

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: P192488

Luminaire Tested: **4WSL-LD2-30-UPL15-UNV-L850-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P192488
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-L850-CD1-U
Description: 4FT Linear Wavestream System, 15% Uplight, L850
Light Source: (238) 5000K CCT, 80 CRI LEDS
EL236N0119D850
Ballast/Driver: OSRAM
OT30W

Summary

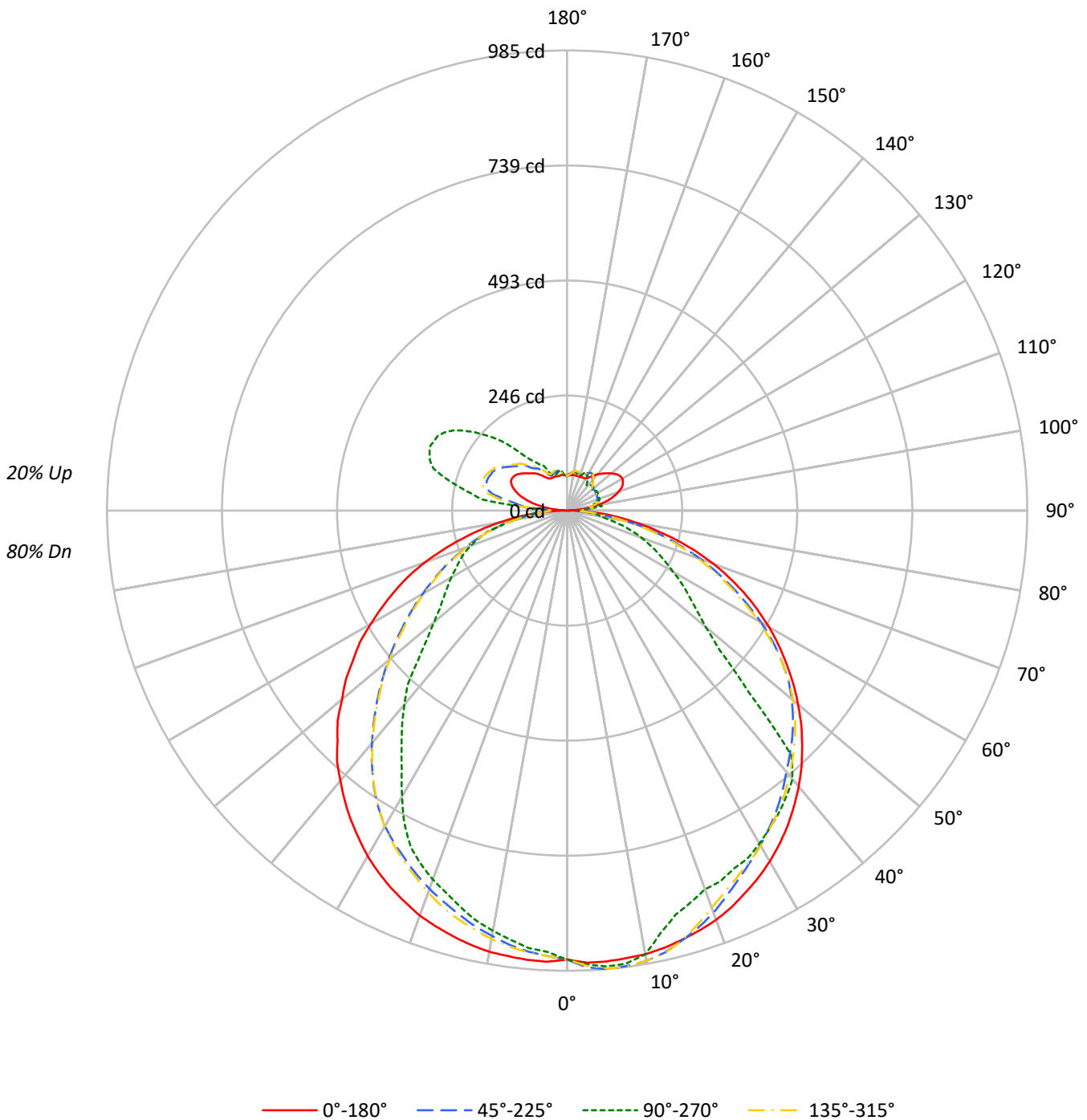
Lumens per Lamp: N/A
Luminaire Lumens: 3401.0 lumens
Efficiency: N/A
Efficacy: 136.6 lumens/watt
Spacing Criteria (0/90/45): 1.32 / 1.19 / 1.35
Luminous Opening: Rectangular (W 0.5' x L: 3.8' x H: 0')
CIE Type: Semi-Direct

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°	5444	5444	5444	5444
5°	5509	5571	5490	5346
10°	5547	5547	5516	5255
15°	5578	5255	5533	5157
20°	5621	5202	5561	5068
25°	5641	5283	5573	4959
30°	5673	5384	5587	4626
35°	5693	5464	5585	4273
40°	5703	5549	5581	4006
45°	5701	4411	5569	3607
50°	5688	3404	5543	3277
55°	5666	3139	5525	3182
60°	5650	2963	5501	3251
65°	5606	2869	5457	3402
70°	5519	2796	5373	3637
75°	5264	2657	5096	3863
80°	4933	2411	4786	3853
85°	4947	3153	4589	4589



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	91.5	2.7
10°-20°	259.5	7.6
20°-30°	392.2	11.5
30°-40°	472.0	13.9
40°-50°	480.0	14.1
50°-60°	417.8	12.3
60°-70°	325.9	9.6
70°-80°	201.5	5.9
80°-90°	70.9	2.1
90°-100°	66.7	2.0
100°-110°	129.2	3.8
110°-120°	141.4	4.2
120°-130°	124.0	3.6
130°-140°	92.9	2.7
140°-150°	63.6	1.9
150°-160°	40.5	1.2
160°-170°	23.7	0.7
170°-180°	7.6	0.2
0°-30°	743.2	21.9
0°-40°	1215.2	35.7
0°-60°	2113.1	62.1
0°-90°	2711.4	79.7
90°-120°	337.4	9.9
90°-150°	617.8	18.2
90°-180°	690.0	20.3
0°-180°	3401.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	961	961	961	961	961	
5°	969	980	965	940	969	92
15°	951	896	943	879	951	269
25°	902	845	892	793	902	417
35°	823	790	808	618	823	515
45°	712	551	695	450	712	549
55°	574	318	559	322	574	513
65°	418	214	407	254	418	413
75°	240	121	233	176	240	255
85°	76	48	71	71	76	76
90°	1	31	1	48	1	6
95°	30	51	23	102	30	31
105°	95	63	92	270	95	99
115°	131	72	131	324	131	129
125°	134	75	134	299	134	119
135°	112	75	112	218	112	87
145°	88	75	90	130	88	56
155°	78	90	77	89	78	36
165°	77	82	76	83	77	22
175°	76	79	76	77	76	7
180°	74	74	74	74	74	



TEST NUMBER: P192488

CATALOG NUMBER: 4WSL-LD2-30-UPL15-UNV-L850-CD1-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	961.0	961.0	961.0	961.0	961.0	961.0	961.0	961.0	961.0	961.0	961.0
2.5°	968.7	964.3	978.6	979.7	972.0	975.3	975.3	963.2	966.5	952.2	954.4
5°	968.7	969.8	985.3	984.2	979.7	980.9	984.2	968.7	965.4	945.5	947.8
7.5°	966.5	972.0	983.1	982.0	977.5	978.6	984.2	970.9	962.1	938.9	937.8
10°	964.3	969.8	978.6	973.1	964.3	967.6	978.6	969.8	958.8	931.2	924.6
12.5°	958.8	964.3	968.7	941.1	925.7	938.9	969.8	964.3	952.2	920.2	911.3
15°	951.1	957.7	952.2	913.5	895.9	908.0	952.2	956.6	943.3	905.8	894.8
17.5°	942.2	950.0	935.6	892.6	879.3	884.9	929.0	946.6	933.4	891.5	878.2
20°	932.3	941.1	915.8	870.5	862.8	867.2	904.7	935.6	922.4	876.0	861.7
22.5°	919.1	929.0	892.6	855.1	858.4	855.1	882.7	921.3	906.9	859.5	842.9
25°	902.5	913.5	869.4	841.8	845.1	844.0	863.9	902.5	891.5	839.6	822.0
27.5°	886.0	897.0	848.5	833.0	838.5	831.9	846.2	882.7	873.8	818.7	802.1
30°	867.2	879.3	827.5	817.6	823.1	818.7	828.6	862.8	854.0	796.6	780.0
32.5°	846.2	858.4	805.4	798.8	806.5	801.0	807.6	840.7	830.8	772.3	752.5
35°	823.1	835.2	782.3	782.3	790.0	783.4	786.7	818.7	807.6	748.1	721.6
37.5°	797.7	810.9	756.9	762.4	771.2	764.6	764.6	795.5	782.3	721.6	686.3
40°	771.2	785.6	730.4	742.5	750.3	742.5	740.3	771.2	754.7	695.1	649.9
42.5°	742.5	758.0	706.1	720.5	710.5	720.5	715.0	745.8	729.3	666.4	612.3
45°	711.6	731.5	681.9	673.0	550.6	666.4	689.6	719.4	695.1	638.8	574.8
47.5°	679.6	700.6	655.4	591.4	442.4	584.8	662.0	690.7	666.4	609.0	537.3
50°	645.4	669.7	627.8	520.8	386.2	514.1	631.1	660.9	628.9	577.0	499.8
52.5°	610.1	636.6	596.9	460.1	348.6	453.5	598.0	628.9	598.0	542.8	463.4
55°	573.7	601.3	560.5	403.8	317.8	402.7	559.4	594.7	559.4	508.6	427.0
57.5°	537.3	568.2	521.9	363.0	291.3	357.5	516.4	559.4	526.3	473.3	391.7
60°	498.7	527.4	479.9	318.9	261.5	317.8	473.3	523.0	485.5	436.9	357.5
62.5°	459.0	491.0	434.7	280.2	237.2	279.1	427.0	482.2	445.7	399.4	324.4
65°	418.2	449.1	391.7	249.4	214.0	247.1	384.0	440.2	407.1	361.9	293.5
67.5°	376.2	404.9	348.6	219.6	190.9	217.4	339.8	396.1	367.4	323.3	260.4
70°	333.2	359.7	304.5	190.9	168.8	189.8	296.8	350.9	324.4	283.6	230.6
72.5°	288.0	312.2	258.2	163.3	145.6	162.2	251.6	304.5	276.9	241.6	204.1
75°	240.5	263.7	215.1	135.7	121.4	134.6	208.5	254.9	232.8	203.0	173.2
77.5°	195.3	218.5	171.0	104.8	92.7	102.6	163.3	208.5	189.8	164.4	141.2
80°	151.2	169.9	125.8	78.3	73.9	78.3	122.5	160.0	146.7	129.1	110.3
82.5°	111.4	122.5	85.0	64.0	64.0	64.0	82.7	113.6	108.1	96.0	83.9
85°	76.1	76.1	57.4	48.5	48.5	48.5	56.3	67.3	70.6	64.0	64.0
87.5°	32.0	33.1	29.8	26.5	25.4	26.5	28.7	27.6	27.6	30.9	38.6
90°	1.1	14.3	24.3	29.8	30.9	28.7	22.1	13.2	1.1	18.8	34.2
92.5°	7.7	30.9	28.7	37.5	38.6	35.3	29.8	24.3	4.4	34.2	36.4
95°	29.8	36.4	56.3	57.4	50.8	48.5	55.2	34.2	23.2	46.3	92.7
97.5°	47.4	55.2	50.8	66.2	75.0	66.2	53.0	53.0	44.1	71.7	108.1
100°	65.1	58.5	51.9	57.4	66.2	58.5	49.6	58.5	61.8	83.9	132.4
102.5°	81.6	65.1	65.1	56.3	57.4	55.2	62.9	64.0	77.2	94.9	163.3
105°	94.9	67.3	68.4	64.0	62.9	64.0	68.4	68.4	91.6	104.8	177.6
107.5°	107.0	69.5	67.3	70.6	71.7	70.6	67.3	69.5	104.8	111.4	180.9
110°	117.0	70.6	68.4	70.6	73.9	70.6	68.4	71.7	115.8	118.1	183.2



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CATALOG NUMBER: 4WSL-LD2-30-UPL15-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°	125.8	71.7	70.6	69.5	72.8	69.5	70.6	73.9	124.7	121.4	183.2
115°	131.3	72.8	70.6	70.6	71.7	70.6	71.7	75.0	131.3	122.5	180.9
117.5°	134.6	75.0	71.7	72.8	73.9	72.8	71.7	77.2	135.7	126.9	179.8
120°	136.8	82.7	71.7	73.9	75.0	73.9	71.7	83.9	136.8	129.1	175.4
122.5°	135.7	86.1	72.8	73.9	76.1	73.9	72.8	87.2	135.7	128.0	169.9
125°	133.5	89.4	72.8	72.8	75.0	73.9	73.9	89.4	133.5	125.8	162.2
127.5°	129.1	97.1	72.8	73.9	73.9	73.9	73.9	96.0	129.1	126.9	154.5
130°	123.6	102.6	70.6	75.0	73.9	76.1	72.8	102.6	123.6	123.6	147.8
132.5°	118.1	104.8	70.6	75.0	75.0	76.1	71.7	104.8	118.1	119.2	141.2
135°	112.5	107.0	75.0	73.9	75.0	75.0	76.1	107.0	112.5	114.7	136.8
137.5°	107.0	108.1	80.5	70.6	73.9	71.7	82.7	108.1	108.1	108.1	130.2
140°	101.5	107.0	85.0	68.4	69.5	70.6	87.2	108.1	103.7	104.8	119.2
142.5°	94.9	103.7	88.3	73.9	68.4	76.1	90.5	107.0	97.1	101.5	113.6
145°	88.3	100.4	94.9	81.6	75.0	85.0	98.2	103.7	90.5	99.3	110.3
147.5°	82.7	94.9	96.0	86.1	82.7	89.4	99.3	99.3	83.9	94.9	102.6
150°	79.4	89.4	92.7	89.4	86.1	93.8	97.1	91.6	79.4	91.6	96.0
152.5°	78.3	85.0	85.0	93.8	92.7	98.2	89.4	87.2	77.2	88.3	87.2
155°	78.3	83.9	81.6	86.1	90.5	90.5	85.0	85.0	77.2	88.3	82.7
157.5°	77.2	85.0	81.6	80.5	82.7	85.0	85.0	86.1	77.2	86.1	82.7
160°	77.2	86.1	82.7	79.4	80.5	83.9	86.1	86.1	77.2	86.1	83.9
162.5°	77.2	83.9	83.9	80.5	80.5	85.0	86.1	85.0	77.2	83.9	86.1
165°	77.2	83.9	85.0	82.7	81.6	87.2	86.1	82.7	76.1	82.7	87.2
167.5°	77.2	81.6	86.1	83.9	83.9	87.2	87.2	81.6	76.1	79.4	87.2
170°	77.2	80.5	85.0	83.9	85.0	88.3	85.0	80.5	77.2	78.3	83.9
172.5°	77.2	78.3	82.7	83.9	83.9	86.1	82.7	78.3	77.2	76.1	80.5
175°	76.1	78.3	80.5	80.5	79.4	82.7	79.4	77.2	76.1	75.0	77.2
177.5°	75.0	76.1	78.3	78.3	76.1	78.3	76.1	75.0	75.0	73.9	76.1
180°	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9



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CATALOG NUMBER: 4WSL-LD2-30-UPL15-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	961.0	961.0	961.0	961.0	961.0	961.0
2.5°	953.3	945.5	947.8	954.4	953.3	968.7
5°	943.3	940.0	940.0	950.0	948.9	968.7
7.5°	932.3	926.8	930.1	941.1	944.4	966.5
10°	918.0	913.5	914.7	931.2	936.7	964.3
12.5°	903.6	899.2	902.5	918.0	925.7	958.8
15°	887.1	879.3	888.2	904.7	914.7	951.1
17.5°	867.2	858.4	867.2	889.3	901.4	942.2
20°	849.6	840.7	846.2	869.4	886.0	932.3
22.5°	829.7	818.7	823.1	848.5	869.4	919.1
25°	807.6	793.3	799.9	827.5	850.7	902.5
27.5°	778.9	754.7	771.2	805.4	827.5	886.0
30°	739.2	707.2	733.7	781.2	806.5	867.2
32.5°	692.9	658.7	687.4	751.4	782.3	846.2
35°	647.6	617.9	644.3	720.5	758.0	823.1
37.5°	607.9	580.3	604.6	685.2	731.5	797.7
40°	567.1	541.7	566.0	647.6	705.0	771.2
42.5°	529.6	505.3	528.5	610.1	676.3	742.5
45°	489.9	450.2	487.7	571.5	645.4	711.6
47.5°	447.9	406.0	444.6	534.0	614.5	679.6
50°	409.3	371.8	407.1	495.4	581.5	645.4
52.5°	375.1	343.1	374.0	456.8	547.2	610.1
55°	343.1	322.2	344.2	421.5	515.3	573.7
57.5°	317.8	303.4	318.9	387.3	479.9	537.3
60°	295.7	286.9	296.8	353.1	442.4	498.7
62.5°	271.4	268.1	271.4	320.0	406.0	459.0
65°	250.5	253.8	250.5	290.2	367.4	418.2
67.5°	230.6	238.3	231.7	258.2	328.8	376.2
70°	208.5	219.6	209.6	229.5	289.1	333.2
72.5°	185.4	198.6	185.4	201.9	247.1	288.0
75°	161.1	176.5	162.2	172.1	207.4	240.5
77.5°	134.6	144.5	136.8	140.1	168.8	195.3
80°	107.0	118.1	108.1	110.3	133.5	151.2
82.5°	89.4	97.1	90.5	83.9	99.3	111.4
85°	66.2	70.6	68.4	65.1	68.4	76.1
87.5°	40.8	43.0	40.8	40.8	35.3	32.0
90°	45.2	48.5	45.2	35.3	19.9	1.1
92.5°	46.3	50.8	46.3	38.6	37.5	7.7
95°	103.7	101.5	110.3	100.4	57.4	29.8
97.5°	161.1	184.3	166.6	120.3	77.2	47.4
100°	185.4	207.4	193.1	150.1	88.3	65.1
102.5°	214.0	238.3	222.9	175.4	99.3	81.6
105°	249.4	270.3	257.1	185.4	109.2	94.9
107.5°	268.1	300.1	273.6	189.8	115.8	107.0
110°	278.0	312.2	286.9	190.9	121.4	117.0



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	285.8	318.9	292.4	190.9	123.6	125.8
115°	285.8	324.4	292.4	187.6	126.9	131.3
117.5°	285.8	321.1	292.4	184.3	131.3	134.6
120°	275.8	320.0	284.7	179.8	132.4	136.8
122.5°	268.1	311.1	273.6	174.3	132.4	135.7
125°	253.8	299.0	260.4	167.7	130.2	133.5
127.5°	238.3	281.3	243.8	160.0	131.3	129.1
130°	224.0	261.5	227.3	152.3	126.9	123.6
132.5°	205.2	239.4	208.5	146.7	122.5	118.1
135°	187.6	218.5	192.0	142.3	117.0	112.5
137.5°	168.8	196.4	173.2	133.5	111.4	107.0
140°	146.7	168.8	151.2	123.6	108.1	101.5
142.5°	132.4	144.5	136.8	119.2	103.7	94.9
145°	123.6	130.2	126.9	114.7	101.5	88.3
147.5°	114.7	121.4	118.1	105.9	96.0	82.7
150°	111.4	111.4	115.8	98.2	92.7	79.4
152.5°	99.3	108.1	103.7	89.4	90.5	78.3
155°	85.0	89.4	89.4	86.1	90.5	78.3
157.5°	79.4	82.7	83.9	86.1	88.3	77.2
160°	79.4	80.5	83.9	87.2	87.2	77.2
162.5°	81.6	80.5	86.1	89.4	85.0	77.2
165°	83.9	82.7	88.3	90.5	82.7	77.2
167.5°	86.1	86.1	90.5	89.4	80.5	77.2
170°	86.1	88.3	90.5	86.1	79.4	77.2
172.5°	82.7	83.9	86.1	80.5	76.1	77.2
175°	78.3	77.2	80.5	77.2	76.1	76.1
177.5°	76.1	72.8	76.1	75.0	73.9	75.0
180°	73.9	73.9	73.9	73.9	73.9	73.9

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