

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: P192485

Luminaire Tested: **4WSL-LD2-30-UPL15-UNV-L830-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P192485
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P28105)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4WSL-LD2-30-UPL15-UNV-L830-CD1-U
Description: 4FT Linear Wavestream System, 15% Uplight, L830
Light Source: (238) 3000K CCT, 80 CRI LEDS
EL236N0119D830
Ballast/Driver: OSRAM
OT30W

Summary

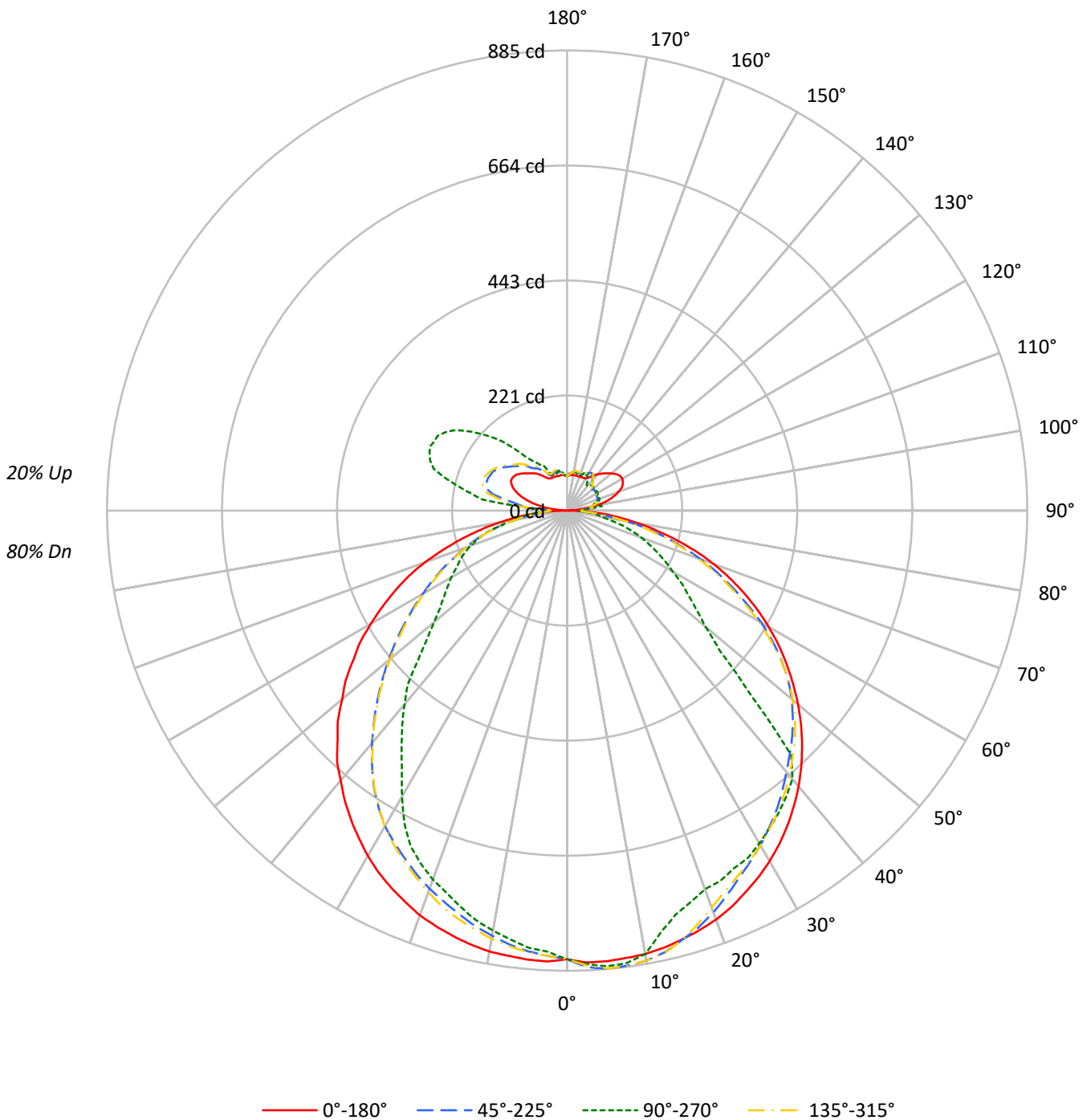
Lumens per Lamp: N/A
Luminaire Lumens: 3054.0 lumens
Efficiency: N/A
Efficacy: 122.7 lumens/watt
Spacing Criteria (0/90/45): 1.32 / 1.19 / 1.35
Luminous Opening: Rectangular (W 0.5' x L: 3.8' x H: 0')
CIE Type: Semi-Direct

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	114	114	114	114	109	109	109	109	100	100	100	91	91	91	83	83	83	80
1	104	99	95	91	99	95	91	88	87	84	81	80	77	75	73	71	70	66
2	94	86	80	74	90	83	77	72	76	71	67	70	66	62	64	61	58	55
3	86	76	68	62	82	73	66	60	67	61	56	61	57	53	56	53	49	46
4	79	67	59	52	75	64	57	51	59	53	48	55	49	45	50	46	42	40
5	72	60	51	45	69	58	50	44	53	46	41	49	43	39	45	41	37	34
6	67	54	45	39	64	52	44	38	48	41	36	44	39	34	41	36	32	30
7	62	49	40	34	59	47	39	33	44	37	32	40	35	30	38	33	29	26
8	58	44	36	30	55	43	35	30	40	33	28	37	31	27	34	29	26	24
9	54	41	33	27	51	39	32	27	37	30	26	34	28	24	32	27	23	21
10	50	37	30	25	48	36	29	24	34	27	23	32	26	22	30	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	4889	4889	4889	4889
5°	4947	5003	4930	4800
10°	4981	4981	4953	4719
15°	5009	4718	4968	4631
20°	5047	4671	4994	4552
25°	5066	4744	5004	4452
30°	5094	4835	5016	4155
35°	5112	4906	5015	3837
40°	5121	4982	5012	3598
45°	5120	3961	5001	3238
50°	5108	3057	4977	2943
55°	5089	2818	4961	2857
60°	5074	2660	4939	2919
65°	5034	2576	4901	3055
70°	4956	2511	4825	3266
75°	4728	2386	4575	3469
80°	4427	2166	4300	3458
85°	4446	2834	4121	4121



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	82.1	2.7
10°-20°	233.1	7.6
20°-30°	352.2	11.5
30°-40°	423.9	13.9
40°-50°	431.1	14.1
50°-60°	375.2	12.3
60°-70°	292.7	9.6
70°-80°	180.9	5.9
80°-90°	63.7	2.1
90°-100°	59.9	2.0
100°-110°	116.0	3.8
110°-120°	127.0	4.2
120°-130°	111.3	3.6
130°-140°	83.4	2.7
140°-150°	57.1	1.9
150°-160°	36.4	1.2
160°-170°	21.3	0.7
170°-180°	6.9	0.2
0°-30°	667.4	21.9
0°-40°	1091.2	35.7
0°-60°	1897.5	62.1
0°-90°	2434.8	79.7
90°-120°	302.9	9.9
90°-150°	554.8	18.2
90°-180°	619.0	20.3
0°-180°	3054.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	863	863	863	863	863	
5°	870	880	867	844	870	83
15°	854	804	847	790	854	241
25°	810	759	800	712	810	374
35°	739	709	725	555	739	462
45°	639	494	624	404	639	493
55°	515	285	502	289	515	461
65°	376	192	366	228	376	371
75°	216	109	209	158	216	229
85°	68	44	63	63	68	68
90°	1	28	1	44	1	5
95°	27	46	21	91	27	28
105°	85	56	82	243	85	89
115°	118	64	118	291	118	115
125°	120	67	120	268	120	107
135°	101	67	101	196	101	78
145°	79	67	81	117	79	51
155°	70	81	69	80	70	32
165°	69	73	68	74	69	20
175°	68	71	68	69	68	7
180°	66	66	66	66	66	



TEST NUMBER: P192485

CATALOG NUMBER: 4WSL-LD2-30-UPL15-UNV-L830-CD1-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	862.9	862.9	862.9	862.9	862.9	862.9	862.9	862.9	862.9	862.9	862.9
2.5°	869.9	865.9	878.8	879.8	872.9	875.8	875.8	864.9	867.9	855.0	857.0
5°	869.9	870.9	884.7	883.7	879.8	880.8	883.7	869.9	866.9	849.1	851.1
7.5°	867.9	872.9	882.8	881.8	877.8	878.8	883.7	871.9	863.9	843.1	842.1
10°	865.9	870.9	878.8	873.8	865.9	868.9	878.8	870.9	861.0	836.2	830.2
12.5°	861.0	865.9	869.9	845.1	831.2	843.1	870.9	865.9	855.0	826.3	818.4
15°	854.0	860.0	855.0	820.3	804.5	815.4	855.0	859.0	847.1	813.4	803.5
17.5°	846.1	853.0	840.2	801.5	789.6	794.6	834.2	850.1	838.2	800.5	788.6
20°	837.2	845.1	822.3	781.7	774.8	778.7	812.4	840.2	828.3	786.7	773.8
22.5°	825.3	834.2	801.5	767.8	770.8	767.8	792.6	827.3	814.4	771.8	756.9
25°	810.4	820.3	780.7	755.9	758.9	757.9	775.8	810.4	800.5	754.0	738.1
27.5°	795.6	805.5	761.9	748.0	753.0	747.0	759.9	792.6	784.7	735.1	720.3
30°	778.7	789.6	743.1	734.1	739.1	735.1	744.1	774.8	766.8	715.3	700.5
32.5°	759.9	770.8	723.2	717.3	724.2	719.3	725.2	755.0	746.0	693.5	675.7
35°	739.1	750.0	702.4	702.4	709.4	703.4	706.4	735.1	725.2	671.7	648.0
37.5°	716.3	728.2	679.7	684.6	692.5	686.6	686.6	714.3	702.4	648.0	616.2
40°	692.5	705.4	655.9	666.8	673.7	666.8	664.8	692.5	677.7	624.2	583.6
42.5°	666.8	680.6	634.1	647.0	638.0	647.0	642.0	669.7	654.9	598.4	549.9
45°	639.0	656.9	612.3	604.4	494.4	598.4	619.2	646.0	624.2	573.6	516.2
47.5°	610.3	629.1	588.5	531.0	397.3	525.1	594.5	620.2	598.4	546.9	482.5
50°	579.6	601.4	563.7	467.6	346.8	461.7	566.7	593.5	564.7	518.2	448.8
52.5°	547.9	571.7	536.0	413.1	313.1	407.2	537.0	564.7	537.0	487.4	416.1
55°	515.2	540.0	503.3	362.6	285.3	361.6	502.3	534.0	502.3	456.7	383.4
57.5°	482.5	510.2	468.6	326.0	261.6	321.0	463.7	502.3	472.6	425.0	351.7
60°	447.8	473.6	431.0	286.3	234.8	285.3	425.0	469.6	435.9	392.3	321.0
62.5°	412.2	440.9	390.4	251.7	213.0	250.7	383.4	433.0	400.3	358.7	291.3
65°	375.5	403.2	351.7	223.9	192.2	221.9	344.8	395.3	365.6	325.0	263.5
67.5°	337.8	363.6	313.1	197.2	171.4	195.2	305.2	355.7	329.9	290.3	233.8
70°	299.2	323.0	273.4	171.4	151.6	170.4	266.5	315.1	291.3	254.6	207.1
72.5°	258.6	280.4	231.8	146.6	130.8	145.6	225.9	273.4	248.7	217.0	183.3
75°	216.0	236.8	193.2	121.9	109.0	120.9	187.3	228.9	209.0	182.3	155.5
77.5°	175.4	196.2	153.6	94.1	83.2	92.1	146.6	187.3	170.4	147.6	126.8
80°	135.7	152.6	112.9	70.3	66.4	70.3	110.0	143.7	131.8	115.9	99.1
82.5°	100.1	110.0	76.3	57.5	57.5	57.5	74.3	102.0	97.1	86.2	75.3
85°	68.4	68.4	51.5	43.6	43.6	43.6	50.5	60.4	63.4	57.5	57.5
87.5°	28.7	29.7	26.8	23.8	22.8	23.8	25.8	24.8	24.8	27.7	34.7
90°	1.0	12.9	21.8	26.8	27.7	25.8	19.8	11.9	1.0	16.8	30.7
92.5°	6.9	27.7	25.8	33.7	34.7	31.7	26.8	21.8	4.0	30.7	32.7
95°	26.8	32.7	50.5	51.5	45.6	43.6	49.5	30.7	20.8	41.6	83.2
97.5°	42.6	49.5	45.6	59.4	67.4	59.4	47.6	47.6	39.6	64.4	97.1
100°	58.5	52.5	46.6	51.5	59.4	52.5	44.6	52.5	55.5	75.3	118.9
102.5°	73.3	58.5	58.5	50.5	51.5	49.5	56.5	57.5	69.4	85.2	146.6
105°	85.2	60.4	61.4	57.5	56.5	57.5	61.4	61.4	82.2	94.1	159.5
107.5°	96.1	62.4	60.4	63.4	64.4	63.4	60.4	62.4	94.1	100.1	162.5
110°	105.0	63.4	61.4	63.4	66.4	63.4	61.4	64.4	104.0	106.0	164.5



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CATALOG NUMBER: 4WSL-LD2-30-UPL15-UNV-L830-CD1-U

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	112.9	64.4	63.4	62.4	65.4	62.4	63.4	66.4	112.0	109.0	164.5
115°	117.9	65.4	63.4	63.4	64.4	63.4	64.4	67.4	117.9	110.0	162.5
117.5°	120.9	67.4	64.4	65.4	66.4	65.4	64.4	69.4	121.9	113.9	161.5
120°	122.9	74.3	64.4	66.4	67.4	66.4	64.4	75.3	122.9	115.9	157.5
122.5°	121.9	77.3	65.4	66.4	68.4	66.4	65.4	78.3	121.9	114.9	152.6
125°	119.9	80.3	65.4	65.4	67.4	66.4	66.4	80.3	119.9	112.9	145.6
127.5°	115.9	87.2	65.4	66.4	66.4	66.4	66.4	86.2	115.9	113.9	138.7
130°	111.0	92.1	63.4	67.4	66.4	68.4	65.4	92.1	111.0	111.0	132.8
132.5°	106.0	94.1	63.4	67.4	67.4	68.4	64.4	94.1	106.0	107.0	126.8
135°	101.1	96.1	67.4	66.4	67.4	67.4	68.4	96.1	101.1	103.0	122.9
137.5°	96.1	97.1	72.3	63.4	66.4	64.4	74.3	97.1	97.1	97.1	116.9
140°	91.1	96.1	76.3	61.4	62.4	63.4	78.3	97.1	93.1	94.1	107.0
142.5°	85.2	93.1	79.3	66.4	61.4	68.4	81.2	96.1	87.2	91.1	102.0
145°	79.3	90.2	85.2	73.3	67.4	76.3	88.2	93.1	81.2	89.2	99.1
147.5°	74.3	85.2	86.2	77.3	74.3	80.3	89.2	89.2	75.3	85.2	92.1
150°	71.3	80.3	83.2	80.3	77.3	84.2	87.2	82.2	71.3	82.2	86.2
152.5°	70.3	76.3	76.3	84.2	83.2	88.2	80.3	78.3	69.4	79.3	78.3
155°	70.3	75.3	73.3	77.3	81.2	81.2	76.3	76.3	69.4	79.3	74.3
157.5°	69.4	76.3	73.3	72.3	74.3	76.3	76.3	77.3	69.4	77.3	74.3
160°	69.4	77.3	74.3	71.3	72.3	75.3	77.3	77.3	69.4	77.3	75.3
162.5°	69.4	75.3	75.3	72.3	72.3	76.3	77.3	76.3	69.4	75.3	77.3
165°	69.4	75.3	76.3	74.3	73.3	78.3	77.3	74.3	68.4	74.3	78.3
167.5°	69.4	73.3	77.3	75.3	75.3	78.3	78.3	73.3	68.4	71.3	78.3
170°	69.4	72.3	76.3	75.3	76.3	79.3	76.3	72.3	69.4	70.3	75.3
172.5°	69.4	70.3	74.3	75.3	75.3	77.3	74.3	70.3	69.4	68.4	72.3
175°	68.4	70.3	72.3	72.3	71.3	74.3	71.3	69.4	68.4	67.4	69.4
177.5°	67.4	68.4	70.3	70.3	68.4	70.3	68.4	67.4	67.4	66.4	68.4
180°	66.4	66.4	66.4	66.4	66.4	66.4	66.4	66.4	66.4	66.4	66.4



TEST NUMBER: P192485

CATALOG NUMBER: 4WSL-LD2-30-UPL15-UNV-L830-CD1-U

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	862.9	862.9	862.9	862.9	862.9	862.9
2.5°	856.0	849.1	851.1	857.0	856.0	869.9
5°	847.1	844.1	844.1	853.0	852.0	869.9
7.5°	837.2	832.2	835.2	845.1	848.1	867.9
10°	824.3	820.3	821.3	836.2	841.1	865.9
12.5°	811.4	807.5	810.4	824.3	831.2	861.0
15°	796.6	789.6	797.6	812.4	821.3	854.0
17.5°	778.7	770.8	778.7	798.5	809.4	846.1
20°	762.9	755.0	759.9	780.7	795.6	837.2
22.5°	745.0	735.1	739.1	761.9	780.7	825.3
25°	725.2	712.3	718.3	743.1	763.9	810.4
27.5°	699.5	677.7	692.5	723.2	743.1	795.6
30°	663.8	635.1	658.8	701.5	724.2	778.7
32.5°	622.2	591.5	617.2	674.7	702.4	759.9
35°	581.6	554.8	578.6	647.0	680.6	739.1
37.5°	545.9	521.1	542.9	615.3	656.9	716.3
40°	509.2	486.5	508.3	581.6	633.1	692.5
42.5°	475.6	453.8	474.6	547.9	607.3	666.8
45°	439.9	404.2	437.9	513.2	579.6	639.0
47.5°	402.2	364.6	399.3	479.5	551.8	610.3
50°	367.6	333.9	365.6	444.8	522.1	579.6
52.5°	336.9	308.1	335.9	410.2	491.4	547.9
55°	308.1	289.3	309.1	378.5	462.7	515.2
57.5°	285.3	272.5	286.3	347.8	431.0	482.5
60°	265.5	257.6	266.5	317.0	397.3	447.8
62.5°	243.7	240.8	243.7	287.3	364.6	412.2
65°	224.9	227.9	224.9	260.6	329.9	375.5
67.5°	207.1	214.0	208.1	231.8	295.2	337.8
70°	187.3	197.2	188.2	206.1	259.6	299.2
72.5°	166.4	178.3	166.4	181.3	221.9	258.6
75°	144.6	158.5	145.6	154.6	186.3	216.0
77.5°	120.9	129.8	122.9	125.8	151.6	175.4
80°	96.1	106.0	97.1	99.1	119.9	135.7
82.5°	80.3	87.2	81.2	75.3	89.2	100.1
85°	59.4	63.4	61.4	58.5	61.4	68.4
87.5°	36.7	38.6	36.7	36.7	31.7	28.7
90°	40.6	43.6	40.6	31.7	17.8	1.0
92.5°	41.6	45.6	41.6	34.7	33.7	6.9
95°	93.1	91.1	99.1	90.2	51.5	26.8
97.5°	144.6	165.5	149.6	108.0	69.4	42.6
100°	166.4	186.3	173.4	134.7	79.3	58.5
102.5°	192.2	214.0	200.1	157.5	89.2	73.3
105°	223.9	242.7	230.8	166.4	98.1	85.2
107.5°	240.8	269.5	245.7	170.4	104.0	96.1
110°	249.7	280.4	257.6	171.4	109.0	105.0



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	256.6	286.3	262.5	171.4	111.0	112.9
115°	256.6	291.3	262.5	168.4	113.9	117.9
117.5°	256.6	288.3	262.5	165.5	117.9	120.9
120°	247.7	287.3	255.6	161.5	118.9	122.9
122.5°	240.8	279.4	245.7	156.5	118.9	121.9
125°	227.9	268.5	233.8	150.6	116.9	119.9
127.5°	214.0	252.6	219.0	143.7	117.9	115.9
130°	201.1	234.8	204.1	136.7	113.9	111.0
132.5°	184.3	215.0	187.3	131.8	110.0	106.0
135°	168.4	196.2	172.4	127.8	105.0	101.1
137.5°	151.6	176.4	155.5	119.9	100.1	96.1
140°	131.8	151.6	135.7	111.0	97.1	91.1
142.5°	118.9	129.8	122.9	107.0	93.1	85.2
145°	111.0	116.9	113.9	103.0	91.1	79.3
147.5°	103.0	109.0	106.0	95.1	86.2	74.3
150°	100.1	100.1	104.0	88.2	83.2	71.3
152.5°	89.2	97.1	93.1	80.3	81.2	70.3
155°	76.3	80.3	80.3	77.3	81.2	70.3
157.5°	71.3	74.3	75.3	77.3	79.3	69.4
160°	71.3	72.3	75.3	78.3	78.3	69.4
162.5°	73.3	72.3	77.3	80.3	76.3	69.4
165°	75.3	74.3	79.3	81.2	74.3	69.4
167.5°	77.3	77.3	81.2	80.3	72.3	69.4
170°	77.3	79.3	81.2	77.3	71.3	69.4
172.5°	74.3	75.3	77.3	72.3	68.4	69.4
175°	70.3	69.4	72.3	69.4	68.4	68.4
177.5°	68.4	65.4	68.4	67.4	66.4	67.4
180°	66.4	66.4	66.4	66.4	66.4	66.4

(END OF REPORT)