



Les Industries Spectralux Inc.
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2750 Sabourin, Saint-Laurent (Quebec) H4S 1M2 Canada
 Tel.: (514) 332-0082 Fax: (514) 332-3590 www.spectralux.ca

ISO/IEC 17025
NVLAP[®]
 NVLAP LAB CODE: 200899-0

Moving Mirror Goniophotometer Test Report

Standard(s): IESNA LM-15-03, IES LM-79-08, ANSI C82.77-2002

Customer Artemide Canada Ltd., 11105 Renaude-Lapointe, Montreal, Québec, Canada, H1J2T4

General Information		SSL Details		Driver Details	
Test Report	S1709222-R1	Description	929000776213 LEDs	Type	Commercial
Test Date	22 September 2017	Serial Number	SRIS-2766-2	Description	36.4SSL-CY1312
Report Date	19 October 2017	Photometric Method	Absolute	Manufacturer	Advance
Ambient	24.2°C	Lamp Lumens	-1	Catalog No.	XI036C100V054DSM5
Humidity	40.5 %	Test Position	Vertical Base Up	Voltage	120.00 V
Lamp Type	SSL	Nominal Color	3000K	Power Factor	0.9000

Luminaire Data

General Information		Optics		Aperture (feet)	
Manufacturer	Artemide	Reflector	None	X	-1.9375
Name	TAGORA 570 LED	Housing	Cylindrical Aluminum Shape	Y	-1.9375
Catalog No.	MTA5_830DFL	Lens	Acrylic Diffuser	Z	0.0000

Lamp Stabilization Time: 1 hour 35 minutes

Approved Signatory: Chrisnel Blot

Signature:



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Luminaire Test Method

Precise installation and alignment of the luminaire to the rotation axis of the photometer is governed by a servomotor controlled via a microcontroller. A laser is used to validate the luminaire positioning. Before photometric measurements are taken, luminaire is operated long enough to reach stabilization and temperature equilibrium.

All movement commands issued to the photometer axes are mediated by the software to ensure the motion is within the limits of operation. The photometric detector used is a silicon detector corrected to closely match the spectral luminous efficiency photopic curve with a quality index less than 1.5%. Proper shielding is incorporated to the photometric test bench such that only the light from the unit under test is measured.

Luminous intensity measurements are performed at a distance great enough so that the inverse-square law applies. During each measurement the computer records the luminous intensity associated to the corresponding angles of radiation, as well as input electrical operational parameters and temperature measurements. Candela values are reported in IES format as per LM-63.

Equipment, reference standards are traceable to National Institute of Standards and Technology (NIST) and National Research Council of Canada (NRC).





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Electrical Equipment

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Power Supply	California Instruments	801RP	05816	N.P.C.R.	N.P.C.R.
Input Power Meter	Yokogawa	WT210	91L236539	2017/05/05	2018/05/05
Output Power Meter	N/A	N/A	N/A	N.P.C.R.	N.P.C.R.

Photometric Equipment

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Photometer	N/A	N/A	N/A	N.P.C.R.	N.P.C.R.
Photodetector	INPHORA	IPR-PDET 19	110802	2016/10/05	2017/10/05

Environment Equipment

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Temperature Humidity Sensor	Omega	HH311	051202970	2016/10/20	2017/10/20

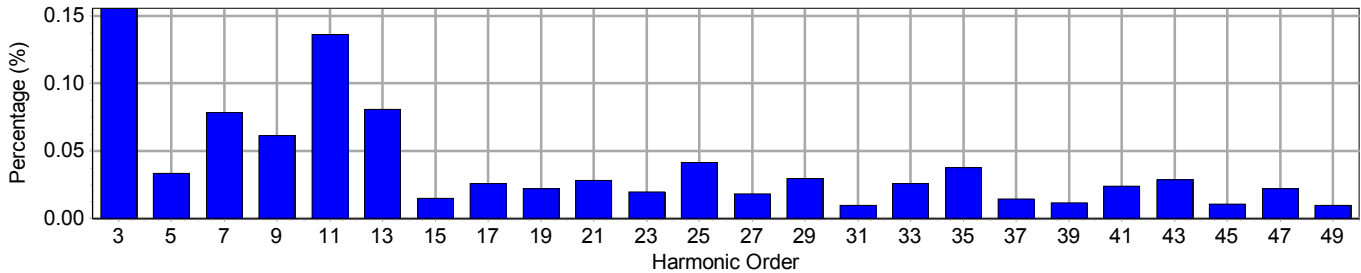


Electrical Measurements

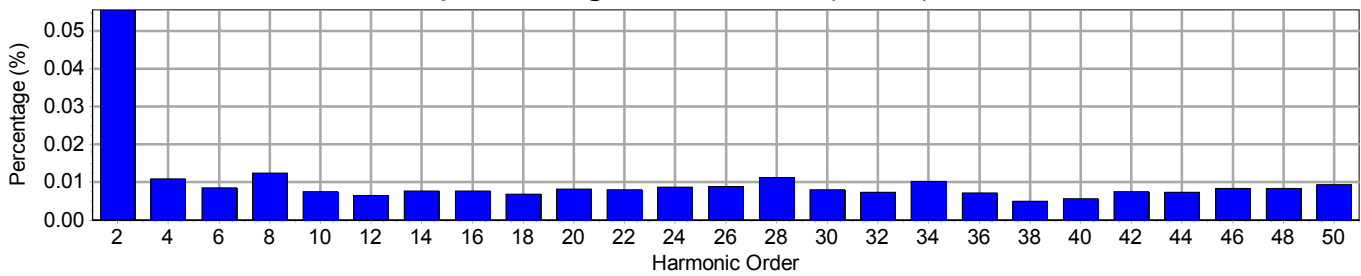
Input

Frequency	60 Hz	Active Power	27.18 W	THDV [ANSI]	0.27 %
Voltage	120.0 V(rms)	Apparent Power	27.33 VA	THDA [ANSI]	7.45 %
Current	0.2276 A(rms)	Power Factor	0.995	Max. Harmonic At	5th order

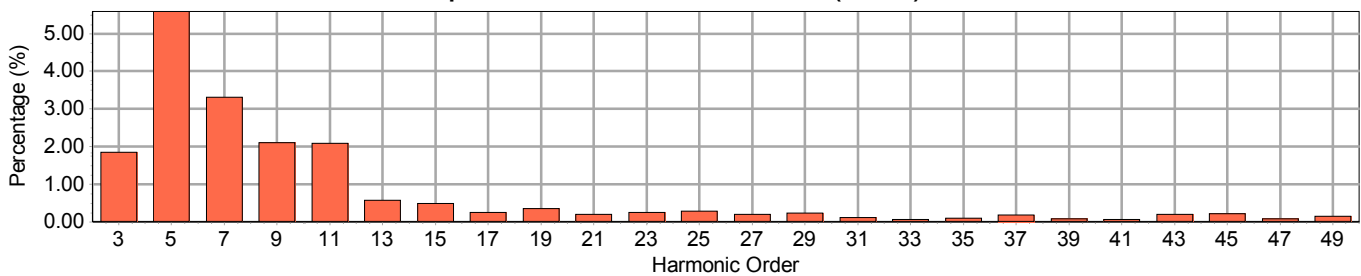
Input Voltage Harmonics (Odd)



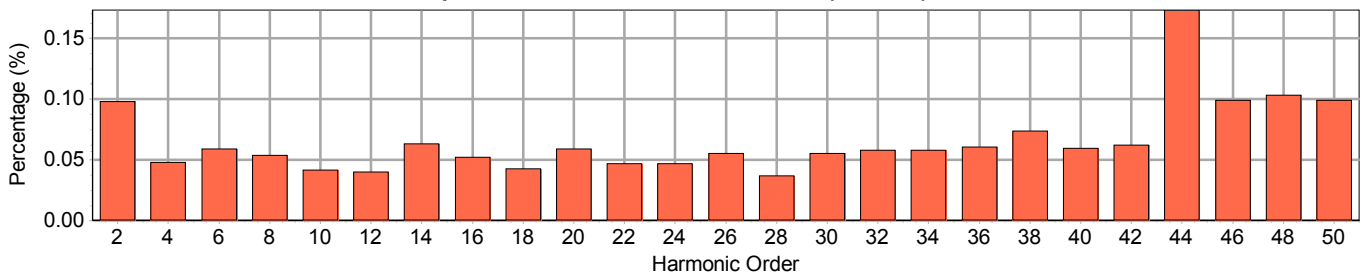
Input Voltage Harmonics (Even)



Input Current Harmonics (Odd)



Input Current Harmonics (Even)





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Harmonic Measurements

Odd Harmonics				Even Harmonics			
Harmonic Order	Frequency (HZ)	Voltage Harmonics (%)	Current Harmonics (%)	Harmonic Order	Frequency (HZ)	Voltage Harmonics (%)	Current Harmonics (%)
1	60	100.000	100.000	2	120	0.056	0.098
3	180	0.156	1.841	4	240	0.011	0.048
5	300	0.033	5.599	6	360	0.009	0.059
7	420	0.079	3.305	8	480	0.013	0.053
9	540	0.061	2.094	10	600	0.008	0.041
11	660	0.136	2.077	12	720	0.007	0.040
13	780	0.081	0.574	14	840	0.008	0.063
15	900	0.015	0.484	16	960	0.008	0.052
17	1020	0.026	0.253	18	1080	0.007	0.043
19	1140	0.022	0.349	20	1200	0.008	0.059
21	1260	0.028	0.195	22	1320	0.008	0.047
23	1380	0.020	0.251	24	1440	0.009	0.047
25	1500	0.042	0.279	26	1560	0.009	0.055
27	1620	0.018	0.198	28	1680	0.011	0.037
29	1740	0.030	0.238	30	1800	0.008	0.055
31	1860	0.010	0.110	32	1920	0.007	0.058
33	1980	0.026	0.058	34	2040	0.010	0.058
35	2100	0.038	0.099	36	2160	0.007	0.061
37	2220	0.014	0.187	38	2280	0.005	0.074
39	2340	0.011	0.082	40	2400	0.006	0.060
41	2460	0.024	0.052	42	2520	0.008	0.062
43	2580	0.029	0.192	44	2640	0.007	0.174
45	2700	0.011	0.207	46	2760	0.008	0.099
47	2820	0.022	0.078	48	2880	0.008	0.103
49	2940	0.010	0.149	50	3000	0.009	0.099



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NVLAP LAB CODE: 200899-0

Photometric Report: S1709222-R1

Prepared for: Artemide Canada Ltd. · Test Date: 22 September 2017

Luminaire: TAGORA 570 LED · Lumcat: MTA5_830DFL

Coefficients of Utilization - Zonal Cavity Method

RCR	0.9				0.8				0.7				0.5			0.1			0	
	RW	0.7	0.5	0.3	0.1	0.7	0.5	0.3	0.1	0.7	0.5	0.3	0.1	0.5	0.3	0.1	0.5	0.3	0.1	0
0	122	122	122	122	119	119	119	119	116	116	116	116	111	111	111	101	101	101	99	0
1	112	107	103	99	109	105	101	97	106	102	99	95	98	95	92	90	88	86	84	0
2	102	94	86	80	99	92	85	79	97	90	84	78	86	81	76	79	76	73	71	0
3	93	82	74	67	91	80	73	66	88	79	71	66	76	69	64	70	66	62	60	0
4	86	73	64	57	83	71	63	56	81	70	62	56	67	60	55	63	57	53	51	0
5	79	65	55	49	76	64	55	48	74	63	54	48	60	53	47	56	51	46	44	0
6	73	58	49	42	71	57	48	42	69	56	48	42	54	47	41	51	45	41	38	0
7	67	53	44	37	65	52	43	37	64	51	43	37	49	42	37	47	41	36	34	0
8	62	48	39	33	61	47	39	33	59	47	39	33	45	38	33	43	37	32	30	0
9	58	44	36	30	57	43	35	30	55	43	35	30	42	34	29	39	33	29	27	0
10	55	41	32	27	53	40	32	27	52	39	32	27	38	31	27	36	31	26	25	0

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0 - 10	86	3.32	3.32
10 - 20	248	9.58	9.58
20 - 30	381	14.71	14.71
30 - 40	466	18.02	18.02
40 - 50	486	18.79	18.79
50 - 60	432	16.70	16.70
60 - 70	307	11.84	11.84
70 - 80	134	5.17	5.17
80 - 90	26	1.00	1.00
90 - 120	10	0.38	0.38
90 - 130	13	0.51	0.51
90 - 150	19	0.73	0.73
90 - 180	23	0.88	0.88
0 - 180	2588	100.00	100.00

Average Luminance (Cd/m²)

Angle	0 Degree	45 Degree	90 Degree
45.0	895	895	895
55.0	847	847	847
65.0	737	737	737
75.0	480	480	480
85.0	267	267	267

Luminaire Luminous Flux: 2588

Measured Input Power: 27.18 W

Total Luminaire Efficiency: N/A

Luminaire Luminous Efficacy: 95.2 lm/W

Luminaire Spacing Criterion (0 Degree): 1.2936

Luminaire Spacing Criterion (90 Degree): 1.2936

CIE Type: Direct



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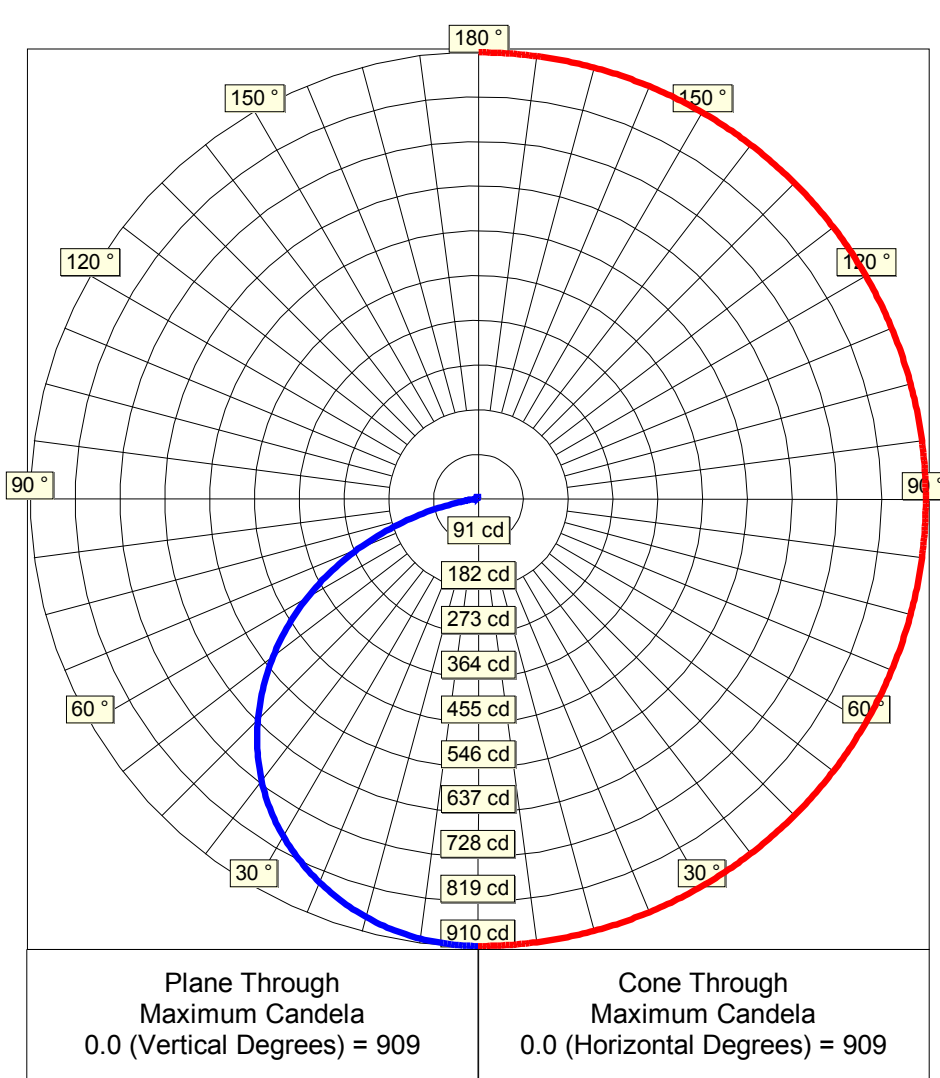
Photometric Report: S1709222-R1

Prepared for: Artemide Canada Ltd. · Test Date: 22 September 2017

Luminaire: TAGORA 570 LED · Lumcat: MTA5_830DFL

Luminous Intensity - Polar Curve for each Plane(1)

Plane Angles	Candela Values
0.0	909
2.5	908
5.0	906
7.5	902
10.0	896
12.5	889
15.0	880
17.5	869
20.0	857
22.5	843
25.0	828
27.5	811
30.0	792
32.5	771
35.0	748
37.5	723
40.0	695
42.5	665
45.0	633
47.5	599
50.0	563
52.5	525
55.0	486
57.5	445
60.0	401
62.5	358
65.0	312
67.5	265
70.0	218
72.5	170
75.0	124
77.5	83
80.0	50
82.5	31
85.0	23
87.5	15
90.0	7
92.5	3
95.0	3
97.5	3



Plane Through
Maximum Candela
0.0 (Vertical Degrees) = 909

Cone Through
Maximum Candela
0.0 (Horizontal Degrees) = 909



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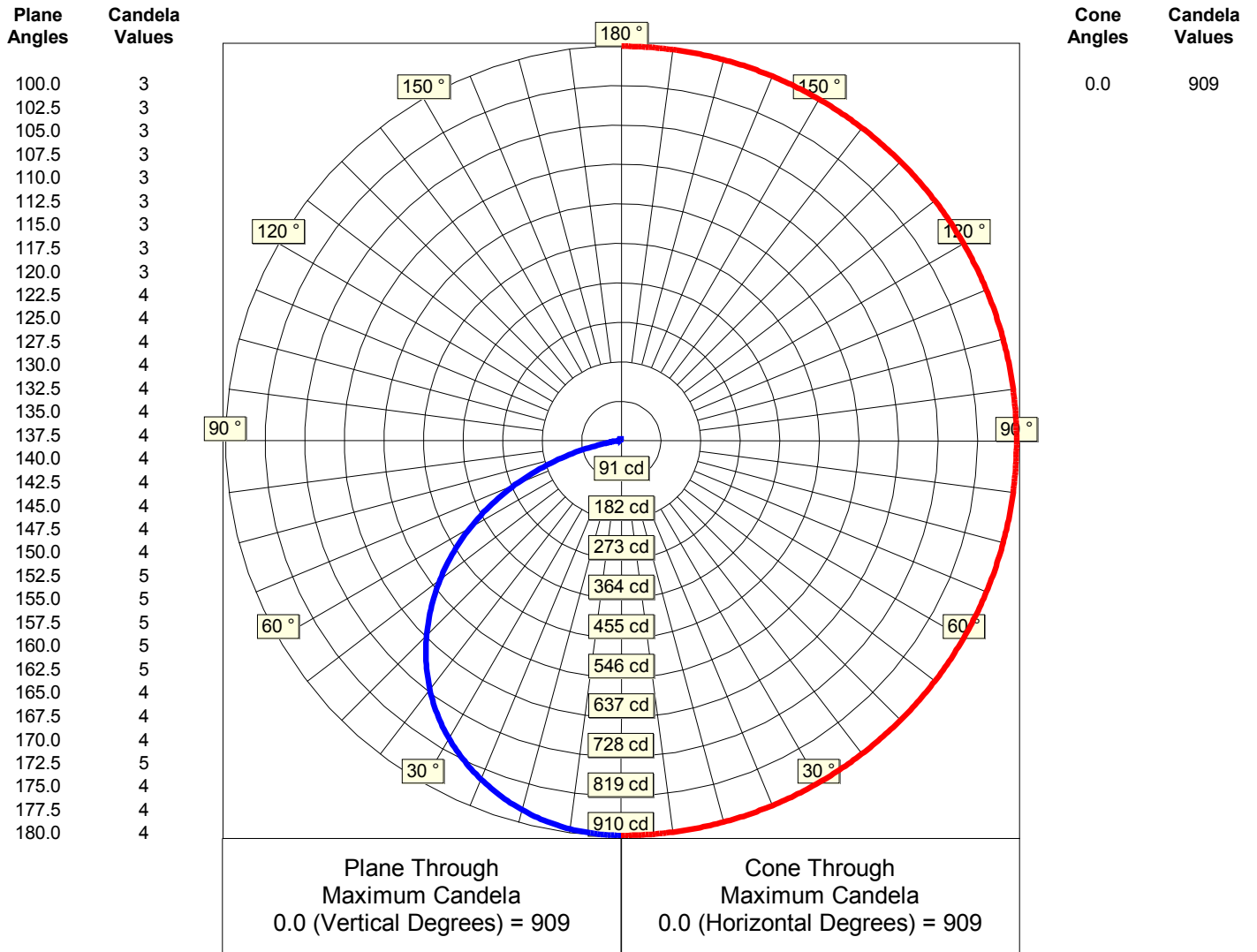
NVLAP LAB CODE: 200899-0

Photometric Report: S1709222-R1

Prepared for: Artemide Canada Ltd. · Test Date: 22 September 2017

Luminaire: TAGORA 570 LED · Lumcat: MTA5_830DFL

Luminous Intensity - Polar Curve for each Plane(2)





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IES File Headers

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IESNA:LM-63-2002
[ISSUEDATE] 22 September 2017
[TESTLAB] Spectra Lux Industries Inc.
[TEST] S1709222-R1
[MANUFAC] Artemide
[LUMCAT] MTA5_830DFL
[LUMINAIRE] TAGORA 570 LED
[LAMP] Cluster of 929000778213 LEDs c/w Advance Driver XI036C100V054DSM5 @ 120.00V
[_BURNING] Vertical Base Up (2,588 Luminaire Lumens)
[_REFLECTOR] None
[_LENS] Acrylic Diffuser
[_HOUSING] Cylindrical Aluminum Shape
[DISTRIBUTION] Direct Type - Downlight

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Candela Table

Lateral Angles

	0.0
	909
	908
	906
	902
	896
	889
	880
	869
	857
V	843
e	828
r	811
t	792
i	771
c	748
a	723
l	695
	665
	633
	599
A	563
n	525
g	486
l	445
e	401
s	358
	312
	265
	218
	170
	124
	83
	50
	31
	23
	15
	7



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Lateral Angles

	0.0
	92.5
	95.0
	97.5
	100.0
	102.5
	105.0
	107.5
	110.0
	112.5
V	115.0
e	117.5
r	120.0
t	122.5
i	125.0
c	127.5
a	130.0
l	132.5
	135.0
	137.5
	140.0
A	142.5
n	145.0
g	147.5
l	150.0
e	152.5
s	155.0
	157.5
	160.0
	162.5
	165.0
	167.5
	170.0
	172.5
	175.0
	177.5
	180.0