

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: P192444

Luminaire Tested: **4WSL-LD2-30-UPL8-UNV-L850-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P192444
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-L850-CD1-U
Description: 4FT Linear Wavestream System, 8% Uplight, L850
Light Source: (238) 5000K CCT, 80 CRI LEDS
EL236N0119D850
Ballast/Driver: OSRAM
OT30W

Summary

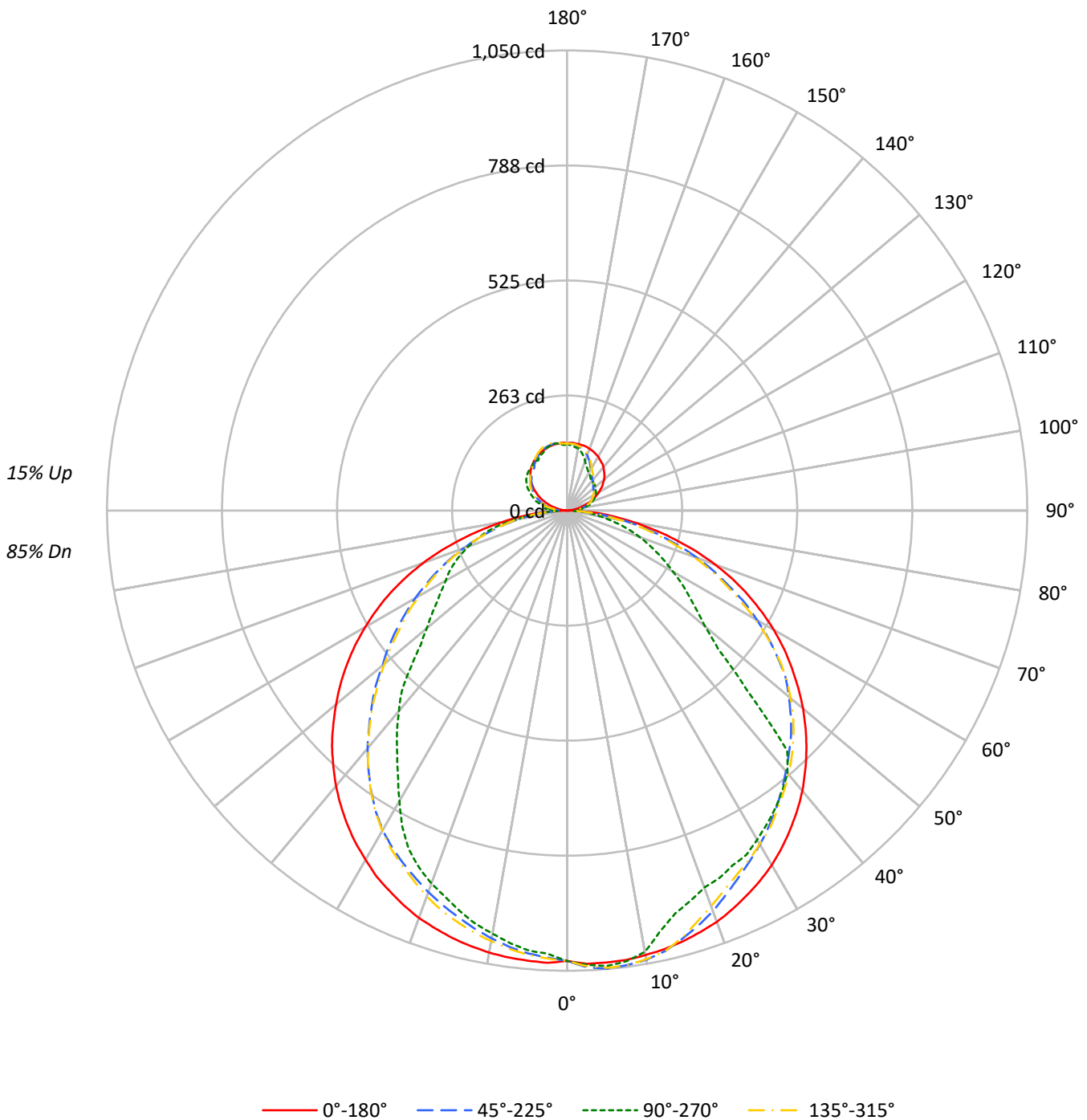
Lumens per Lamp: N/A
Luminaire Lumens: 3407.9 lumens
Efficiency: N/A
Efficacy: 136.9 lumens/watt
Spacing Criteria (0/90/45): 1.34 / 1.19 / 1.36
Luminous Opening: Rectangular (W 0.5' x L: 3.8' x H: 0')
CIE Type: Semi-Direct

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			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°	5821	5821	5821	5821
5°	5887	5931	5862	5731
10°	5923	5879	5892	5639
15°	5968	5581	5923	5549
20°	6022	5518	5962	5458
25°	6058	5584	5990	5336
30°	6110	5671	6016	5008
35°	6140	5729	6049	4679
40°	6175	5784	6069	4417
45°	6187	4653	6081	4036
50°	6195	3616	6069	3684
55°	6182	3346	6063	3574
60°	6169	3153	6032	3627
65°	6105	3023	5972	3804
70°	5940	2915	5794	3972
75°	5562	2745	5393	4190
80°	5060	2512	4845	3983
85°	4934	2717	4433	3575



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CATALOG NUMBER: 4WSL-LD2-30-UPL8-UNV-L850-CD1-U

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	97.7	2.9
10°-20°	277.4	8.1
20°-30°	419.9	12.3
30°-40°	507.0	14.9
40°-50°	517.6	15.2
50°-60°	452.5	13.3
60°-70°	350.7	10.3
70°-80°	210.9	6.2
80°-90°	65.1	1.9
90°-100°	27.4	0.8
100°-110°	52.5	1.5
110°-120°	71.3	2.1
120°-130°	81.0	2.4
130°-140°	82.2	2.4
140°-150°	75.7	2.2
150°-160°	62.4	1.8
160°-170°	42.0	1.2
170°-180°	14.6	0.4
0°-30°	794.9	23.3
0°-40°	1302.0	38.2
0°-60°	2272.1	66.7
0°-90°	2898.8	85.1
90°-120°	151.2	4.4
90°-150°	390.1	11.4
90°-180°	509.0	14.9
0°-180°	3407.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1028	1028	1028	1028	1028	
5°	1035	1043	1031	1008	1035	99
15°	1018	952	1010	946	1018	288
25°	969	893	958	854	969	447
35°	888	828	875	676	888	556
45°	772	581	759	504	772	596
55°	626	339	614	362	626	559
65°	455	226	446	284	455	449
75°	254	125	246	191	254	270
85°	76	42	68	55	76	77
90°	1	23	1	26	1	5
95°	7	32	7	51	7	8
105°	35	54	34	68	35	38
115°	68	69	67	92	68	68
125°	98	79	96	113	98	87
135°	120	87	119	125	120	93
145°	135	92	134	133	135	85
155°	146	108	145	141	146	68
165°	153	134	152	153	153	43
175°	155	147	155	152	155	15
180°	153	153	153	153	153	



TEST NUMBER: P192444

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1027.5	1027.5	1027.5	1027.5	1027.5	1027.5	1027.5	1027.5	1027.5	1027.5	1027.5
2.5°	1035.2	1029.7	1042.9	1045.1	1037.4	1039.6	1040.7	1028.6	1033.0	1016.5	1020.9
5°	1035.2	1034.1	1049.5	1047.3	1042.9	1044.0	1047.3	1033.0	1030.8	1011.0	1014.3
7.5°	1034.1	1036.3	1046.2	1044.0	1037.4	1040.7	1046.2	1035.2	1028.6	1005.5	1004.4
10°	1029.7	1033.0	1040.7	1034.1	1022.0	1027.5	1039.6	1033.0	1024.2	996.7	991.2
12.5°	1025.3	1027.5	1029.7	1002.2	982.4	995.6	1029.7	1027.5	1017.6	986.8	976.9
15°	1017.6	1020.9	1012.1	972.5	951.6	964.8	1009.9	1018.7	1009.9	972.5	960.4
17.5°	1008.8	1012.1	993.4	949.4	934.0	940.6	984.6	1007.7	1000.0	959.3	943.9
20°	998.9	1002.2	972.5	925.2	915.3	920.8	960.4	995.6	989.0	943.9	926.3
22.5°	984.6	990.1	948.3	908.7	907.6	907.6	937.3	981.3	974.7	925.2	906.5
25°	969.2	974.7	924.1	893.3	893.3	893.3	916.4	962.6	958.2	905.4	886.7
27.5°	952.7	958.2	902.1	882.3	885.6	880.1	898.8	941.7	941.7	885.6	865.8
30°	934.0	939.5	880.1	864.7	866.9	864.7	879.0	919.7	919.7	862.5	841.6
32.5°	912.0	917.5	855.9	843.8	848.2	846.0	860.3	897.7	898.8	838.3	813.0
35°	887.8	894.4	830.6	824.0	828.4	825.1	835.0	874.6	874.6	811.9	779.9
37.5°	862.5	869.1	804.2	802.0	806.4	803.1	810.8	850.4	848.2	784.3	744.7
40°	835.0	842.7	776.6	776.6	782.1	779.9	786.6	825.1	820.7	756.8	708.4
42.5°	804.2	814.1	749.1	750.2	743.6	752.4	759.0	798.7	789.9	726.0	668.8
45°	772.2	784.3	722.7	702.9	580.8	695.2	730.4	772.2	759.0	695.2	630.3
47.5°	738.1	753.5	691.9	619.3	467.5	609.4	699.6	739.2	723.8	662.2	592.9
50°	702.9	720.5	660.0	547.8	410.3	536.8	665.5	706.2	688.6	628.1	550.0
52.5°	664.4	684.2	629.2	485.1	371.8	475.2	630.3	674.3	652.3	591.8	514.8
55°	625.9	646.8	587.4	431.2	338.8	422.4	589.6	633.6	613.8	554.4	476.3
57.5°	586.3	607.2	545.6	383.9	310.2	375.1	543.4	596.2	574.2	515.9	437.8
60°	544.5	565.4	500.5	341.0	278.3	334.4	496.1	554.4	532.4	476.3	400.4
62.5°	500.5	521.4	457.6	301.4	251.9	295.9	444.4	513.7	489.5	434.5	361.9
65°	455.4	470.8	407.0	264.0	225.5	259.6	398.2	463.1	445.5	390.5	325.6
67.5°	408.1	423.5	363.0	231.0	200.2	226.6	353.1	418.0	398.2	347.6	289.3
70°	358.6	371.8	316.8	199.1	176.0	195.8	305.8	367.4	349.8	302.5	250.8
72.5°	308.0	320.1	267.3	169.4	150.7	167.2	256.3	316.8	299.2	255.2	215.6
75°	254.1	266.2	221.1	139.7	125.4	137.5	211.2	262.9	246.4	210.1	179.3
77.5°	203.5	217.8	174.9	110.0	100.1	107.8	166.1	212.3	195.8	168.3	144.1
80°	155.1	167.2	129.8	83.6	77.0	82.5	121.0	161.7	148.5	129.8	112.2
82.5°	112.2	118.8	89.1	61.6	58.3	60.5	82.5	114.4	107.8	93.5	82.5
85°	75.9	74.8	55.0	42.9	41.8	42.9	49.5	69.3	68.2	62.7	52.8
87.5°	31.9	29.7	25.3	17.6	15.4	16.5	19.8	26.4	25.3	26.4	25.3
90°	1.1	11.0	17.6	22.0	23.1	22.0	17.6	11.0	1.1	12.1	19.8
92.5°	2.2	14.3	20.9	24.2	26.4	24.2	19.8	14.3	2.2	18.7	19.8
95°	6.6	19.8	24.2	29.7	31.9	29.7	24.2	18.7	6.6	16.5	29.7
97.5°	13.2	25.3	28.6	33.0	34.1	31.9	27.5	25.3	12.1	29.7	30.8
100°	19.8	31.9	37.4	37.4	38.5	37.4	36.3	30.8	18.7	33.0	37.4
102.5°	27.5	36.3	42.9	46.2	46.2	46.2	42.9	36.3	25.3	40.7	51.7
105°	35.2	39.6	47.3	51.7	53.9	51.7	47.3	40.7	34.1	47.3	55.0
107.5°	44.0	42.9	51.7	56.1	58.3	56.1	51.7	44.0	41.8	52.8	61.6
110°	52.8	47.3	56.1	60.5	61.6	60.5	56.1	47.3	50.6	59.4	68.2



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CATALOG NUMBER: 4WSL-LD2-30-UPL8-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	60.5	50.6	60.5	64.9	66.0	64.9	60.5	51.7	58.3	63.8	74.8
115°	68.2	53.9	62.7	68.2	69.3	68.2	62.7	55.0	67.1	69.3	80.3
117.5°	75.9	58.3	64.9	71.5	72.6	71.5	66.0	59.4	74.8	75.9	85.8
120°	83.6	63.8	68.2	73.7	75.9	74.8	68.2	64.9	81.4	81.4	90.2
122.5°	90.2	68.2	71.5	75.9	78.1	75.9	71.5	70.4	89.1	86.9	95.7
125°	97.9	72.6	73.7	78.1	79.2	78.1	74.8	73.7	95.7	91.3	99.0
127.5°	103.4	78.1	75.9	80.3	81.4	80.3	77.0	79.2	102.3	100.1	102.3
130°	110.0	83.6	78.1	82.5	83.6	83.6	78.1	85.8	107.8	106.7	106.7
132.5°	115.5	89.1	80.3	84.7	85.8	85.8	81.4	90.2	113.3	112.2	110.0
135°	119.9	96.8	84.7	84.7	86.9	86.9	85.8	97.9	118.8	117.7	115.5
137.5°	124.3	103.4	88.0	85.8	86.9	86.9	90.2	104.5	123.2	123.2	118.8
140°	128.7	110.0	90.2	88.0	88.0	90.2	93.5	111.1	127.6	127.6	119.9
142.5°	133.1	115.5	93.5	91.3	89.1	93.5	96.8	117.7	130.9	132.0	123.2
145°	135.3	121.0	97.9	94.6	92.4	97.9	102.3	123.2	134.2	136.4	129.8
147.5°	138.6	126.5	103.4	96.8	96.8	100.1	106.7	127.6	137.5	139.7	133.1
150°	141.9	130.9	107.8	100.1	97.9	103.4	111.1	132.0	140.8	143.0	137.5
152.5°	144.1	135.3	114.4	104.5	102.3	108.9	118.8	135.3	143.0	145.2	141.9
155°	146.3	138.6	122.1	108.9	107.8	113.3	125.4	138.6	145.2	147.4	145.2
157.5°	148.5	141.9	127.6	115.5	111.1	119.9	130.9	143.0	147.4	149.6	148.5
160°	149.6	144.1	134.2	122.1	119.9	127.6	136.4	144.1	148.5	151.8	150.7
162.5°	151.8	146.3	138.6	129.8	127.6	134.2	140.8	147.4	150.7	152.9	152.9
165°	152.9	148.5	143.0	136.4	134.2	140.8	144.1	149.6	151.8	152.9	154.0
167.5°	152.9	150.7	146.3	140.8	139.7	145.2	148.5	151.8	152.9	152.9	155.1
170°	154.0	151.8	148.5	145.2	144.1	148.5	149.6	152.9	154.0	152.9	156.2
172.5°	154.0	152.9	150.7	147.4	145.2	150.7	151.8	152.9	154.0	152.9	155.1
175°	155.1	152.9	152.9	150.7	147.4	152.9	152.9	152.9	155.1	152.9	154.0
177.5°	155.1	152.9	152.9	151.8	149.6	152.9	152.9	152.9	155.1	152.9	154.0
180°	152.9	152.9	152.9	152.9	152.9	152.9	152.9	152.9	152.9	152.9	152.9



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CATALOG NUMBER: 4WSL-LD2-30-UPL8-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1027.5	1027.5	1027.5	1027.5	1027.5	1027.5
2.5°	1019.8	1012.1	1014.3	1023.1	1019.8	1035.2
5°	1012.1	1007.7	1007.7	1017.6	1016.5	1035.2
7.5°	1000.0	995.6	997.8	1008.8	1011.0	1034.1
10°	985.7	980.2	982.4	997.8	1003.3	1029.7
12.5°	970.3	965.9	968.1	985.7	993.4	1025.3
15°	952.7	946.1	952.7	971.4	981.3	1017.6
17.5°	932.9	924.1	931.8	956.0	968.1	1008.8
20°	913.1	905.4	909.8	936.2	953.8	998.9
22.5°	893.3	882.3	886.7	914.2	936.2	984.6
25°	870.2	853.7	862.5	892.2	917.5	969.2
27.5°	839.4	814.1	832.8	870.2	895.5	952.7
30°	798.7	765.6	793.2	843.8	872.4	934.0
32.5°	753.5	718.3	749.1	814.1	848.2	912.0
35°	708.4	676.5	704.0	781.0	822.9	887.8
37.5°	665.5	638.0	663.3	745.8	796.5	862.5
40°	624.8	597.3	623.7	707.3	767.8	835.0
42.5°	584.1	558.8	584.1	666.6	738.1	804.2
45°	543.4	503.8	541.2	627.0	706.2	772.2
47.5°	499.4	453.2	496.1	584.1	672.1	738.1
50°	457.6	418.0	455.4	544.5	636.9	702.9
52.5°	421.3	389.4	419.1	503.8	600.6	664.4
55°	387.2	361.9	387.2	464.2	562.1	625.9
57.5°	356.4	339.9	357.5	430.1	522.5	586.3
60°	330.0	320.1	331.1	388.3	482.9	544.5
62.5°	304.7	303.6	305.8	355.3	441.1	500.5
65°	278.3	283.8	278.3	320.1	399.3	455.4
67.5°	251.9	262.9	254.1	284.9	354.2	408.1
70°	227.7	239.8	227.7	248.6	309.1	358.6
72.5°	200.2	215.6	200.2	214.5	261.8	308.0
75°	173.8	191.4	174.9	179.3	216.7	254.1
77.5°	145.2	161.7	148.5	145.2	174.9	203.5
80°	115.5	122.1	115.5	114.4	135.3	155.1
82.5°	80.3	85.8	80.3	83.6	99.0	112.2
85°	52.8	55.0	52.8	53.9	66.0	75.9
87.5°	22.0	22.0	22.0	27.5	29.7	31.9
90°	24.2	26.4	24.2	19.8	12.1	1.1
92.5°	25.3	27.5	25.3	22.0	14.3	2.2
95°	45.1	50.6	42.9	27.5	23.1	6.6
97.5°	36.3	39.6	37.4	31.9	28.6	13.2
100°	42.9	46.2	42.9	45.1	35.2	19.8
102.5°	50.6	52.8	51.7	52.8	42.9	27.5
105°	66.0	68.2	66.0	57.2	49.5	35.2
107.5°	70.4	75.9	71.5	63.8	56.1	44.0
110°	75.9	80.3	77.0	70.4	61.6	52.8



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	81.4	86.9	83.6	78.1	66.0	60.5
115°	88.0	92.4	90.2	83.6	72.6	68.2
117.5°	94.6	97.9	95.7	88.0	79.2	75.9
120°	100.1	104.5	102.3	93.5	84.7	83.6
122.5°	104.5	108.9	106.7	99.0	90.2	90.2
125°	108.9	113.3	111.1	103.4	94.6	97.9
127.5°	112.2	117.7	115.5	106.7	104.5	103.4
130°	116.6	119.9	118.8	110.0	110.0	110.0
132.5°	118.8	123.2	121.0	114.4	116.6	115.5
135°	119.9	125.4	123.2	119.9	122.1	119.9
137.5°	122.1	126.5	125.4	123.2	127.6	124.3
140°	125.4	127.6	128.7	125.4	132.0	128.7
142.5°	128.7	129.8	132.0	128.7	136.4	133.1
145°	130.9	133.1	135.3	135.3	139.7	135.3
147.5°	130.9	134.2	134.2	137.5	144.1	138.6
150°	134.2	132.0	138.6	141.9	146.3	141.9
152.5°	138.6	137.5	143.0	146.3	148.5	144.1
155°	139.7	140.8	144.1	149.6	150.7	146.3
157.5°	144.1	143.0	148.5	152.9	152.9	148.5
160°	147.4	147.4	152.9	155.1	154.0	149.6
162.5°	150.7	150.7	156.2	156.2	155.1	151.8
165°	152.9	152.9	158.4	157.3	155.1	152.9
167.5°	154.0	155.1	159.5	158.4	155.1	152.9
170°	155.1	155.1	159.5	157.3	155.1	154.0
172.5°	155.1	154.0	158.4	156.2	154.0	154.0
175°	154.0	151.8	156.2	154.0	154.0	155.1
177.5°	152.9	149.6	152.9	152.9	154.0	155.1
180°	152.9	152.9	152.9	152.9	152.9	152.9

(END OF REPORT)