

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: P392592

Luminaire Tested: **MWL-3-37-25-UNV-L830-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392592  
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-3-37-25-UNV-L830-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

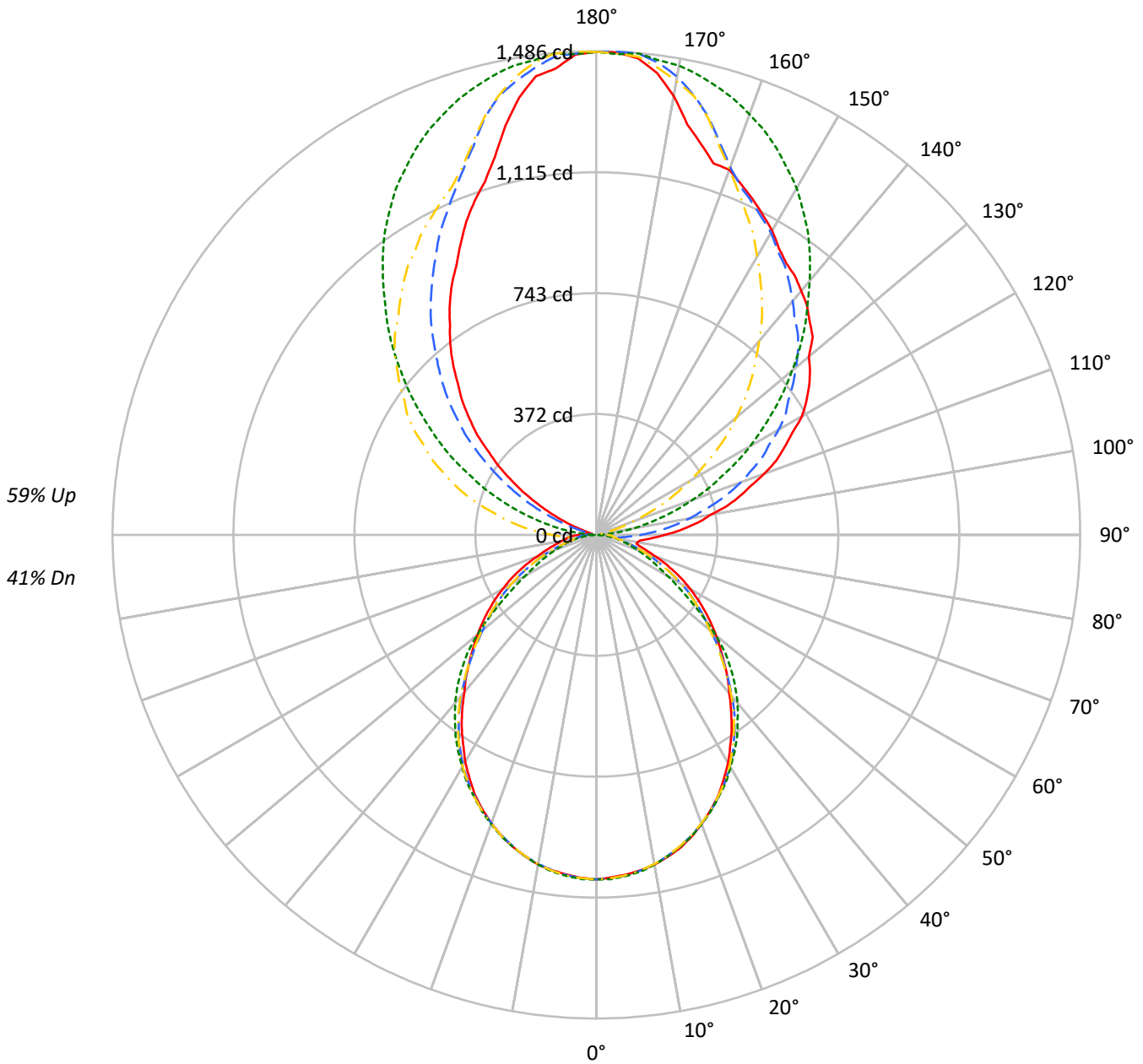
Lumens per Lamp: N/A  
Luminaire Lumens: 5978.0 lumens  
Efficiency: N/A  
Efficacy: 99.0 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.17 / 1.24  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')  
CIE Type: General Diffuse

Input Watts (W): 60.4  
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: P392592  
CATALOG NUMBER: MWL-3-37-25-UNV-L830-EDD

### Luminous Intensity Polar Plot



— 0°-180°    - - 45°-225°    - · - · 90°-270°    - · - · 135°-315°



TEST NUMBER: P392592

CATALOG NUMBER: MWL-3-37-25-UNV-L830-EDD

**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	105	105	105	105	96	96	96	96	78	78	78	62	62	62	48	48	48	41
1	96	92	88	84	87	84	80	77	69	66	64	55	53	52	42	41	40	34
2	87	80	74	69	79	73	68	64	60	57	54	48	46	44	37	36	34	29
3	80	71	64	58	73	65	59	54	53	49	45	43	40	37	33	31	30	25
4	73	63	55	49	66	58	51	46	48	43	39	39	35	32	30	28	26	22
5	67	56	48	42	61	51	44	39	43	38	34	35	31	28	27	25	23	19
6	62	50	42	37	56	46	39	34	39	33	29	31	28	25	25	22	20	17
7	57	45	38	32	52	42	35	30	35	30	26	29	25	22	23	20	18	15
8	53	41	34	28	48	38	31	27	32	27	23	26	22	20	21	18	16	14
9	50	38	30	25	45	35	28	24	29	24	21	24	20	18	19	17	15	12
10	46	34	27	23	42	32	26	21	27	22	19	22	19	16	18	15	13	11

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

	0°	90°	180°	270°
0°	9114	9114	9114	9114
5°	8948	8360	8948	8360
10°	8780	7647	8780	7647
15°	8555	6975	8528	6975
20°	8246	6355	8220	6355
25°	7895	5756	7868	5756
30°	7446	5194	7408	5194
35°	6940	4661	6910	4661
40°	6394	4122	6353	4122
45°	5929	3563	5895	3563
50°	5513	2919	5476	2919
55°	5081	2174	5055	2174
60°	4616	1594	4602	1594
65°	4104	1208	4104	1208
70°	3503	892	3521	892
75°	3055	648	3125	648
80°	3556	421	3001	421
85°	5919	184	3322	184



TEST NUMBER: P392592

CATALOG NUMBER: MWL-3-37-25-UNV-L830-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	99.6	1.7
10°-20°	279.4	4.7
20°-30°	407.9	6.8
30°-40°	460.8	7.7
40°-50°	431.3	7.2
50°-60°	340.5	5.7
60°-70°	222.7	3.7
70°-80°	116.5	1.9
80°-90°	76.6	1.3
90°-100°	119.8	2.0
100°-110°	230.0	3.8
110°-120°	394.2	6.6
120°-130°	535.4	9.0
130°-140°	610.8	10.2
140°-150°	609.4	10.2
150°-160°	530.7	8.9
160°-170°	373.4	6.2
170°-180°	139.1	2.3
0°-30°	786.8	13.2
0°-40°	1247.6	20.9
0°-60°	2019.4	33.8
0°-90°	2435.3	40.7
90°-120°	744.0	12.4
90°-150°	2499.7	41.8
90°-180°	3543.0	59.3
0°-180°	5978.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1058	1058	1058	1058	1058	
5°	1048	1052	1048	1052	1048	99
15°	995	992	992	992	995	280
25°	885	888	882	888	885	406
35°	724	754	721	754	724	452
45°	554	585	551	585	554	429
55°	406	352	404	352	406	363
65°	261	186	261	186	261	260
75°	139	92	143	92	139	156
85°	155	23	87	23	155	121
90°	210	1	52	1	210	116
95°	283	43	35	43	283	247
105°	454	207	13	207	454	479
115°	637	423	147	423	637	632
125°	798	664	363	664	798	712
135°	926	906	583	906	926	715
145°	1018	1133	784	1133	1018	642
155°	1137	1310	986	1310	1137	525
165°	1243	1426	1202	1426	1243	353
175°	1470	1485	1438	1485	1470	137
180°	1484	1484	1484	1484	1484	



TEST NUMBER: P392592

CATALOG NUMBER: MWL-3-37-25-UNV-L830-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1058.4	1058.4	1058.4	1058.4	1058.4	1058.4	1058.4	1058.4	1058.4	1058.4	1058.4
2.5°	1053.4	1057.5	1055.6	1057.7	1058.6	1056.6	1055.6	1057.5	1054.5	1057.5	1055.6
5°	1047.7	1051.7	1050.8	1050.8	1051.8	1050.8	1049.8	1051.7	1047.7	1051.7	1049.8
7.5°	1039.1	1042.1	1040.2	1042.2	1043.2	1041.1	1039.2	1041.1	1039.1	1041.1	1039.2
10°	1028.7	1028.7	1027.7	1028.7	1028.7	1027.7	1026.7	1026.7	1028.7	1026.7	1026.7
12.5°	1013.4	1011.4	1010.4	1012.3	1011.3	1012.3	1010.4	1009.4	1011.4	1009.4	1010.4
15°	995.3	993.1	991.2	993.1	992.1	992.1	990.2	991.1	992.2	991.1	990.2
17.5°	972.2	970.1	969.2	971.0	971.0	971.0	968.1	969.2	969.2	969.2	968.1
20°	945.3	946.2	944.2	947.0	945.9	945.9	943.1	944.2	942.3	944.2	943.1
22.5°	915.5	917.4	917.3	919.1	919.0	918.1	916.3	915.4	913.5	915.4	916.3
25°	884.8	883.8	887.6	891.3	888.3	890.2	885.5	880.7	881.7	880.7	885.5
27.5°	846.4	852.1	855.9	860.7	859.5	859.6	853.9	849.1	843.3	849.1	853.9
30°	808.9	811.8	821.4	827.1	824.0	825.1	818.3	808.7	804.8	808.7	818.3
32.5°	765.7	771.5	782.1	791.6	789.5	789.5	779.0	767.4	761.6	767.4	779.0
35°	724.4	726.3	739.7	753.2	753.9	750.1	736.7	723.2	721.3	723.2	736.7
37.5°	679.3	681.2	696.5	712.8	712.8	709.8	693.5	678.1	676.2	678.1	693.5
40°	635.1	636.1	648.5	669.7	674.4	667.5	644.4	631.9	631.0	631.9	644.4
42.5°	596.7	590.0	598.6	623.6	631.2	621.5	595.4	585.8	592.6	585.8	595.4
45°	554.5	546.8	551.6	574.6	585.1	572.5	547.4	543.6	551.3	543.6	547.4
47.5°	516.1	506.5	505.5	521.7	537.1	520.7	501.3	503.3	512.9	503.3	501.3
50°	479.6	468.1	459.4	470.8	477.5	468.7	455.2	463.8	476.4	463.8	455.2
52.5°	443.1	431.6	418.1	420.9	413.2	418.8	414.9	427.4	439.9	427.4	414.9
55°	405.6	396.0	379.7	370.0	351.6	367.8	376.5	392.8	403.5	392.8	376.5
57.5°	370.1	362.4	342.2	321.0	298.8	318.9	339.0	359.2	367.9	359.2	339.0
60°	332.5	328.7	301.8	271.0	252.8	269.9	299.7	326.6	331.5	326.6	299.7
62.5°	298.9	292.2	263.4	227.8	215.2	226.7	261.3	290.1	297.9	290.1	261.3
65°	261.4	256.6	224.0	192.3	186.4	191.2	222.9	255.5	261.4	255.5	222.9
67.5°	227.8	218.2	191.3	157.6	157.6	157.6	190.3	217.1	227.8	217.1	190.3
70°	192.2	182.6	157.6	131.7	132.7	131.7	157.6	183.6	193.2	183.6	157.6
72.5°	164.3	149.9	128.8	107.7	110.5	106.6	128.8	151.0	166.5	151.0	128.8
75°	139.4	122.1	101.8	87.5	92.2	87.5	102.9	123.2	142.6	123.2	102.9
77.5°	126.6	102.3	79.8	68.3	74.0	68.3	80.8	99.2	122.5	99.2	80.8
80°	128.2	99.6	65.7	51.9	56.7	51.9	63.5	82.9	108.2	82.9	63.5
82.5°	135.1	110.3	66.7	37.5	39.5	37.5	54.1	72.6	95.2	72.6	54.1
85°	155.0	131.1	81.1	31.1	23.1	29.0	50.7	67.2	87.0	67.2	50.7
87.5°	180.4	162.2	104.8	41.0	6.7	26.4	45.0	61.6	72.4	61.6	45.0
90°	209.6	195.3	136.8	56.3	1.1	16.5	33.0	47.6	52.4	47.6	33.0
92.5°	247.2	232.7	169.8	83.0	17.8	10.8	26.2	38.8	41.8	38.8	26.2
95°	283.3	275.0	209.1	111.0	42.9	6.1	20.4	31.9	34.8	31.9	20.4
97.5°	322.6	315.5	248.5	147.7	75.4	13.5	16.9	27.3	29.2	27.3	16.9
100°	356.8	353.8	289.9	192.8	115.2	35.5	12.1	24.7	26.6	24.7	12.1
102.5°	410.9	395.4	329.1	235.8	158.2	65.9	16.7	18.0	20.8	18.0	16.7
105°	454.4	436.9	380.4	280.9	207.4	106.8	41.9	15.5	13.1	15.5	41.9
107.5°	495.6	485.2	426.6	327.0	259.9	154.0	77.5	40.7	26.0	40.7	77.5
110°	548.0	535.5	471.6	373.1	314.4	204.4	118.4	74.2	57.5	74.2	118.4



TEST NUMBER: P392592

CATALOG NUMBER: MWL-3-37-25-UNV-L830-EDD

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	598.4	588.9	513.6	421.3	371.0	258.8	168.7	116.2	100.4	116.2	168.7
115°	637.2	631.9	561.8	466.4	423.4	320.7	224.2	165.5	146.6	165.5	224.2
117.5°	678.1	677.0	597.5	512.5	486.3	376.2	275.6	214.7	194.8	214.7	275.6
120°	729.5	721.0	646.7	558.7	546.0	434.9	332.2	271.3	251.4	271.3	332.2
122.5°	765.1	759.8	688.7	602.6	602.6	494.7	386.8	325.8	304.9	325.8	386.8
125°	797.5	795.5	720.0	646.7	663.5	550.2	447.5	385.6	362.6	385.6	447.5
127.5°	826.9	830.1	760.9	694.9	725.3	606.9	507.2	439.1	415.0	439.1	507.2
130°	852.0	862.5	799.7	739.0	784.0	668.7	560.7	492.5	476.8	492.5	560.7
132.5°	901.3	895.0	840.5	784.0	847.0	725.3	618.3	546.0	528.2	546.0	618.3
135°	926.5	928.5	875.1	822.8	905.6	782.0	671.8	600.4	582.7	600.4	671.8
137.5°	956.9	950.6	901.4	870.0	960.1	836.4	723.2	658.1	629.8	658.1	723.2
140°	978.9	977.9	938.0	912.9	1018.8	890.8	777.6	710.5	684.3	710.5	777.6
142.5°	1002.0	1008.2	973.7	958.0	1077.5	946.5	835.3	761.9	736.8	761.9	835.3
145°	1017.7	1031.4	1009.3	1016.7	1133.1	1010.3	885.6	811.1	783.9	811.1	885.6
147.5°	1043.9	1061.7	1035.5	1057.6	1181.3	1065.9	935.9	862.5	838.4	862.5	935.9
150°	1079.5	1087.9	1072.2	1114.1	1230.5	1127.7	987.3	911.8	887.7	911.8	987.3
152.5°	1107.9	1118.3	1099.5	1175.1	1269.3	1183.4	1043.0	960.0	931.7	960.0	1043.0
155°	1137.2	1141.4	1128.8	1234.8	1310.2	1239.0	1089.0	1013.5	986.2	1013.5	1089.0
157.5°	1164.4	1172.8	1158.2	1279.9	1345.9	1287.2	1140.3	1067.0	1042.9	1067.0	1140.3
160°	1193.8	1193.8	1202.2	1333.3	1375.2	1330.1	1194.8	1125.6	1092.1	1125.6	1194.8
162.5°	1196.9	1215.9	1261.9	1369.9	1404.5	1366.8	1253.6	1166.6	1138.2	1166.6	1253.6
165°	1243.0	1259.9	1329.0	1402.4	1426.5	1399.3	1325.9	1235.8	1202.2	1235.8	1325.9
167.5°	1291.3	1328.1	1383.6	1439.1	1447.5	1429.6	1381.4	1318.7	1288.1	1318.7	1381.4
170°	1369.0	1401.4	1429.6	1452.8	1464.3	1453.7	1416.0	1384.7	1364.7	1384.7	1416.0
172.5°	1430.8	1451.8	1463.2	1477.9	1470.5	1466.3	1447.5	1431.8	1421.4	1431.8	1447.5
175°	1469.6	1473.8	1484.2	1479.0	1485.2	1473.7	1474.7	1481.1	1438.2	1481.1	1474.7
177.5°	1483.2	1490.6	1486.3	1476.9	1477.9	1475.8	1479.9	1483.2	1477.0	1483.2	1479.9
180°	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2



TEST NUMBER: P392592

CATALOG NUMBER: MWL-3-37-25-UNV-L830-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1058.4	1058.4	1058.4	1058.4	1058.4	1058.4
2.5°	1056.6	1058.6	1057.7	1055.6	1057.5	1053.4
5°	1050.8	1051.8	1050.8	1050.8	1051.7	1047.7
7.5°	1041.1	1043.2	1042.2	1040.2	1042.1	1039.1
10°	1027.7	1028.7	1028.7	1027.7	1028.7	1028.7
12.5°	1012.3	1011.3	1012.3	1010.4	1011.4	1013.4
15°	992.1	992.1	993.1	991.2	993.1	995.3
17.5°	971.0	971.0	971.0	969.2	970.1	972.2
20°	945.9	945.9	947.0	944.2	946.2	945.3
22.5°	918.1	919.0	919.1	917.3	917.4	915.5
25°	890.2	888.3	891.3	887.6	883.8	884.8
27.5°	859.6	859.5	860.7	855.9	852.1	846.4
30°	825.1	824.0	827.1	821.4	811.8	808.9
32.5°	789.5	789.5	791.6	782.1	771.5	765.7
35°	750.1	753.9	753.2	739.7	726.3	724.4
37.5°	709.8	712.8	712.8	696.5	681.2	679.3
40°	667.5	674.4	669.7	648.5	636.1	635.1
42.5°	621.5	631.2	623.6	598.6	590.0	596.7
45°	572.5	585.1	574.6	551.6	546.8	554.5
47.5°	520.7	537.1	521.7	505.5	506.5	516.1
50°	468.7	477.5	470.8	459.4	468.1	479.6
52.5°	418.8	413.2	420.9	418.1	431.6	443.1
55°	367.8	351.6	370.0	379.7	396.0	405.6
57.5°	318.9	298.8	321.0	342.2	362.4	370.1
60°	269.9	252.8	271.0	301.8	328.7	332.5
62.5°	226.7	215.2	227.8	263.4	292.2	298.9
65°	191.2	186.4	192.3	224.0	256.6	261.4
67.5°	157.6	157.6	157.6	191.3	218.2	227.8
70°	131.7	132.7	131.7	157.6	182.6	192.2
72.5°	106.6	110.5	107.7	128.8	149.9	164.3
75°	87.5	92.2	87.5	101.8	122.1	139.4
77.5°	68.3	74.0	68.3	79.8	102.3	126.6
80°	51.9	56.7	51.9	65.7	99.6	128.2
82.5°	37.5	39.5	37.5	66.7	110.3	135.1
85°	29.0	23.1	31.1	81.1	131.1	155.0
87.5°	26.4	6.7	41.0	104.8	162.2	180.4
90°	16.5	1.1	56.3	136.8	195.3	209.6
92.5°	10.8	17.8	83.0	169.8	232.7	247.2
95°	6.1	42.9	111.0	209.1	275.0	283.3
97.5°	13.5	75.4	147.7	248.5	315.5	322.6
100°	35.5	115.2	192.8	289.9	353.8	356.8
102.5°	65.9	158.2	235.8	329.1	395.4	410.9
105°	106.8	207.4	280.9	380.4	436.9	454.4
107.5°	154.0	259.9	327.0	426.6	485.2	495.6
110°	204.4	314.4	373.1	471.6	535.5	548.0





TEST NUMBER: P392592

CATALOG NUMBER: MWL-3-37-25-UNV-L830-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	258.8	371.0	421.3	513.6	588.9	598.4
115°	320.7	423.4	466.4	561.8	631.9	637.2
117.5°	376.2	486.3	512.5	597.5	677.0	678.1
120°	434.9	546.0	558.7	646.7	721.0	729.5
122.5°	494.7	602.6	602.6	688.7	759.8	765.1
125°	550.2	663.5	646.7	720.0	795.5	797.5
127.5°	606.9	725.3	694.9	760.9	830.1	826.9
130°	668.7	784.0	739.0	799.7	862.5	852.0
132.5°	725.3	847.0	784.0	840.5	895.0	901.3
135°	782.0	905.6	822.8	875.1	928.5	926.5
137.5°	836.4	960.1	870.0	901.4	950.6	956.9
140°	890.8	1018.8	912.9	938.0	977.9	978.9
142.5°	946.5	1077.5	958.0	973.7	1008.2	1002.0
145°	1010.3	1133.1	1016.7	1009.3	1031.4	1017.7
147.5°	1065.9	1181.3	1057.6	1035.5	1061.7	1043.9
150°	1127.7	1230.5	1114.1	1072.2	1087.9	1079.5
152.5°	1183.4	1269.3	1175.1	1099.5	1118.3	1107.9
155°	1239.0	1310.2	1234.8	1128.8	1141.4	1137.2
157.5°	1287.2	1345.9	1279.9	1158.2	1172.8	1164.4
160°	1330.1	1375.2	1333.3	1202.2	1193.8	1193.8
162.5°	1366.8	1404.5	1369.9	1261.9	1215.9	1196.9
165°	1399.3	1426.5	1402.4	1329.0	1259.9	1243.0
167.5°	1429.6	1447.5	1439.1	1383.6	1328.1	1291.3
170°	1453.7	1464.3	1452.8	1429.6	1401.4	1369.0
172.5°	1466.3	1470.5	1477.9	1463.2	1451.8	1430.8
175°	1473.7	1485.2	1479.0	1484.2	1473.8	1469.6
177.5°	1475.8	1477.9	1476.9	1486.3	1490.6	1483.2
180°	1484.2	1484.2	1484.2	1484.2	1484.2	1484.2

(END OF REPORT)