

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: P392583

Luminaire Tested: **MWL-3-30-33-UNV-L930-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392583  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-13 &  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MWL-3-30-33-UNV-L930-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

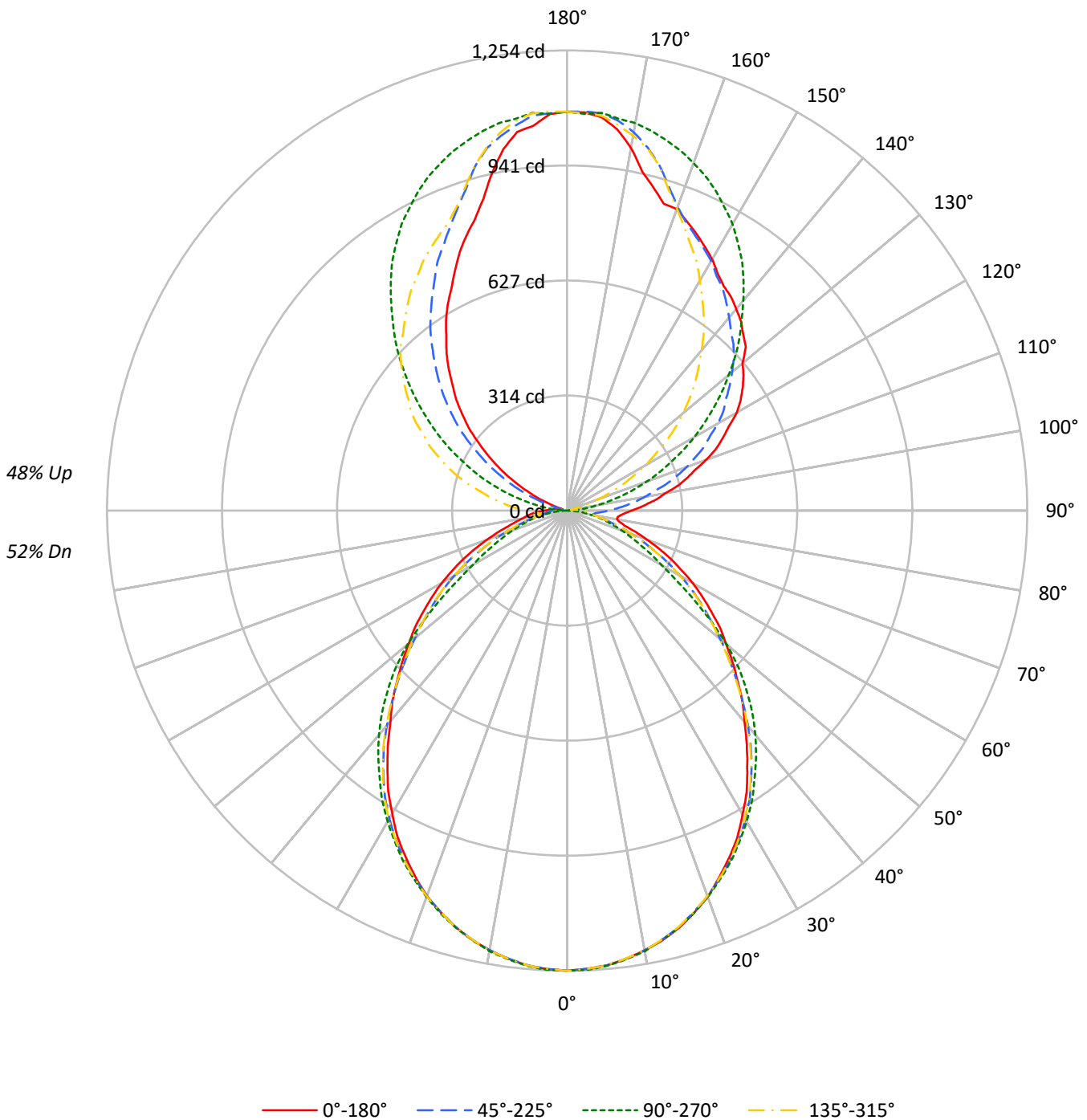
Lumens per Lamp: N/A  
Luminaire Lumens: 5475.8 lumens  
Efficiency: N/A  
Efficacy: 84.7 lumens/watt  
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')  
CIE Type: General Diffuse

Input Watts (W): 64.64  
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



TEST NUMBER: P392583  
CATALOG NUMBER: MWL-3-30-33-UNV-L930-EDD

### 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	0
RCR																		
0	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50	44
2	90	83	77	72	83	77	72	67	66	62	58	55	53	50	46	44	42	38
3	82	73	66	60	76	68	62	56	58	53	50	49	46	43	41	39	36	32
4	75	65	57	51	70	60	54	48	52	47	43	44	40	37	37	34	32	28
5	69	58	50	44	64	54	47	42	47	41	37	40	36	32	34	30	28	25
6	64	52	44	38	59	49	42	36	42	37	32	36	32	29	31	27	25	22
7	59	47	39	34	55	44	37	32	38	33	29	33	29	25	28	25	22	20
8	55	43	35	30	51	40	33	29	35	30	26	30	26	23	26	22	20	18
9	51	39	32	27	48	37	30	26	32	27	23	28	24	21	24	20	18	16
10	48	36	29	24	45	34	27	23	30	24	21	26	22	19	22	19	16	15

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

	0°	90°	180°	270°
0°	10796	10796	10796	10796
5°	10622	9898	10622	9898
10°	10383	9062	10383	9062
15°	10121	8269	10100	8269
20°	9770	7527	9749	7527
25°	9316	6838	9295	6838
30°	8801	6168	8773	6168
35°	8198	5505	8175	5505
40°	7568	4879	7537	4879
45°	7025	4207	7001	4207
50°	6493	3464	6467	3464
55°	5998	2590	5978	2590
60°	5486	1879	5477	1879
65°	4892	1412	4892	1412
70°	4217	1067	4231	1067
75°	3609	772	3657	772
80°	3834	496	3429	496
85°	5567	214	3662	214



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	117.9	2.2
10°-20°	331.0	6.0
20°-30°	483.0	8.8
30°-40°	545.9	10.0
40°-50°	510.5	9.3
50°-60°	403.0	7.4
60°-70°	263.5	4.8
70°-80°	137.3	2.5
80°-90°	78.1	1.4
90°-100°	96.1	1.8
100°-110°	170.0	3.1
110°-120°	289.0	5.3
120°-130°	392.6	7.2
130°-140°	447.6	8.2
140°-150°	446.4	8.2
150°-160°	388.7	7.1
160°-170°	273.4	5.0
170°-180°	101.8	1.9
0°-30°	931.9	17.0
0°-40°	1477.8	27.0
0°-60°	2391.2	43.7
0°-90°	2870.1	52.4
90°-120°	555.1	10.1
90°-150°	1841.7	33.6
90°-180°	2606.0	47.6
0°-180°	5475.8	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1254	1254	1254	1254	1254	
5°	1244	1245	1244	1245	1244	118
15°	1178	1176	1175	1176	1178	331
25°	1044	1055	1042	1055	1044	480
35°	856	890	853	890	856	535
45°	657	691	655	691	657	508
55°	479	419	477	419	479	429
65°	312	218	312	218	312	308
75°	165	110	167	110	165	183
85°	146	27	96	27	146	118
90°	175	2	60	2	175	97
95°	221	32	39	32	221	192
105°	336	152	13	152	336	355
115°	468	310	108	310	468	464
125°	584	487	266	487	584	522
135°	678	664	427	664	678	524
145°	745	830	574	830	745	470
155°	833	960	722	960	833	384
165°	910	1044	880	1044	910	258
175°	1076	1088	1053	1088	1076	100
180°	1087	1087	1087	1087	1087	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1253.7	1253.7	1253.7	1253.7	1253.7	1253.7	1253.7	1253.7	1253.7	1253.7	1253.7
2.5°	1249.7	1252.1	1250.2	1251.0	1252.7	1250.2	1250.2	1252.1	1250.4	1252.1	1250.2
5°	1243.8	1245.3	1244.3	1244.3	1245.2	1244.3	1243.6	1245.3	1243.8	1245.3	1243.6
7.5°	1231.8	1234.3	1231.7	1233.3	1233.3	1232.6	1230.9	1233.4	1231.8	1233.4	1230.9
10°	1216.5	1219.1	1217.4	1217.4	1219.1	1216.5	1216.5	1217.5	1216.5	1217.5	1216.5
12.5°	1199.6	1199.7	1197.1	1198.8	1198.0	1198.8	1197.1	1198.0	1197.9	1198.0	1197.1
15°	1177.5	1176.0	1175.1	1176.0	1176.1	1175.2	1174.4	1174.4	1175.1	1174.4	1174.4
17.5°	1149.6	1150.6	1147.2	1149.8	1149.8	1149.8	1146.5	1149.8	1147.2	1149.8	1146.5
20°	1120.0	1119.3	1118.5	1120.3	1120.3	1119.6	1117.7	1117.6	1117.6	1117.6	1117.7
22.5°	1082.0	1084.6	1085.6	1089.0	1088.2	1088.2	1084.8	1083.0	1080.5	1083.0	1084.8
25°	1044.0	1048.2	1050.9	1056.1	1055.3	1055.3	1049.3	1045.9	1041.6	1045.9	1049.3
27.5°	1004.3	1005.2	1012.8	1020.5	1017.2	1019.7	1011.3	1002.8	1001.9	1002.8	1011.3
30°	956.1	960.4	971.4	979.9	978.4	978.3	969.0	958.0	953.1	958.0	969.0
32.5°	910.5	912.2	926.6	936.8	937.7	935.2	924.2	909.0	907.4	909.0	924.2
35°	855.7	859.9	875.1	892.8	890.4	890.4	872.8	857.5	853.3	857.5	872.8
37.5°	804.1	806.6	823.5	845.5	845.6	843.2	821.2	804.2	801.7	804.2	821.2
40°	751.7	750.9	766.9	791.4	798.3	789.9	763.7	747.7	748.6	747.7	763.7
42.5°	707.7	697.6	708.6	735.7	746.8	734.1	706.3	694.5	704.7	694.5	706.3
45°	657.0	646.9	652.8	678.2	690.9	676.7	649.8	644.6	654.7	644.6	649.8
47.5°	611.4	598.7	597.9	616.5	634.3	615.8	594.9	596.5	609.1	596.5	594.9
50°	564.9	553.0	544.6	557.4	566.8	555.9	541.6	550.0	562.6	550.0	541.6
52.5°	525.2	509.1	494.8	498.2	491.6	496.7	492.6	506.1	522.9	506.1	492.6
55°	478.8	468.7	448.4	437.4	418.9	435.9	446.1	466.4	477.2	466.4	446.1
57.5°	437.3	428.1	403.5	377.5	351.3	376.0	401.3	425.8	435.8	425.8	401.3
60°	395.2	385.9	356.3	318.4	298.0	317.6	354.8	384.4	394.5	384.4	354.8
62.5°	351.2	345.3	311.5	268.6	256.8	267.8	310.0	343.8	350.5	343.8	310.0
65°	311.6	301.5	266.8	225.4	217.9	224.6	266.1	300.7	311.6	300.7	266.1
67.5°	271.0	258.3	225.4	187.5	186.6	187.5	224.6	257.6	271.0	257.6	224.6
70°	231.4	217.0	186.6	155.3	158.8	155.3	186.6	217.8	232.2	217.8	186.6
72.5°	196.8	177.3	152.8	127.4	130.9	126.7	152.8	178.0	198.3	178.0	152.8
75°	164.7	142.6	121.6	102.1	109.8	102.1	122.4	143.4	166.9	143.4	122.4
77.5°	147.1	119.5	93.8	80.2	87.8	80.2	94.5	117.2	144.0	117.2	94.5
80°	138.2	110.1	75.7	61.6	66.7	61.6	74.2	97.7	123.6	97.7	74.2
82.5°	138.0	110.8	71.4	43.8	47.3	43.8	62.2	83.2	108.8	83.2	62.2
85°	145.8	122.0	78.2	35.1	26.9	33.6	55.9	75.2	95.9	75.2	55.9
87.5°	158.1	140.3	92.8	39.1	7.6	28.4	49.1	66.6	79.1	66.6	49.1
90°	175.4	161.0	112.8	48.4	1.6	19.3	36.9	52.7	60.3	52.7	36.9
92.5°	198.2	185.6	135.3	64.6	13.1	11.6	30.2	43.6	47.7	43.6	30.2
95°	221.4	215.1	161.6	82.3	31.5	5.5	23.4	37.0	39.4	37.0	23.4
97.5°	248.4	242.0	186.8	108.3	55.4	10.0	17.3	30.9	33.5	30.9	17.3
100°	270.7	266.5	214.7	141.3	84.5	26.2	11.4	25.6	29.0	25.6	11.4
102.5°	306.8	294.2	241.9	172.8	116.0	48.4	13.2	18.0	21.4	18.0	13.2
105°	336.0	321.1	279.5	205.7	152.1	78.4	31.6	12.6	13.0	12.6	31.6
107.5°	363.9	355.5	313.2	239.5	190.5	112.9	57.8	30.1	20.2	30.1	57.8
110°	402.3	392.3	346.3	273.2	230.3	149.7	87.6	54.6	43.1	54.6	87.6



TEST NUMBER: P392583

CATALOG NUMBER: MWL-3-30-33-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	439.2	431.4	376.9	308.6	271.7	189.7	124.5	85.3	74.7	85.3	124.5
115°	467.5	462.9	412.3	341.5	310.1	234.9	165.2	121.3	108.5	121.3	165.2
117.5°	496.6	495.9	438.3	375.4	356.2	275.5	202.8	157.4	142.9	157.4	202.8
120°	534.2	528.1	474.4	409.1	399.8	318.6	244.2	198.9	184.3	198.9	244.2
122.5°	560.4	556.6	505.1	442.2	442.2	363.1	284.0	238.9	223.5	238.9	284.0
125°	584.1	582.5	528.1	474.4	486.7	403.8	328.6	282.6	265.6	282.6	328.6
127.5°	605.6	607.9	558.1	509.7	531.9	445.3	372.3	321.6	304.0	321.6	372.3
130°	624.1	631.7	586.5	541.9	574.9	490.5	411.5	360.8	349.3	360.8	411.5
132.5°	660.1	655.5	615.6	574.9	620.9	531.9	452.9	399.9	386.9	399.9	452.9
135°	678.5	680.0	640.9	603.3	664.0	573.4	492.0	439.8	426.8	439.8	492.0
137.5°	700.7	696.2	660.8	637.8	703.9	613.3	530.4	482.1	461.4	482.1	530.4
140°	716.9	716.1	687.0	668.6	746.8	652.4	569.6	520.5	501.3	520.5	569.6
142.5°	733.8	738.3	713.0	702.4	789.8	693.9	611.8	558.1	539.7	558.1	611.8
145°	745.3	755.2	739.1	744.6	830.5	740.0	648.6	594.1	574.1	594.1	648.6
147.5°	764.5	777.5	758.3	774.4	865.8	780.6	685.5	631.7	614.1	631.7	685.5
150°	790.6	796.7	785.1	815.9	901.8	825.8	723.1	667.8	650.1	667.8	723.1
152.5°	811.3	819.0	805.8	861.1	930.2	867.3	764.5	703.1	682.4	703.1	764.5
155°	832.8	835.8	826.7	904.9	960.1	908.0	797.4	742.3	722.3	742.3	797.4
157.5°	852.7	858.8	848.1	937.9	986.2	943.3	835.1	781.4	763.7	781.4	835.1
160°	874.2	874.2	880.3	976.3	1007.7	974.0	875.0	824.3	799.8	824.3	875.0
162.5°	876.5	891.1	924.1	1003.2	1028.4	1000.9	917.9	855.0	833.5	855.0	917.9
165°	910.3	923.4	973.2	1026.9	1044.5	1024.6	970.8	905.7	880.3	905.7	970.8
167.5°	945.6	973.2	1013.1	1053.8	1059.9	1046.8	1011.6	966.3	943.3	966.3	1011.6
170°	1003.2	1026.9	1046.8	1063.7	1072.2	1064.5	1036.9	1014.6	1000.0	1014.6	1036.9
172.5°	1047.6	1063.7	1071.4	1082.1	1076.8	1073.7	1059.9	1049.2	1040.7	1049.2	1059.9
175°	1075.9	1079.8	1086.7	1082.9	1087.6	1079.1	1079.8	1085.2	1052.9	1085.2	1079.8
177.5°	1085.9	1092.2	1088.3	1081.4	1082.1	1080.6	1083.7	1086.7	1081.3	1086.7	1083.7
180°	1086.7	1086.7	1086.7	1086.7	1086.7	1086.7	1086.7	1086.7	1086.7	1086.7	1086.7



TEST NUMBER: P392583

CATALOG NUMBER: MWL-3-30-33-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1253.7	1253.7	1253.7	1253.7	1253.7	1253.7
2.5°	1250.2	1252.7	1251.0	1250.2	1252.1	1249.7
5°	1244.3	1245.2	1244.3	1244.3	1245.3	1243.8
7.5°	1232.6	1233.3	1233.3	1231.7	1234.3	1231.8
10°	1216.5	1219.1	1217.4	1217.4	1219.1	1216.5
12.5°	1198.8	1198.0	1198.8	1197.1	1199.7	1199.6
15°	1175.2	1176.1	1176.0	1175.1	1176.0	1177.5
17.5°	1149.8	1149.8	1149.8	1147.2	1150.6	1149.6
20°	1119.6	1120.3	1120.3	1118.5	1119.3	1120.0
22.5°	1088.2	1088.2	1089.0	1085.6	1084.6	1082.0
25°	1055.3	1055.3	1056.1	1050.9	1048.2	1044.0
27.5°	1019.7	1017.2	1020.5	1012.8	1005.2	1004.3
30°	978.3	978.4	979.9	971.4	960.4	956.1
32.5°	935.2	937.7	936.8	926.6	912.2	910.5
35°	890.4	890.4	892.8	875.1	859.9	855.7
37.5°	843.2	845.6	845.5	823.5	806.6	804.1
40°	789.9	798.3	791.4	766.9	750.9	751.7
42.5°	734.1	746.8	735.7	708.6	697.6	707.7
45°	676.7	690.9	678.2	652.8	646.9	657.0
47.5°	615.8	634.3	616.5	597.9	598.7	611.4
50°	555.9	566.8	557.4	544.6	553.0	564.9
52.5°	496.7	491.6	498.2	494.8	509.1	525.2
55°	435.9	418.9	437.4	448.4	468.7	478.8
57.5°	376.0	351.3	377.5	403.5	428.1	437.3
60°	317.6	298.0	318.4	356.3	385.9	395.2
62.5°	267.8	256.8	268.6	311.5	345.3	351.2
65°	224.6	217.9	225.4	266.8	301.5	311.6
67.5°	187.5	186.6	187.5	225.4	258.3	271.0
70°	155.3	158.8	155.3	186.6	217.0	231.4
72.5°	126.7	130.9	127.4	152.8	177.3	196.8
75°	102.1	109.8	102.1	121.6	142.6	164.7
77.5°	80.2	87.8	80.2	93.8	119.5	147.1
80°	61.6	66.7	61.6	75.7	110.1	138.2
82.5°	43.8	47.3	43.8	71.4	110.8	138.0
85°	33.6	26.9	35.1	78.2	122.0	145.8
87.5°	28.4	7.6	39.1	92.8	140.3	158.1
90°	19.3	1.6	48.4	112.8	161.0	175.4
92.5°	11.6	13.1	64.6	135.3	185.6	198.2
95°	5.5	31.5	82.3	161.6	215.1	221.4
97.5°	10.0	55.4	108.3	186.8	242.0	248.4
100°	26.2	84.5	141.3	214.7	266.5	270.7
102.5°	48.4	116.0	172.8	241.9	294.2	306.8
105°	78.4	152.1	205.7	279.5	321.1	336.0
107.5°	112.9	190.5	239.5	313.2	355.5	363.9
110°	149.7	230.3	273.2	346.3	392.3	402.3





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CATALOG NUMBER: MWL-3-30-33-UNV-L930-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	189.7	271.7	308.6	376.9	431.4	439.2
115°	234.9	310.1	341.5	412.3	462.9	467.5
117.5°	275.5	356.2	375.4	438.3	495.9	496.6
120°	318.6	399.8	409.1	474.4	528.1	534.2
122.5°	363.1	442.2	442.2	505.1	556.6	560.4
125°	403.8	486.7	474.4	528.1	582.5	584.1
127.5°	445.3	531.9	509.7	558.1	607.9	605.6
130°	490.5	574.9	541.9	586.5	631.7	624.1
132.5°	531.9	620.9	574.9	615.6	655.5	660.1
135°	573.4	664.0	603.3	640.9	680.0	678.5
137.5°	613.3	703.9	637.8	660.8	696.2	700.7
140°	652.4	746.8	668.6	687.0	716.1	716.9
142.5°	693.9	789.8	702.4	713.0	738.3	733.8
145°	740.0	830.5	744.6	739.1	755.2	745.3
147.5°	780.6	865.8	774.4	758.3	777.5	764.5
150°	825.8	901.8	815.9	785.1	796.7	790.6
152.5°	867.3	930.2	861.1	805.8	819.0	811.3
155°	908.0	960.1	904.9	826.7	835.8	832.8
157.5°	943.3	986.2	937.9	848.1	858.8	852.7
160°	974.0	1007.7	976.3	880.3	874.2	874.2
162.5°	1000.9	1028.4	1003.2	924.1	891.1	876.5
165°	1024.6	1044.5	1026.9	973.2	923.4	910.3
167.5°	1046.8	1059.9	1053.8	1013.1	973.2	945.6
170°	1064.5	1072.2	1063.7	1046.8	1026.9	1003.2
172.5°	1073.7	1076.8	1082.1	1071.4	1063.7	1047.6
175°	1079.1	1087.6	1082.9	1086.7	1079.8	1075.9
177.5°	1080.6	1082.1	1081.4	1088.3	1092.2	1085.9
180°	1086.7	1086.7	1086.7	1086.7	1086.7	1086.7

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