (continued):

	160°	170°	180°	190°	200°	202.5°	210°	220°	225°	230°	240°
112.5°	112.1	101.4	90.7	101.4	112.1	114.8	179.0	264.5	307.2	373.4	505.8
115°	124.1	114.2	104.3	114.2	124.1	126.6	180.6	252.6	288.6	352.4	480.0
117.5°	135.8	126.8	117.7	126.8	135.8	138.1	184.0	245.2	275.8	333.4	448.5
120°	142.6	134.1	125.6	134.1	142.6	144.8	186.8	242.7	270.7	323.2	428.5
122.5°	150.5	141.9	133.3	141.9	150.5	152.6	190.7	241.4	266.8	314.1	408.9
125°	160.7	152.9	145.1	152.9	160.7	162.6	196.0	240.3	262.5	302.7	383.2
127.5°	170.4	162.5	154.6	162.5	170.4	172.4	201.2	239.7	258.9	293.5	362.6
130°	176.7	168.3	159.8	168.3	176.7	178.8	205.1	240.1	257.6	288.3	349.8
132.5°	182.0	173.6	165.0	173.6	182.0	184.1	208.2	240.3	256.4	283.9	338.9
135°	188.4	180.6	172.9	180.6	188.4	190.3	211.6	240.1	254.3	277.4	323.5
137.5°	196.2	188.5	180.9	188.5	196.2	198.2	216.7	241.5	254.0	273.5	312.4
140°	201.7	194.6	187.5	194.6	201.7	203.5	219.9	241.8	252.8	269.7	303.3
142.5°	205.8	199.2	192.7	199.2	205.8	207.4	222.5	242.7	252.8	267.6	297.2
145°	211.9	206.3	200.6	206.3	211.9	213.3	226.0	242.7	251.1	263.2	287.4
147.5°	219.5	213.9	208.4	213.9	219.5	220.8	230.9	244.4	251.1	260.6	279.6
150°	223.5	218.5	213.5	218.5	223.5	224.8	233.5	245.2	251.1	259.1	275.2
152.5°	226.4	222.5	218.8	222.5	226.4	227.3	235.2	245.8	251.1	257.9	271.6
155°	232.3	229.4	226.6	229.4	232.3	232.9	239.0	247.1	251.1	256.5	267.4
157.5°	237.9	235.2	232.4	235.2	237.9	238.6	242.7	248.3	251.1	255.3	263.8
160°	240.6	238.5	236.3	238.5	240.6	241.1	244.4	248.9	251.1	254.7	262.0
162.5°	243.4	241.9	240.3	241.9	243.4	243.8	246.2	249.5	251.1	254.2	260.3
165°	247.5	246.1	244.6	246.1	247.5	247.8	249.0	250.4	251.1	253.3	257.6
167.5°	249.9	249.2	248.5	249.2	249.9	250.1	251.0	252.2	252.8	254.2	257.1
170°	252.4	251.8	251.1	251.8	252.4	252.6	252.7	252.8	252.8	254.2	257.1
172.5°	252.8	252.6	252.4	252.6	252.8	252.8	252.8	252.8	252.8	253.9	256.2
175°	254.3	254.3	254.3	254.3	254.3	254.3	253.8	253.1	252.8	253.5	254.9
177.5°	254.3	254.3	254.3	254.3	254.3	254.3	253.9	253.4	253.1	253.7	254.8
180°	254.3	254.3	254.3	254.3	254.3	254.3	254.3	254.3	254.3	254.3	254.3



TEST NUMBER: P933872

CATALOG NUMBER: SQ4-FA-025U-050D-935-1D-UNV-STD-W-8

CANDELA DISTRIBUTION (continued):

	247.5°	250°	260°	270°	280°	290°	292.5°	300°	310°	315°	320°
0°	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0	1208.0
2.5°	1165.6	1162.2	1166.8	1154.2	1166.8	1162.2	1165.6	1173.6	1166.8	1171.3	1175.9
5°	1022.8	1017.1	998.8	984.0	998.8	1017.1	1022.8	1046.8	1058.2	1078.8	1106.2
7.5°	914.2	909.7	905.1	896.0	905.1	909.7	914.2	921.1	932.5	950.8	971.4
10°	890.3	891.4	898.3	897.1	898.3	891.4	890.3	888.0	884.5	888.0	900.5
12.5°	951.9	962.2	999.9	997.7	999.9	962.2	951.9	906.3	875.3	869.6	871.9
15°	1022.8	1026.2	1034.2	1035.4	1034.2	1026.2	1022.8	1004.5	912.0	871.9	859.4
17.5°	1029.6	1030.8	1036.5	1036.5	1036.5	1030.8	1029.6	1021.6	990.8	937.1	866.2
20°	1023.9	1026.2	1037.7	1040.0	1037.7	1026.2	1023.9	1013.6	996.5	977.1	923.4
22.5°	1021.6	1026.2	1035.4	1034.2	1035.4	1026.2	1021.6	1005.6	990.8	977.1	955.3
25°	1010.2	1010.2	1011.4	1012.5	1011.4	1010.2	1010.2	997.7	968.0	964.5	951.9
27.5°	986.2	988.5	995.4	994.2	995.4	988.5	986.2	981.7	949.6	946.2	937.1
30°	964.5	962.2	956.5	951.9	956.5	962.2	964.5	957.6	925.7	916.5	918.8
32.5°	927.9	922.2	916.5	913.1	916.5	922.2	927.9	925.7	901.7	889.1	891.4
35°	884.5	885.7	884.5	881.1	884.5	885.7	884.5	886.8	871.9	860.5	859.4
37.5°	853.7	855.9	854.8	850.2	854.8	855.9	853.7	851.4	830.8	827.4	829.7
40°	821.7	822.8	821.7	818.3	821.7	822.8	821.7	817.1	788.5	789.6	797.6
42.5°	790.8	789.6	786.2	783.9	786.2	789.6	790.8	783.9	747.4	744.0	758.8
45°	755.4	756.5	749.7	746.3	749.7	756.5	755.4	750.8	713.1	703.9	714.2
47.5°	719.9	719.9	714.2	710.8	714.2	719.9	719.9	714.2	674.3	665.1	670.8
50°	682.3	681.1	673.1	672.0	673.1	681.1	682.3	678.8	636.5	628.5	628.5
52.5°	638.8	638.8	639.9	642.2	639.9	638.8	638.8	639.9	602.3	594.3	592.0
55°	601.1	602.3	610.3	612.5	610.3	602.3	601.1	601.1	566.8	558.8	554.2
57.5°	562.2	562.2	567.9	567.9	567.9	562.2	562.2	559.9	526.8	520.0	517.7
60°	517.7	520.0	524.6	523.4	524.6	520.0	517.7	515.4	486.8	482.2	474.2
62.5°	470.8	473.1	474.2	472.0	474.2	473.1	470.8	464.0	446.9	443.4	433.2
65°	421.7	424.0	425.1	422.8	425.1	424.0	421.7	418.2	405.7	400.0	390.8
67.5°	371.4	370.3	369.1	373.7	369.1	370.3	371.4	366.9	358.9	354.3	341.7
70°	320.0	320.0	318.8	321.1	318.8	320.0	320.0	316.5	312.0	308.6	297.1
72.5°	265.1	263.9	268.6	265.1	268.6	263.9	265.1	263.9	261.7	258.2	246.8
75°	211.4	213.7	211.4	214.9	211.4	213.7	211.4	212.6	211.4	209.2	201.2
77.5°	161.1	163.4	161.1	161.1	161.1	163.4	161.1	162.3	162.3	162.3	155.4
80°	114.3	113.1	113.1	112.0	113.1	113.1	114.3	114.3	115.4	113.1	110.8
82.5°	73.1	72.0	72.0	74.3	72.0	72.0	73.1	74.3	72.0	72.0	72.0
85°	40.0	41.2	38.9	38.9	38.9	41.2	40.0	37.7	40.0	40.0	38.9
87.5°	14.8	13.7	13.7	13.7	13.7	13.7	14.8	16.0	16.0	16.0	17.1
90°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	8.6	11.5	13.0	11.2
92.5°	32.5	31.2	26.0	20.8	26.0	31.2	32.5	46.0	64.0	73.0	64.2
95°	110.1	106.2	90.6	74.9	90.6	106.2	110.1	144.6	190.5	213.5	180.3
97.5°	254.2	246.7	216.9	187.2	216.9	246.7	254.2	276.0	305.0	319.5	264.1
100°	356.9	348.0	312.6	277.2	312.6	348.0	356.9	355.3	353.2	352.0	290.6
102.5°	444.6	437.0	406.7	376.3	406.7	437.0	444.6	416.8	379.8	361.3	299.1
105°	547.0	542.9	526.6	510.3	526.6	542.9	547.0	484.8	401.8	360.3	300.0
107.5°	600.2	601.3	605.2	609.1	605.2	601.3	600.2	513.4	397.6	339.8	286.6
110°	613.9	618.1	635.1	652.1	635.1	618.1	613.9	516.8	387.4	322.7	274.8



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CANDELA DISTRIBUTION (continued):

	247.5°	250°	260°	270°	280°	290°	292.5°	300°	310°	315°	320°
112.5°	605.2	611.7	637.8	663.9	637.8	611.7	605.2	505.8	373.4	307.2	264.5
115°	575.7	584.7	620.9	657.1	620.9	584.7	575.7	480.0	352.4	288.6	252.6
117.5°	534.9	544.9	585.1	625.2	585.1	544.9	534.9	448.5	333.4	275.8	245.2
120°	507.4	517.1	556.1	595.1	556.1	517.1	507.4	428.5	323.2	270.7	242.7
122.5°	479.9	489.6	528.0	566.4	528.0	489.6	479.9	408.9	314.1	266.8	241.4
125°	443.6	452.4	487.9	523.3	487.9	452.4	443.6	383.2	302.7	262.5	240.3
127.5°	414.4	421.9	451.7	481.6	451.7	421.9	414.4	362.6	293.5	258.9	239.7
130°	395.9	402.8	430.4	458.0	430.4	402.8	395.9	349.8	288.3	257.6	240.1
132.5°	380.2	386.5	411.2	435.9	411.2	386.5	380.2	338.9	283.9	256.4	240.3
135°	358.1	363.4	384.7	406.0	384.7	363.4	358.1	323.5	277.4	254.3	240.1
137.5°	341.7	346.0	363.5	380.9	363.5	346.0	341.7	312.4	273.5	254.0	241.5
140°	328.5	332.6	348.9	365.3	348.9	332.6	328.5	303.3	269.7	252.8	241.8
142.5°	319.3	322.8	336.9	350.9	336.9	322.8	319.3	297.2	267.6	252.8	242.7
145°	305.5	308.2	318.8	329.4	318.8	308.2	305.5	287.4	263.2	251.1	242.7
147.5°	293.9	296.1	304.8	313.7	304.8	296.1	293.9	279.6	260.6	251.1	244.4
150°	287.2	289.0	296.2	303.3	296.2	289.0	287.2	275.2	259.1	251.1	245.2
152.5°	281.9	283.3	288.7	294.0	288.7	283.3	281.9	271.6	257.9	251.1	245.8
155°	275.6	276.5	280.1	283.6	280.1	276.5	275.6	267.4	256.5	251.1	247.1
157.5°	270.2	270.8	273.3	275.8	273.3	270.8	270.2	263.8	255.3	251.1	248.3
160°	267.4	267.8	269.2	270.7	269.2	267.8	267.4	262.0	254.7	251.1	248.9
162.5°	264.9	265.2	266.6	268.0	266.6	265.2	264.9	260.3	254.2	251.1	249.5
165°	261.0	261.3	262.8	264.2	262.8	261.3	261.0	257.6	253.3	251.1	250.4
167.5°	259.3	259.4	260.0	260.6	260.0	259.4	259.3	257.1	254.2	252.8	252.2
170°	259.3	259.3	259.3	259.3	259.3	259.3	259.3	257.1	254.2	252.8	252.8
172.5°	257.9	257.7	257.2	256.7	257.2	257.7	257.9	256.2	253.9	252.8	252.8
175°	256.0	256.0	256.0	256.0	256.0	256.0	256.0	254.9	253.5	252.8	253.1
177.5°	255.7	255.5	254.9	254.3	254.9	255.5	255.7	254.8	253.7	253.1	253.4
180°	254.3	254.3	254.3	254.3	254.3	254.3	254.3	254.3	254.3	254.3	254.3



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CANDELA DISTRIBUTION (continued):

	330°	337.5°	340°	350°	360°
0°	1208.0	1208.0	1208.0	1208.0	1208.0
2.5°	1193.1	1198.8	1202.3	1206.8	1218.2
5°	1147.4	1169.1	1175.9	1193.1	1213.7
7.5°	1046.8	1113.1	1131.4	1172.5	1204.5
10°	949.6	1015.9	1048.0	1145.1	1193.1
12.5°	900.5	939.4	961.1	1097.1	1177.0
15°	869.6	897.1	913.1	1033.0	1158.8
17.5°	845.7	865.1	876.5	970.3	1133.7
20°	830.8	840.0	850.2	924.5	1105.0
22.5°	820.6	814.9	822.8	892.6	1066.2
25°	813.7	791.9	801.1	867.4	1020.5
27.5°	819.4	771.4	774.8	844.5	972.6
30°	820.6	746.3	747.4	820.6	918.8
32.5°	812.6	719.9	721.1	790.8	858.2
35°	793.1	689.1	688.0	756.5	775.9
37.5°	766.8	656.0	656.0	718.8	685.7
40°	734.8	622.8	626.2	669.7	605.7
42.5°	696.0	587.4	592.0	604.6	546.2
45°	653.7	553.1	556.5	510.9	500.6
47.5°	606.8	517.7	518.9	424.0	485.7
50°	550.8	481.1	476.5	363.4	484.5
52.5°	501.7	441.1	427.4	329.1	440.0
55°	453.7	398.8	369.1	302.8	407.9
57.5°	411.4	344.0	315.4	272.0	401.1
60°	372.6	290.3	268.6	238.8	368.0
62.5°	340.5	250.2	245.7	216.0	333.7
65°	306.3	222.9	221.7	196.6	283.4
67.5°	273.2	204.6	203.5	178.2	216.0
70°	237.7	185.1	182.8	158.8	160.0
72.5°	201.2	163.4	161.1	142.9	132.6
75°	164.5	138.3	137.2	124.6	107.4
77.5°	129.2	109.7	112.0	100.5	78.9
80°	92.5	80.0	82.3	72.0	59.4
82.5°	61.7	52.6	54.9	45.8	40.0
85°	34.3	29.7	30.8	24.0	18.3
87.5°	16.0	13.7	13.7	9.1	5.7
90°	7.5	4.8	4.4	3.1	1.7
92.5°	46.3	33.0	30.1	18.4	6.8
95°	113.9	64.2	58.9	37.6	16.4
97.5°	153.4	70.5	65.8	47.1	28.4
100°	167.8	75.7	71.5	54.5	37.6
102.5°	174.5	81.0	77.1	61.3	45.4
105°	179.4	88.9	85.6	72.2	58.7
107.5°	180.3	100.5	97.4	84.9	72.3
110°	178.9	107.0	104.2	92.9	81.6



TEST NUMBER: P933872

CATALOG NUMBER: SQ4-FA-025U-050D-935-1D-UNV-STD-W-8

CANDELA DISTRIBUTION (continued):

	330°	337.5°	340°	350°	360°
112.5°	179.0	114.8	112.1	101.4	90.7
115°	180.6	126.6	124.1	114.2	104.3
117.5°	184.0	138.1	135.8	126.8	117.7
120°	186.8	144.8	142.6	134.1	125.6
122.5°	190.7	152.6	150.5	141.9	133.3
125°	196.0	162.6	160.7	152.9	145.1
127.5°	201.2	172.4	170.4	162.5	154.6
130°	205.1	178.8	176.7	168.3	159.8
132.5°	208.2	184.1	182.0	173.6	165.0
135°	211.6	190.3	188.4	180.6	172.9
137.5°	216.7	198.2	196.2	188.5	180.9
140°	219.9	203.5	201.7	194.6	187.5
142.5°	222.5	207.4	205.8	199.2	192.7
145°	226.0	213.3	211.9	206.3	200.6
147.5°	230.9	220.8	219.5	213.9	208.4
150°	233.5	224.8	223.5	218.5	213.5
152.5°	235.2	227.3	226.4	222.5	218.8
155°	239.0	232.9	232.3	229.4	226.6
157.5°	242.7	238.6	237.9	235.2	232.4
160°	244.4	241.1	240.6	238.5	236.3
162.5°	246.2	243.8	243.4	241.9	240.3
165°	249.0	247.8	247.5	246.1	244.6
167.5°	251.0	250.1	249.9	249.2	248.5
170°	252.7	252.6	252.4	251.8	251.1
172.5°	252.8	252.8	252.8	252.6	252.4
175°	253.8	254.3	254.3	254.3	254.3
177.5°	253.9	254.3	254.3	254.3	254.3
180°	254.3	254.3	254.3	254.3	254.3



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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	12.12	13.14	12.93	13.97	15.00	14.95	15.97	15.77	16.81	17.84
	3H	12.61	13.52	13.43	14.36	15.42	16.31	17.23	17.14	18.07	19.13
	4H	12.80	13.67	13.65	14.52	15.59	16.77	17.63	17.61	18.48	19.55
	6H	12.93	13.73	13.78	14.59	15.67	17.06	17.86	17.92	18.72	19.80
	8H	12.94	13.70	13.80	14.57	15.66	17.14	17.90	18.01	18.78	19.86
	12H	12.91	13.64	13.78	14.51	15.62	17.19	17.91	18.06	18.78	19.89
4H	2H	13.17	14.03	14.02	14.89	15.96	15.38	16.25	16.23	17.10	18.17
	3H	14.21	14.93	15.07	15.82	16.90	16.91	17.63	17.76	18.51	19.60
	4H	14.50	15.15	15.37	16.03	17.14	17.44	18.10	18.31	18.98	20.09
	6H	14.63	15.20	15.52	16.10	17.22	17.82	18.38	18.70	19.29	20.41
	8H	14.64	15.17	15.53	16.07	17.20	17.93	18.46	18.82	19.36	20.49
	12H	14.61	15.09	15.52	16.01	17.14	18.00	18.47	18.90	19.39	20.53
8H	4H	14.96	15.49	15.85	16.39	17.52	17.58	18.11	18.47	19.01	20.14
	6H	15.23	15.67	16.15	16.61	17.74	18.02	18.46	18.94	19.40	20.53
	8H	15.28	15.66	16.20	16.60	17.74	18.18	18.57	19.10	19.50	20.65
	12H	15.27	15.61	16.20	16.53	17.73	18.29	18.63	19.22	19.55	20.75
12H	4H	14.98	15.45	15.89	16.37	17.51	17.55	18.03	18.46	18.95	20.08
	6H	15.29	15.68	16.22	16.62	17.76	18.02	18.41	18.95	19.35	20.49
	8H	15.37	15.71	16.30	16.64	17.83	18.19	18.53	19.12	19.46	20.66