

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: FAIL-SAFE

Report Number: P392662

Luminaire Tested: **MWL-4-34-45-UNV-L935-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392662
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-1 &
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-4-34-45-UNV-L935-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

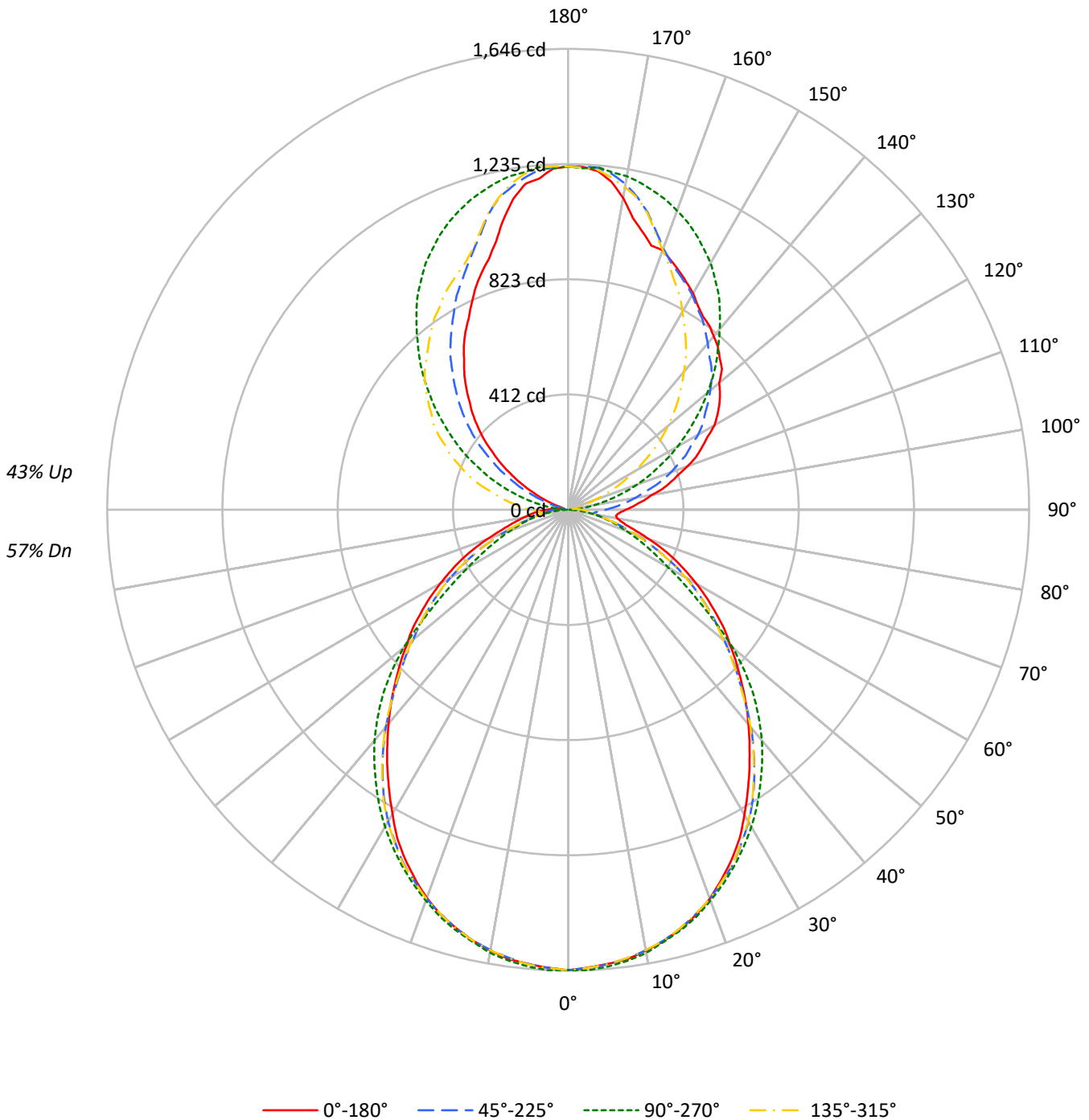
Lumens per Lamp: N/A
Luminaire Lumens: 6769.4 lumens
Efficiency: N/A
Efficacy: 84.4 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 80.194
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: 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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	57
1	99	95	91	88	92	89	85	82	77	74	72	65	64	62	55	54	53	48
2	91	83	77	72	84	78	73	68	68	64	60	58	55	52	49	47	45	41
3	83	74	66	61	77	69	63	57	60	55	51	52	48	45	44	41	39	35
4	76	66	58	52	71	61	54	49	53	48	44	46	42	39	39	36	34	30
5	70	59	51	45	65	55	48	42	48	42	38	42	37	34	36	32	30	27
6	65	53	45	39	60	50	42	37	43	38	33	38	33	30	32	29	26	23
7	60	48	40	34	56	45	38	33	40	34	30	34	30	26	30	26	23	21
8	56	43	36	30	52	41	34	29	36	30	26	32	27	24	27	24	21	19
9	52	40	32	27	48	38	31	26	33	28	24	29	25	21	25	22	19	17
10	49	37	29	25	45	35	28	24	31	25	21	27	23	19	24	20	17	16

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	10621	10621	10621	10621
5°	10462	9764	10462	9764
10°	10296	8960	10296	8960
15°	10080	8198	10063	8198
20°	9790	7488	9772	7488
25°	9378	6822	9361	6822
30°	8854	6184	8830	6184
35°	8290	5546	8270	5546
40°	7760	4934	7733	4934
45°	7240	4276	7220	4276
50°	6754	3515	6732	3515
55°	6301	2627	6285	2627
60°	5782	1945	5773	1945
65°	5234	1479	5234	1479
70°	4495	1107	4509	1107
75°	3885	800	3933	800
80°	4155	511	3771	511
85°	5984	238	4083	238



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	154.9	2.3
10°-20°	436.9	6.5
20°-30°	640.5	9.5
30°-40°	725.0	10.7
40°-50°	683.0	10.1
50°-60°	545.5	8.1
60°-70°	358.6	5.3
70°-80°	183.7	2.7
80°-90°	99.1	1.5
90°-100°	110.9	1.6
100°-110°	191.9	2.8
110°-120°	326.2	4.8
120°-130°	442.9	6.5
130°-140°	505.0	7.5
140°-150°	503.6	7.4
150°-160°	438.5	6.5
160°-170°	308.4	4.6
170°-180°	114.9	1.7
0°-30°	1232.3	18.2
0°-40°	1957.3	28.9
0°-60°	3185.8	47.1
0°-90°	3827.1	56.5
90°-120°	629.0	9.3
90°-150°	2080.5	30.7
90°-180°	2942.0	43.5
0°-180°	6769.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1644	1644	1644	1644	1644	
5°	1628	1638	1628	1638	1628	155
15°	1550	1555	1547	1555	1550	437
25°	1380	1404	1377	1404	1380	634
35°	1128	1196	1126	1196	1128	706
45°	875	936	873	936	875	677
55°	643	567	641	567	643	576
65°	419	304	419	304	419	413
75°	216	152	219	152	216	239
85°	177	40	121	40	177	145
90°	205	2	76	2	205	113
95°	250	36	45	36	250	216
105°	379	171	14	171	379	399
115°	527	350	122	350	527	523
125°	659	548	300	548	659	589
135°	766	748	482	748	766	591
145°	841	937	648	937	841	530
155°	939	1083	815	1083	939	433
165°	1027	1178	993	1178	1027	291
175°	1214	1228	1188	1228	1214	113
180°	1226	1226	1226	1226	1226	



TEST NUMBER: P392662

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1644.5	1644.5	1644.5	1644.5	1644.5	1644.5	1644.5	1644.5	1644.5	1644.5	1644.5
2.5°	1636.9	1642.0	1637.9	1647.2	1646.3	1646.3	1637.9	1642.0	1637.8	1642.0	1637.9
5°	1628.5	1633.6	1630.2	1637.0	1637.9	1637.0	1629.3	1633.6	1628.5	1633.6	1629.3
7.5°	1619.1	1619.9	1615.7	1625.1	1625.1	1624.2	1614.8	1619.1	1619.1	1619.1	1614.8
10°	1598.8	1602.1	1597.9	1607.2	1607.2	1606.4	1597.1	1600.4	1598.8	1600.4	1597.1
12.5°	1577.6	1578.4	1575.8	1583.5	1580.1	1583.5	1575.8	1576.7	1575.8	1576.7	1575.8
15°	1549.7	1548.7	1547.9	1556.3	1554.7	1555.5	1547.0	1547.0	1547.0	1547.0	1547.0
17.5°	1518.3	1517.3	1514.8	1523.3	1524.1	1523.3	1514.0	1516.5	1515.7	1516.5	1514.0
20°	1478.4	1477.5	1479.2	1486.0	1486.0	1485.1	1478.3	1475.8	1475.8	1475.8	1478.3
22.5°	1430.1	1435.2	1436.7	1446.9	1446.1	1446.1	1436.0	1433.4	1428.3	1433.4	1436.0
25°	1380.0	1386.0	1395.2	1403.7	1403.7	1402.8	1393.5	1383.3	1377.4	1383.3	1393.5
27.5°	1324.9	1331.7	1340.9	1358.7	1357.1	1357.9	1339.2	1329.0	1322.3	1329.0	1339.2
30°	1258.7	1268.9	1288.4	1307.0	1307.9	1305.3	1285.8	1266.3	1255.3	1266.3	1285.8
32.5°	1192.6	1202.8	1226.5	1251.0	1255.3	1249.3	1223.9	1199.3	1189.2	1199.3	1223.9
35°	1128.1	1134.9	1158.6	1193.4	1195.9	1190.8	1156.0	1132.3	1125.5	1132.3	1156.0
37.5°	1063.6	1065.3	1088.2	1129.8	1137.4	1127.2	1085.6	1062.7	1061.0	1062.7	1085.6
40°	1000.9	996.6	1016.2	1058.5	1076.3	1056.8	1012.7	993.2	997.4	993.2	1012.7
42.5°	939.8	930.5	937.2	988.1	1006.7	986.5	934.7	927.1	936.4	927.1	934.7
45°	875.3	864.3	864.3	910.1	936.4	908.4	860.8	861.8	872.8	861.8	860.8
47.5°	816.0	802.4	796.5	834.6	855.8	833.7	793.0	799.8	813.5	799.8	793.0
50°	755.7	744.7	727.8	750.6	766.8	749.0	724.3	741.2	753.2	741.2	724.3
52.5°	704.0	688.8	665.8	673.5	663.3	671.8	663.2	685.2	701.5	685.2	663.2
55°	642.9	634.5	605.7	597.1	566.6	595.4	603.0	631.8	641.2	631.8	603.0
57.5°	586.9	581.9	545.4	514.0	485.2	512.2	542.8	579.3	585.3	579.3	542.8
60°	528.4	525.9	486.9	439.4	411.4	438.4	485.1	524.1	527.6	524.1	485.1
62.5°	471.7	468.2	425.0	368.2	356.2	367.3	423.2	466.5	470.8	466.5	423.2
65°	419.0	409.7	364.7	307.1	304.4	306.2	363.8	408.8	419.0	408.8	363.8
67.5°	362.2	347.8	305.4	256.1	260.3	256.1	304.4	346.9	362.2	346.9	304.4
70°	306.2	287.5	253.6	212.9	219.7	212.9	253.6	288.5	307.1	288.5	253.6
72.5°	256.1	235.0	204.4	173.9	184.1	173.0	204.4	235.8	257.9	235.8	204.4
75°	216.2	191.7	160.3	138.2	151.8	138.2	161.1	192.6	218.9	192.6	161.1
77.5°	192.7	158.7	123.0	106.8	122.1	106.8	123.8	156.1	189.2	156.1	123.8
80°	177.7	144.5	100.2	79.7	91.6	79.7	98.4	130.7	161.3	130.7	98.4
82.5°	172.1	139.8	92.7	56.9	64.5	56.9	82.3	108.6	139.4	108.6	82.3
85°	176.9	150.5	99.1	46.8	39.9	45.0	74.0	97.7	120.7	97.7	74.0
87.5°	188.6	167.2	111.3	50.4	13.5	38.2	62.0	84.2	99.5	84.2	62.0
90°	205.3	189.1	133.2	58.3	1.7	25.5	47.5	67.0	75.6	67.0	47.5
92.5°	228.2	215.2	156.7	75.8	14.7	16.1	38.2	55.2	58.6	55.2	38.2
95°	250.0	245.7	184.7	95.1	35.5	8.5	28.9	45.0	45.0	45.0	28.9
97.5°	277.9	274.5	212.4	121.9	62.2	11.2	21.3	36.6	35.7	36.6	21.3
100°	303.2	301.4	242.9	159.2	95.2	29.4	13.6	29.9	30.7	29.9	13.6
102.5°	344.8	332.0	273.4	194.7	130.6	54.4	15.5	20.5	23.0	20.5	15.5
105°	378.7	364.1	314.8	231.8	171.2	88.2	35.5	16.3	14.5	16.3	35.5
107.5°	410.8	401.3	352.9	270.7	214.5	128.0	64.9	34.5	23.3	34.5	64.9
110°	453.2	442.8	390.1	308.8	260.3	169.6	98.5	62.2	48.4	62.2	98.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	494.8	487.0	424.7	348.6	307.1	214.5	140.1	96.8	83.9	96.8	140.1
115°	526.7	522.4	464.5	385.8	350.3	265.5	186.0	137.5	121.9	137.5	186.0
117.5°	560.5	559.7	493.9	423.8	402.3	311.4	228.3	178.2	161.7	178.2	228.3
120°	602.9	596.0	535.4	461.9	451.6	359.8	275.9	224.9	208.5	224.9	275.9
122.5°	632.2	627.9	570.0	498.2	498.2	409.1	320.9	269.8	252.6	269.8	320.9
125°	659.2	657.4	596.0	534.6	548.4	455.0	371.0	319.1	300.1	319.1	371.0
127.5°	683.3	685.9	629.7	575.2	599.5	502.5	420.4	363.3	343.4	363.3	420.4
130°	704.1	712.8	661.7	611.5	647.9	553.6	464.5	407.5	394.4	407.5	464.5
132.5°	744.7	739.5	694.6	648.7	699.8	600.3	511.2	451.6	436.8	451.6	511.2
135°	765.5	767.3	723.1	680.7	748.2	647.0	555.4	496.5	481.8	496.5	555.4
137.5°	790.6	785.4	745.6	719.7	793.3	692.0	598.6	544.1	520.8	544.1	598.6
140°	808.7	807.9	775.0	754.3	841.7	736.1	642.7	587.3	565.7	587.3	642.7
142.5°	827.9	833.0	804.4	792.3	890.1	782.8	690.2	629.7	608.9	629.7	690.2
145°	840.8	852.0	833.8	839.9	936.9	834.7	731.7	670.3	647.9	670.3	731.7
147.5°	862.5	877.1	855.5	873.6	975.8	880.6	773.3	712.8	692.8	712.8	773.3
150°	891.8	898.7	885.8	920.4	1017.2	931.7	815.7	753.4	733.6	753.4	815.7
152.5°	915.2	923.8	909.1	971.5	1049.3	978.3	862.5	793.3	769.8	793.3	862.5
155°	939.4	942.8	932.4	1020.7	1083.0	1024.2	899.6	837.4	814.8	837.4	899.6
157.5°	962.0	968.8	956.7	1057.9	1112.4	1064.0	942.0	881.5	861.5	881.5	942.0
160°	986.1	986.1	993.0	1101.1	1136.6	1098.6	986.9	929.9	902.2	929.9	986.9
162.5°	988.7	1005.2	1042.3	1131.4	1159.9	1128.8	1035.5	964.5	940.3	964.5	1035.5
165°	1026.8	1041.4	1097.7	1158.3	1178.2	1155.6	1095.1	1021.5	993.0	1021.5	1095.1
167.5°	1066.5	1097.7	1142.7	1188.6	1195.5	1180.7	1140.9	1089.9	1064.0	1089.9	1140.9
170°	1130.6	1158.3	1180.7	1199.8	1209.3	1200.6	1169.6	1144.5	1127.1	1144.5	1169.6
172.5°	1181.7	1199.8	1208.5	1220.5	1215.3	1211.0	1195.5	1183.4	1173.9	1183.4	1195.5
175°	1213.7	1218.0	1225.7	1221.4	1227.5	1217.1	1218.0	1224.0	1187.7	1224.0	1218.0
177.5°	1224.9	1231.8	1227.5	1219.6	1220.5	1218.8	1222.3	1225.7	1219.6	1225.7	1222.3
180°	1225.7	1225.7	1225.7	1225.7	1225.7	1225.7	1225.7	1225.7	1225.7	1225.7	1225.7



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CATALOG NUMBER: MWL-4-34-45-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1644.5	1644.5	1644.5	1644.5	1644.5	1644.5
2.5°	1646.3	1646.3	1647.2	1637.9	1642.0	1636.9
5°	1637.0	1637.9	1637.0	1630.2	1633.6	1628.5
7.5°	1624.2	1625.1	1625.1	1615.7	1619.9	1619.1
10°	1606.4	1607.2	1607.2	1597.9	1602.1	1598.8
12.5°	1583.5	1580.1	1583.5	1575.8	1578.4	1577.6
15°	1555.5	1554.7	1556.3	1547.9	1548.7	1549.7
17.5°	1523.3	1524.1	1523.3	1514.8	1517.3	1518.3
20°	1485.1	1486.0	1486.0	1479.2	1477.5	1478.4
22.5°	1446.1	1446.1	1446.9	1436.7	1435.2	1430.1
25°	1402.8	1403.7	1403.7	1395.2	1386.0	1380.0
27.5°	1357.9	1357.1	1358.7	1340.9	1331.7	1324.9
30°	1305.3	1307.9	1307.0	1288.4	1268.9	1258.7
32.5°	1249.3	1255.3	1251.0	1226.5	1202.8	1192.6
35°	1190.8	1195.9	1193.4	1158.6	1134.9	1128.1
37.5°	1127.2	1137.4	1129.8	1088.2	1065.3	1063.6
40°	1056.8	1076.3	1058.5	1016.2	996.6	1000.9
42.5°	986.5	1006.7	988.1	937.2	930.5	939.8
45°	908.4	936.4	910.1	864.3	864.3	875.3
47.5°	833.7	855.8	834.6	796.5	802.4	816.0
50°	749.0	766.8	750.6	727.8	744.7	755.7
52.5°	671.8	663.3	673.5	665.8	688.8	704.0
55°	595.4	566.6	597.1	605.7	634.5	642.9
57.5°	512.2	485.2	514.0	545.4	581.9	586.9
60°	438.4	411.4	439.4	486.9	525.9	528.4
62.5°	367.3	356.2	368.2	425.0	468.2	471.7
65°	306.2	304.4	307.1	364.7	409.7	419.0
67.5°	256.1	260.3	256.1	305.4	347.8	362.2
70°	212.9	219.7	212.9	253.6	287.5	306.2
72.5°	173.0	184.1	173.9	204.4	235.0	256.1
75°	138.2	151.8	138.2	160.3	191.7	216.2
77.5°	106.8	122.1	106.8	123.0	158.7	192.7
80°	79.7	91.6	79.7	100.2	144.5	177.7
82.5°	56.9	64.5	56.9	92.7	139.8	172.1
85°	45.0	39.9	46.8	99.1	150.5	176.9
87.5°	38.2	13.5	50.4	111.3	167.2	188.6
90°	25.5	1.7	58.3	133.2	189.1	205.3
92.5°	16.1	14.7	75.8	156.7	215.2	228.2
95°	8.5	35.5	95.1	184.7	245.7	250.0
97.5°	11.2	62.2	121.9	212.4	274.5	277.9
100°	29.4	95.2	159.2	242.9	301.4	303.2
102.5°	54.4	130.6	194.7	273.4	332.0	344.8
105°	88.2	171.2	231.8	314.8	364.1	378.7
107.5°	128.0	214.5	270.7	352.9	401.3	410.8
110°	169.6	260.3	308.8	390.1	442.8	453.2



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CATALOG NUMBER: MWL-4-34-45-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	214.5	307.1	348.6	424.7	487.0	494.8
115°	265.5	350.3	385.8	464.5	522.4	526.7
117.5°	311.4	402.3	423.8	493.9	559.7	560.5
120°	359.8	451.6	461.9	535.4	596.0	602.9
122.5°	409.1	498.2	498.2	570.0	627.9	632.2
125°	455.0	548.4	534.6	596.0	657.4	659.2
127.5°	502.5	599.5	575.2	629.7	685.9	683.3
130°	553.6	647.9	611.5	661.7	712.8	704.1
132.5°	600.3	699.8	648.7	694.6	739.5	744.7
135°	647.0	748.2	680.7	723.1	767.3	765.5
137.5°	692.0	793.3	719.7	745.6	785.4	790.6
140°	736.1	841.7	754.3	775.0	807.9	808.7
142.5°	782.8	890.1	792.3	804.4	833.0	827.9
145°	834.7	936.9	839.9	833.8	852.0	840.8
147.5°	880.6	975.8	873.6	855.5	877.1	862.5
150°	931.7	1017.2	920.4	885.8	898.7	891.8
152.5°	978.3	1049.3	971.5	909.1	923.8	915.2
155°	1024.2	1083.0	1020.7	932.4	942.8	939.4
157.5°	1064.0	1112.4	1057.9	956.7	968.8	962.0
160°	1098.6	1136.6	1101.1	993.0	986.1	986.1
162.5°	1128.8	1159.9	1131.4	1042.3	1005.2	988.7
165°	1155.6	1178.2	1158.3	1097.7	1041.4	1026.8
167.5°	1180.7	1195.5	1188.6	1142.7	1097.7	1066.5
170°	1200.6	1209.3	1199.8	1180.7	1158.3	1130.6
172.5°	1211.0	1215.3	1220.5	1208.5	1199.8	1181.7
175°	1217.1	1227.5	1221.4	1225.7	1218.0	1213.7
177.5°	1218.8	1220.5	1219.6	1227.5	1231.8	1224.9
180°	1225.7	1225.7	1225.7	1225.7	1225.7	1225.7

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