

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: METALUX

Report Number: P192443

Luminaire Tested: **4WSL-LD2-30-UPL8-UNV-L840-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P192443
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P28106)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4WSL-LD2-30-UPL8-UNV-L840-CD1-U
Description: 4FT Linear Wavestream System, 8% Uplight, L840
Light Source: (238) 4000K CCT, 80 CRI LEDS
EL236N0119D840
Ballast/Driver: OSRAM
OT30W

Summary

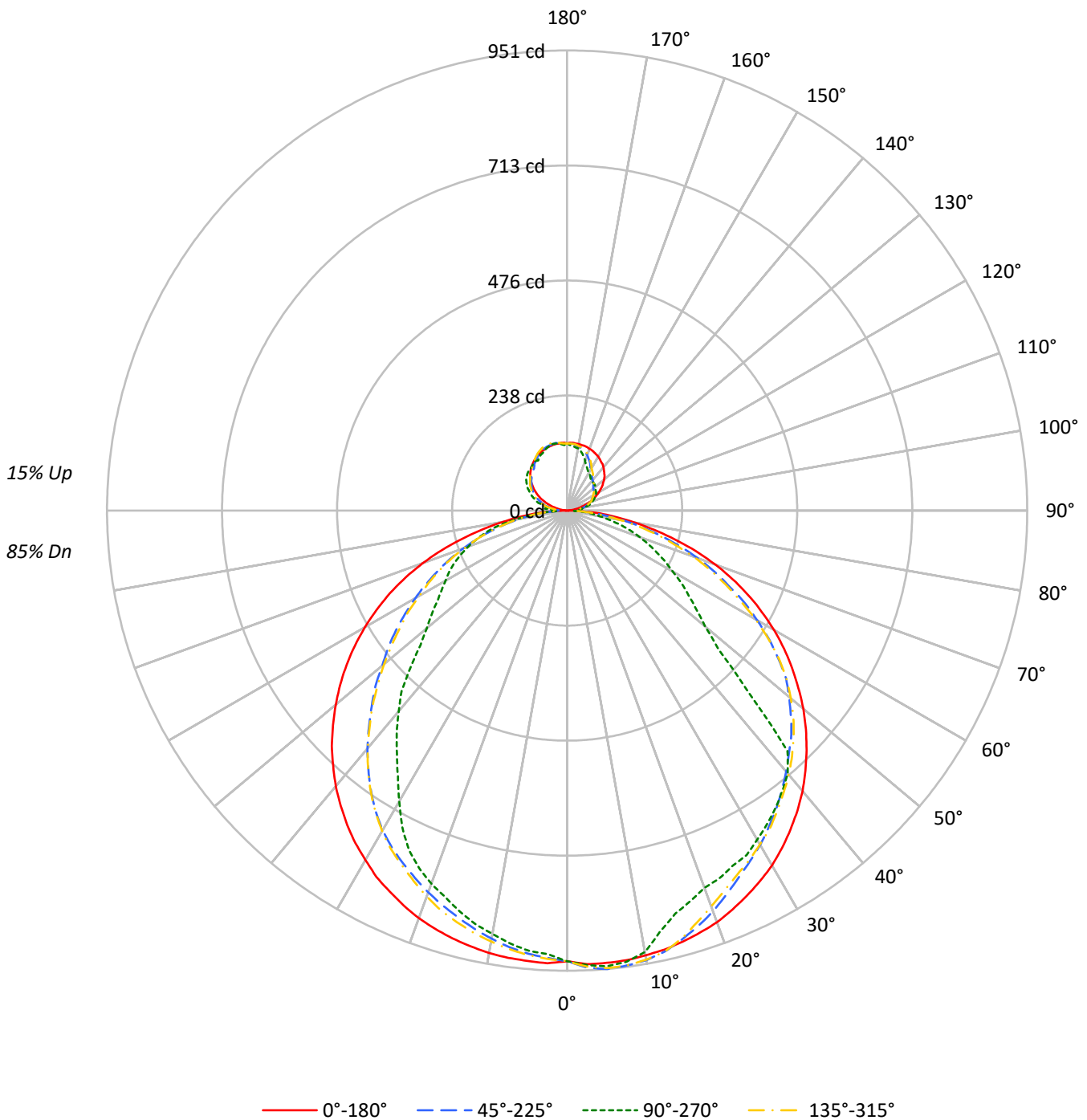
Lumens per Lamp: N/A
Luminaire Lumens: 3089.0 lumens
Efficiency: N/A
Efficacy: 124.1 lumens/watt
Spacing Criteria (0/90/45): 1.34 / 1.19 / 1.36
Luminous Opening: Rectangular (W 0.5' x L: 3.8' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 24.9
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	115	115	115	115	111	111	111	111	103	103	103	95	95	95	88	88	88	85
1	105	101	96	92	101	97	93	90	90	87	84	83	81	79	78	76	74	71
2	96	88	81	75	92	84	78	73	78	73	69	73	69	65	68	65	62	59
3	87	77	69	62	83	74	67	61	69	63	58	64	59	55	60	56	52	50
4	80	68	59	53	76	66	58	52	61	55	49	57	52	47	53	49	45	42
5	73	61	52	45	70	59	51	44	55	48	43	51	45	41	48	43	39	37
6	68	55	46	40	65	53	45	39	50	43	37	47	40	36	44	38	34	32
7	63	49	41	35	60	48	40	34	45	38	33	42	36	32	40	35	31	28
8	58	45	37	31	56	44	36	30	41	34	29	39	33	28	37	31	27	25
9	54	41	33	28	52	40	33	27	38	31	26	36	30	26	34	29	25	23
10	51	38	30	25	49	37	30	25	35	28	24	33	27	23	31	26	22	21

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	5276	5276	5276	5276
5°	5336	5376	5313	5194
10°	5369	5329	5340	5111
15°	5409	5059	5368	5029
20°	5458	5001	5404	4947
25°	5491	5061	5429	4836
30°	5537	5140	5453	4540
35°	5565	5192	5482	4241
40°	5597	5243	5501	4004
45°	5608	4218	5512	3659
50°	5615	3278	5501	3339
55°	5603	3033	5496	3240
60°	5593	2859	5468	3288
65°	5534	2740	5413	3449
70°	5385	2642	5252	3601
75°	5041	2489	4890	3798
80°	4587	2277	4391	3612
85°	4472	2464	4017	3244



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	88.5	2.9
10°-20°	251.4	8.1
20°-30°	380.6	12.3
30°-40°	459.5	14.9
40°-50°	469.2	15.2
50°-60°	410.2	13.3
60°-70°	317.9	10.3
70°-80°	191.1	6.2
80°-90°	59.0	1.9
90°-100°	24.9	0.8
100°-110°	47.6	1.5
110°-120°	64.6	2.1
120°-130°	73.5	2.4
130°-140°	74.5	2.4
140°-150°	68.6	2.2
150°-160°	56.6	1.8
160°-170°	38.0	1.2
170°-180°	13.2	0.4
0°-30°	720.5	23.3
0°-40°	1180.1	38.2
0°-60°	2059.4	66.7
0°-90°	2627.5	85.1
90°-120°	137.1	4.4
90°-150°	353.6	11.4
90°-180°	461.0	14.9
0°-180°	3089.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	931	931	931	931	931	
5°	938	945	934	913	938	89
15°	922	862	915	858	922	261
25°	878	810	868	774	878	405
35°	805	751	793	613	805	504
45°	700	526	688	457	700	540
55°	567	307	556	328	567	507
65°	413	204	404	257	413	407
75°	230	114	223	174	230	244
85°	69	38	62	50	69	69
90°	1	21	1	24	1	5
95°	6	29	6	46	6	8
105°	32	49	31	62	32	34
115°	62	63	61	84	62	61
125°	89	72	87	103	89	79
135°	109	79	108	114	109	84
145°	123	84	122	121	123	77
155°	133	98	132	128	133	61
165°	139	122	138	139	139	39
175°	141	134	141	138	141	13
180°	139	139	139	139	139	



TEST NUMBER: P192443

CATALOG NUMBER: 4WSL-LD2-30-UPL8-UNV-L840-CD1-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	931.3	931.3	931.3	931.3	931.3	931.3	931.3	931.3	931.3	931.3	931.3
2.5°	938.3	933.3	945.3	947.2	940.3	942.3	943.3	932.3	936.3	921.3	925.3
5°	938.3	937.3	951.2	949.2	945.3	946.2	949.2	936.3	934.3	916.3	919.3
7.5°	937.3	939.3	948.2	946.2	940.3	943.3	948.2	938.3	932.3	911.3	910.4
10°	933.3	936.3	943.3	937.3	926.3	931.3	942.3	936.3	928.3	903.4	898.4
12.5°	929.3	931.3	933.3	908.4	890.4	902.4	933.3	931.3	922.3	894.4	885.4
15°	922.3	925.3	917.3	881.4	862.5	874.5	915.3	923.3	915.3	881.4	870.5
17.5°	914.3	917.3	900.4	860.5	846.5	852.5	892.4	913.3	906.4	869.5	855.5
20°	905.4	908.4	881.4	838.6	829.6	834.6	870.5	902.4	896.4	855.5	839.6
22.5°	892.4	897.4	859.5	823.6	822.6	822.6	849.5	889.4	883.4	838.6	821.6
25°	878.4	883.4	837.6	809.6	809.6	809.6	830.6	872.5	868.5	820.6	803.7
27.5°	863.5	868.5	817.6	799.7	802.7	797.7	814.6	853.5	853.5	802.7	784.7
30°	846.5	851.5	797.7	783.7	785.7	783.7	796.7	833.6	833.6	781.7	762.8
32.5°	826.6	831.6	775.7	764.8	768.8	766.8	779.7	813.6	814.6	759.8	736.9
35°	804.7	810.6	752.8	746.8	750.8	747.8	756.8	792.7	792.7	735.9	706.9
37.5°	781.7	787.7	728.9	726.9	730.9	727.9	734.9	770.8	768.8	710.9	675.0
40°	756.8	763.8	704.0	704.0	708.9	706.9	712.9	747.8	743.8	686.0	642.1
42.5°	728.9	737.9	679.0	680.0	674.0	682.0	688.0	723.9	715.9	658.1	606.2
45°	700.0	710.9	655.1	637.1	526.5	630.2	662.1	700.0	688.0	630.2	571.3
47.5°	669.1	683.0	627.2	561.4	423.8	552.4	634.2	670.1	656.1	600.3	537.4
50°	637.1	653.1	598.3	496.6	371.9	486.6	603.2	640.1	624.2	569.3	498.5
52.5°	602.2	620.2	570.3	439.7	337.0	430.7	571.3	611.2	591.3	536.4	466.6
55°	567.3	586.3	532.5	390.9	307.1	382.9	534.4	574.3	556.4	502.5	431.7
57.5°	531.5	550.4	494.6	348.0	281.2	340.0	492.6	540.4	520.5	467.6	396.8
60°	493.6	512.5	453.7	309.1	252.3	303.1	449.7	502.5	482.6	431.7	362.9
62.5°	453.7	472.6	414.8	273.2	228.3	268.2	402.8	465.6	443.7	393.9	328.0
65°	412.8	426.8	368.9	239.3	204.4	235.3	361.0	419.8	403.8	354.0	295.1
67.5°	369.9	383.9	329.0	209.4	181.5	205.4	320.1	378.9	361.0	315.1	262.2
70°	325.1	337.0	287.2	180.5	159.5	177.5	277.2	333.0	317.1	274.2	227.3
72.5°	279.2	290.2	242.3	153.6	136.6	151.6	232.3	287.2	271.2	231.3	195.4
75°	230.3	241.3	200.4	126.6	113.7	124.6	191.4	238.3	223.4	190.4	162.5
77.5°	184.5	197.4	158.5	99.7	90.7	97.7	150.6	192.4	177.5	152.6	130.6
80°	140.6	151.6	117.7	75.8	69.8	74.8	109.7	146.6	134.6	117.7	101.7
82.5°	101.7	107.7	80.8	55.8	52.8	54.8	74.8	103.7	97.7	84.8	74.8
85°	68.8	67.8	49.9	38.9	37.9	38.9	44.9	62.8	61.8	56.8	47.9
87.5°	28.9	26.9	22.9	16.0	14.0	15.0	17.9	23.9	22.9	23.9	22.9
90°	1.0	10.0	16.0	19.9	20.9	19.9	16.0	10.0	1.0	11.0	17.9
92.5°	2.0	13.0	18.9	21.9	23.9	21.9	17.9	13.0	2.0	17.0	17.9
95°	6.0	17.9	21.9	26.9	28.9	26.9	21.9	17.0	6.0	15.0	26.9
97.5°	12.0	22.9	25.9	29.9	30.9	28.9	24.9	22.9	11.0	26.9	27.9
100°	17.9	28.9	33.9	33.9	34.9	33.9	32.9	27.9	17.0	29.9	33.9
102.5°	24.9	32.9	38.9	41.9	41.9	41.9	38.9	32.9	22.9	36.9	46.9
105°	31.9	35.9	42.9	46.9	48.9	46.9	42.9	36.9	30.9	42.9	49.9
107.5°	39.9	38.9	46.9	50.9	52.8	50.9	46.9	39.9	37.9	47.9	55.8
110°	47.9	42.9	50.9	54.8	55.8	54.8	50.9	42.9	45.9	53.8	61.8



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CATALOG NUMBER: 4WSL-LD2-30-UPL8-UNV-L840-CD1-U

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	54.8	45.9	54.8	58.8	59.8	58.8	54.8	46.9	52.8	57.8	67.8
115°	61.8	48.9	56.8	61.8	62.8	61.8	56.8	49.9	60.8	62.8	72.8
117.5°	68.8	52.8	58.8	64.8	65.8	64.8	59.8	53.8	67.8	68.8	77.8
120°	75.8	57.8	61.8	66.8	68.8	67.8	61.8	58.8	73.8	73.8	81.8
122.5°	81.8	61.8	64.8	68.8	70.8	68.8	64.8	63.8	80.8	78.8	86.7
125°	88.7	65.8	66.8	70.8	71.8	70.8	67.8	66.8	86.7	82.8	89.7
127.5°	93.7	70.8	68.8	72.8	73.8	72.8	69.8	71.8	92.7	90.7	92.7
130°	99.7	75.8	70.8	74.8	75.8	75.8	70.8	77.8	97.7	96.7	96.7
132.5°	104.7	80.8	72.8	76.8	77.8	77.8	73.8	81.8	102.7	101.7	99.7
135°	108.7	87.7	76.8	76.8	78.8	78.8	77.8	88.7	107.7	106.7	104.7
137.5°	112.7	93.7	79.8	77.8	78.8	78.8	81.8	94.7	111.7	111.7	107.7
140°	116.7	99.7	81.8	79.8	79.8	81.8	84.8	100.7	115.7	115.7	108.7
142.5°	120.6	104.7	84.8	82.8	80.8	84.8	87.7	106.7	118.7	119.7	111.7
145°	122.6	109.7	88.7	85.8	83.8	88.7	92.7	111.7	121.6	123.6	117.7
147.5°	125.6	114.7	93.7	87.7	87.7	90.7	96.7	115.7	124.6	126.6	120.6
150°	128.6	118.7	97.7	90.7	88.7	93.7	100.7	119.7	127.6	129.6	124.6
152.5°	130.6	122.6	103.7	94.7	92.7	98.7	107.7	122.6	129.6	131.6	128.6
155°	132.6	125.6	110.7	98.7	97.7	102.7	113.7	125.6	131.6	133.6	131.6
157.5°	134.6	128.6	115.7	104.7	100.7	108.7	118.7	129.6	133.6	135.6	134.6
160°	135.6	130.6	121.6	110.7	108.7	115.7	123.6	130.6	134.6	137.6	136.6
162.5°	137.6	132.6	125.6	117.7	115.7	121.6	127.6	133.6	136.6	138.6	138.6
165°	138.6	134.6	129.6	123.6	121.6	127.6	130.6	135.6	137.6	138.6	139.6
167.5°	138.6	136.6	132.6	127.6	126.6	131.6	134.6	137.6	138.6	138.6	140.6
170°	139.6	137.6	134.6	131.6	130.6	134.6	135.6	138.6	139.6	138.6	141.6
172.5°	139.6	138.6	136.6	133.6	131.6	136.6	137.6	138.6	139.6	138.6	140.6
175°	140.6	138.6	138.6	136.6	133.6	138.6	138.6	138.6	140.6	138.6	139.6
177.5°	140.6	138.6	138.6	137.6	135.6	138.6	138.6	138.6	140.6	138.6	139.6
180°	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	931.3	931.3	931.3	931.3	931.3	931.3
2.5°	924.3	917.3	919.3	927.3	924.3	938.3
5°	917.3	913.3	913.3	922.3	921.3	938.3
7.5°	906.4	902.4	904.4	914.3	916.3	937.3
10°	893.4	888.4	890.4	904.4	909.4	933.3
12.5°	879.4	875.5	877.4	893.4	900.4	929.3
15°	863.5	857.5	863.5	880.4	889.4	922.3
17.5°	845.5	837.6	844.5	866.5	877.4	914.3
20°	827.6	820.6	824.6	848.5	864.5	905.4
22.5°	809.6	799.7	803.7	828.6	848.5	892.4
25°	788.7	773.7	781.7	808.6	831.6	878.4
27.5°	760.8	737.9	754.8	788.7	811.6	863.5
30°	723.9	694.0	718.9	764.8	790.7	846.5
32.5°	683.0	651.1	679.0	737.9	768.8	826.6
35°	642.1	613.2	638.1	707.9	745.8	804.7
37.5°	603.2	578.3	601.3	676.0	721.9	781.7
40°	566.4	541.4	565.4	641.1	696.0	756.8
42.5°	529.5	506.5	529.5	604.2	669.1	728.9
45°	492.6	456.7	490.6	568.3	640.1	700.0
47.5°	452.7	410.8	449.7	529.5	609.2	669.1
50°	414.8	378.9	412.8	493.6	577.3	637.1
52.5°	381.9	353.0	379.9	456.7	544.4	602.2
55°	351.0	328.0	351.0	420.8	509.5	567.3
57.5°	323.1	308.1	324.1	389.9	473.6	531.5
60°	299.1	290.2	300.1	352.0	437.7	493.6
62.5°	276.2	275.2	277.2	322.1	399.8	453.7
65°	252.3	257.3	252.3	290.2	361.9	412.8
67.5°	228.3	238.3	230.3	258.2	321.1	369.9
70°	206.4	217.4	206.4	225.3	280.2	325.1
72.5°	181.5	195.4	181.5	194.4	237.3	279.2
75°	157.5	173.5	158.5	162.5	196.4	230.3
77.5°	131.6	146.6	134.6	131.6	158.5	184.5
80°	104.7	110.7	104.7	103.7	122.6	140.6
82.5°	72.8	77.8	72.8	75.8	89.7	101.7
85°	47.9	49.9	47.9	48.9	59.8	68.8
87.5°	19.9	19.9	19.9	24.9	26.9	28.9
90°	21.9	23.9	21.9	17.9	11.0	1.0
92.5°	22.9	24.9	22.9	19.9	13.0	2.0
95°	40.9	45.9	38.9	24.9	20.9	6.0
97.5°	32.9	35.9	33.9	28.9	25.9	12.0
100°	38.9	41.9	38.9	40.9	31.9	17.9
102.5°	45.9	47.9	46.9	47.9	38.9	24.9
105°	59.8	61.8	59.8	51.8	44.9	31.9
107.5°	63.8	68.8	64.8	57.8	50.9	39.9
110°	68.8	72.8	69.8	63.8	55.8	47.9



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	73.8	78.8	75.8	70.8	59.8	54.8
115°	79.8	83.8	81.8	75.8	65.8	61.8
117.5°	85.8	88.7	86.7	79.8	71.8	68.8
120°	90.7	94.7	92.7	84.8	76.8	75.8
122.5°	94.7	98.7	96.7	89.7	81.8	81.8
125°	98.7	102.7	100.7	93.7	85.8	88.7
127.5°	101.7	106.7	104.7	96.7	94.7	93.7
130°	105.7	108.7	107.7	99.7	99.7	99.7
132.5°	107.7	111.7	109.7	103.7	105.7	104.7
135°	108.7	113.7	111.7	108.7	110.7	108.7
137.5°	110.7	114.7	113.7	111.7	115.7	112.7
140°	113.7	115.7	116.7	113.7	119.7	116.7
142.5°	116.7	117.7	119.7	116.7	123.6	120.6
145°	118.7	120.6	122.6	122.6	126.6	122.6
147.5°	118.7	121.6	121.6	124.6	130.6	125.6
150°	121.6	119.7	125.6	128.6	132.6	128.6
152.5°	125.6	124.6	129.6	132.6	134.6	130.6
155°	126.6	127.6	130.6	135.6	136.6	132.6
157.5°	130.6	129.6	134.6	138.6	138.6	134.6
160°	133.6	133.6	138.6	140.6	139.6	135.6
162.5°	136.6	136.6	141.6	141.6	140.6	137.6
165°	138.6	138.6	143.6	142.6	140.6	138.6
167.5°	139.6	140.6	144.6	143.6	140.6	138.6
170°	140.6	140.6	144.6	142.6	140.6	139.6
172.5°	140.6	139.6	143.6	141.6	139.6	139.6
175°	139.6	137.6	141.6	139.6	139.6	140.6
177.5°	138.6	135.6	138.6	138.6	139.6	140.6
180°	138.6	138.6	138.6	138.6	138.6	138.6

(END OF REPORT)