



Moving Mirror Goniophotometer Test Report

Standard(s): IES LM-63, IES LM-79, ANSI C82.77

Customer ANDlight, 505B Railway Street, Vancouver, BC, Canada, V6A 1A7

General Information		Lamp Details: CY4441		Driver Details: CY2023	
DUT Lab ID	SRIS 2823-17	Seasoning	0 Hour	Type	LED Power Supply
Lamp Type	LED/SSL	Test Product	SPO-P-C-C-VA-120	Manufacturer	Bulbrite
Current Mode	AC	Manufacturer	Bulbrite	Catalog No.	Integrated LED Driver
Test Report	S2008138-R1	Lamp Catalog No.	(2) G25 Frosted LED 7W	Nominal Power	14 W
Test Date	13 August 2020	Drive Current	116.7 mA	Input Voltage	120.00 V
Report Date	15 October 2020	Nominal Color	2700 K	Operating Frequency	60 Hz
Ambient	24.3 °C	Burning Position	Vertical Base Up & Down	Input Power	14.72 W

Luminaire Data

General Information		Optics		Aperture (feet)	
Manufacturer	ANDlight	Reflector	Vanilla Spun Aluminum	X	-0.4583
Name	SPOT LIGHT VOLUMES	Housing	Shades (C-C) Aluminum Profile	Y	-0.4583
Catalog No.	SPO-P-C-C-VA-120	Lens	None	Z	0.0000

Stabilization Time: 1 hour 15 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	iRDC	CIF-3000A	974998	N.P.C.R.	N.P.C.R.
Input Power Meter	Yokogawa	WT210	27E116584	2020/07/22	2021/09/22
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	2019/09/05	2020/09/05

Environment Equipment

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Temperature Humidity Sensor	Omega	HH311	120504176	2020/07/16	2021/07/16

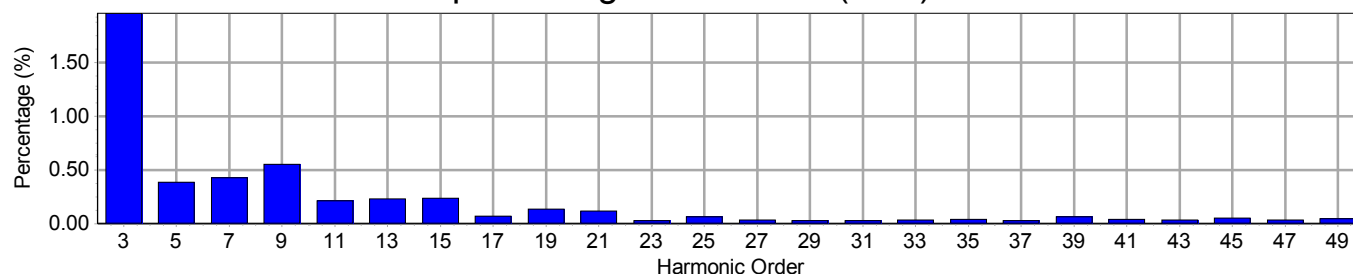


Electrical Measurements

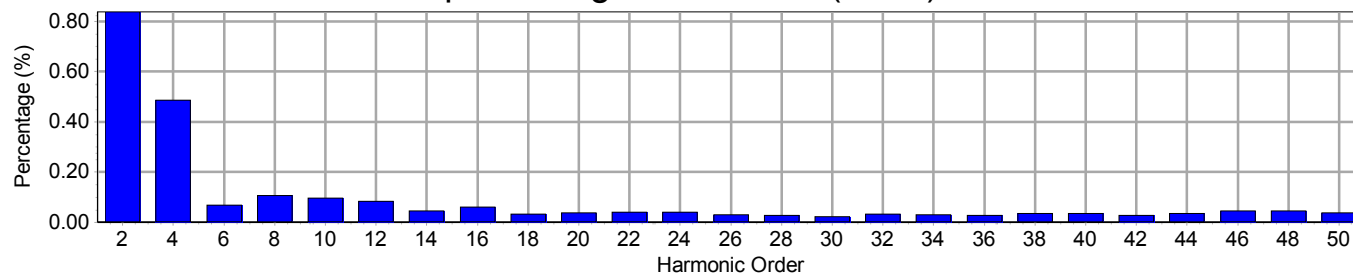
Input

Frequency	60 Hz	Active Power	14.72 W	THDV [ANSI]	2.38 %
Voltage	120.1 V(rms)	Apparent Power	15.90 VA	THDA [ANSI]	37.95 %
Current	0.1324 A(rms)	Power Factor	0.926	Max. Harmonic At	3rd order

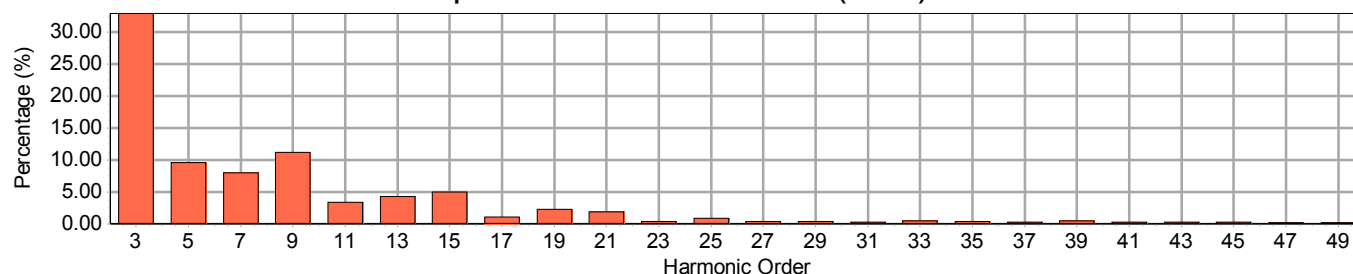
Input Voltage Harmonics (Odd)



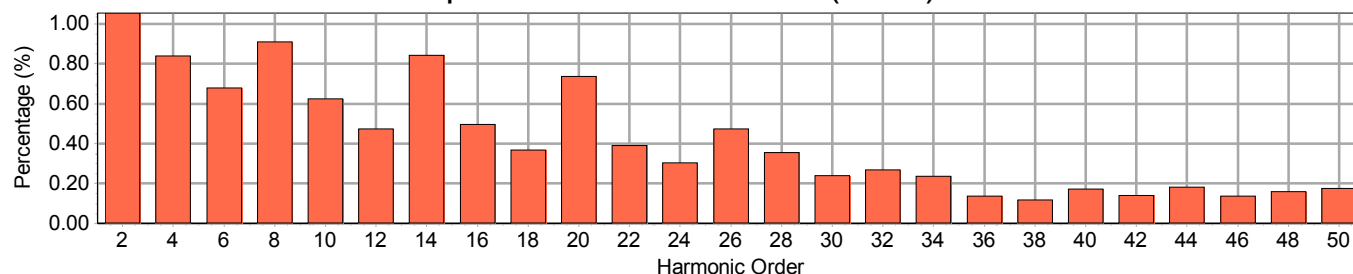
Input Voltage Harmonics (Even)



Input Current Harmonics (Odd)



Input Current Harmonics (Even)





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Lab Code: 200899-0



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	0.840	1.057
3	180	1.961	32.990	4	240	0.486	0.841
5	300	0.387	9.582	6	360	0.067	0.679
7	420	0.425	7.983	8	480	0.107	0.909
9	540	0.550	11.188	10	600	0.095	0.625
11	660	0.210	3.331	12	720	0.083	0.473
13	780	0.231	4.291	14	840	0.044	0.844
15	900	0.236	4.928	16	960	0.059	0.496
17	1020	0.066	1.103	18	1080	0.032	0.368
19	1140	0.132	2.215	20	1200	0.038	0.737
21	1260	0.118	1.813	22	1320	0.040	0.390
23	1380	0.026	0.375	24	1440	0.040	0.303
25	1500	0.062	0.861	26	1560	0.030	0.472
27	1620	0.030	0.379	28	1680	0.028	0.355
29	1740	0.027	0.371	30	1800	0.022	0.238
31	1860	0.027	0.221	32	1920	0.031	0.269
33	1980	0.032	0.500	34	2040	0.030	0.237
35	2100	0.039	0.348	36	2160	0.026	0.136
37	2220	0.027	0.272	38	2280	0.034	0.119
39	2340	0.061	0.431	40	2400	0.034	0.171
41	2460	0.042	0.231	42	2520	0.026	0.140
43	2580	0.034	0.240	44	2640	0.035	0.181
45	2700	0.048	0.295	46	2760	0.045	0.137
47	2820	0.035	0.129	48	2880	0.043	0.159
49	2940	0.045	0.163	50	3000	0.036	0.176



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Photometric Report: S2008138-R1

Prepared for: ANDlight · Test Date: 13 August 2020

Luminaire: SPOT LIGHT VOLUMES · Lumcat: SPO-P-C-C-VA-120

Coefficients of Utilization - Zonal Cavity Method

RCR	RC				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	0.5	0.3	0.1	0		
0		116	116	116	116	107	107	107	107	99	99	99	99	83	83	83	56	56	56				50		
1		107	102	98	94	99	94	91	88	91	87	84	82	74	72	70	51	50	49				44		
2		98	90	83	78	90	83	78	73	83	77	72	68	66	62	59	46	44	42				38		
3		90	79	72	65	83	74	67	62	76	69	63	58	59	54	51	41	39	37				33		
4		83	71	62	56	76	66	59	53	70	61	55	50	53	48	44	37	35	32				29		
5		76	63	55	48	70	59	51	46	65	55	48	43	48	42	38	34	31	29				26		
6		70	57	48	42	65	53	46	40	60	50	43	38	43	38	34	31	28	26				23		
7		65	52	43	37	60	48	41	35	56	45	39	34	39	34	30	29	26	23				21		
8		61	47	39	33	56	44	37	32	52	41	35	30	36	31	27	26	23	21				19		
9		56	43	35	30	52	40	33	28	48	38	31	27	33	28	24	25	21	19				17		
10		53	40	32	27	49	37	30	26	45	35	29	24	31	26	22	23	20	18				16		

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0 - 10	10	2.33	2.33
10 - 20	29	6.89	6.89
20 - 30	42	9.86	9.86
30 - 40	43	10.13	10.13
40 - 50	36	8.50	8.50
50 - 60	26	6.12	6.12
60 - 70	16	3.81	3.81
70 - 80	8	1.89	1.89
80 - 90	2	0.48	0.48
90 - 120	26	6.17	6.17
90 - 130	53	12.29	12.29
90 - 150	132	30.92	30.92
90 - 180	214	50.00	50.00
0 - 180	427	100.00	100.00

Average Luminance (Cd/m²)

Angle	0 Degree	45 Degree	90 Degree
45.0	4314	4314	4314
55.0	3347	3347	3347
65.0	2517	2517	2517
75.0	1906	1906	1906
85.0	1285	1285	1285

Luminaire Luminous Flux: 427

Measured Input Power: 14.72 W

Total Luminaire Efficiency: N/A

Luminaire Luminous Efficacy: 29.0 lm/W

Luminaire Spacing Criterion (0 Degree): 1.1654

Luminaire Spacing Criterion (90 Degree): 1.1654

Category: Up and Down

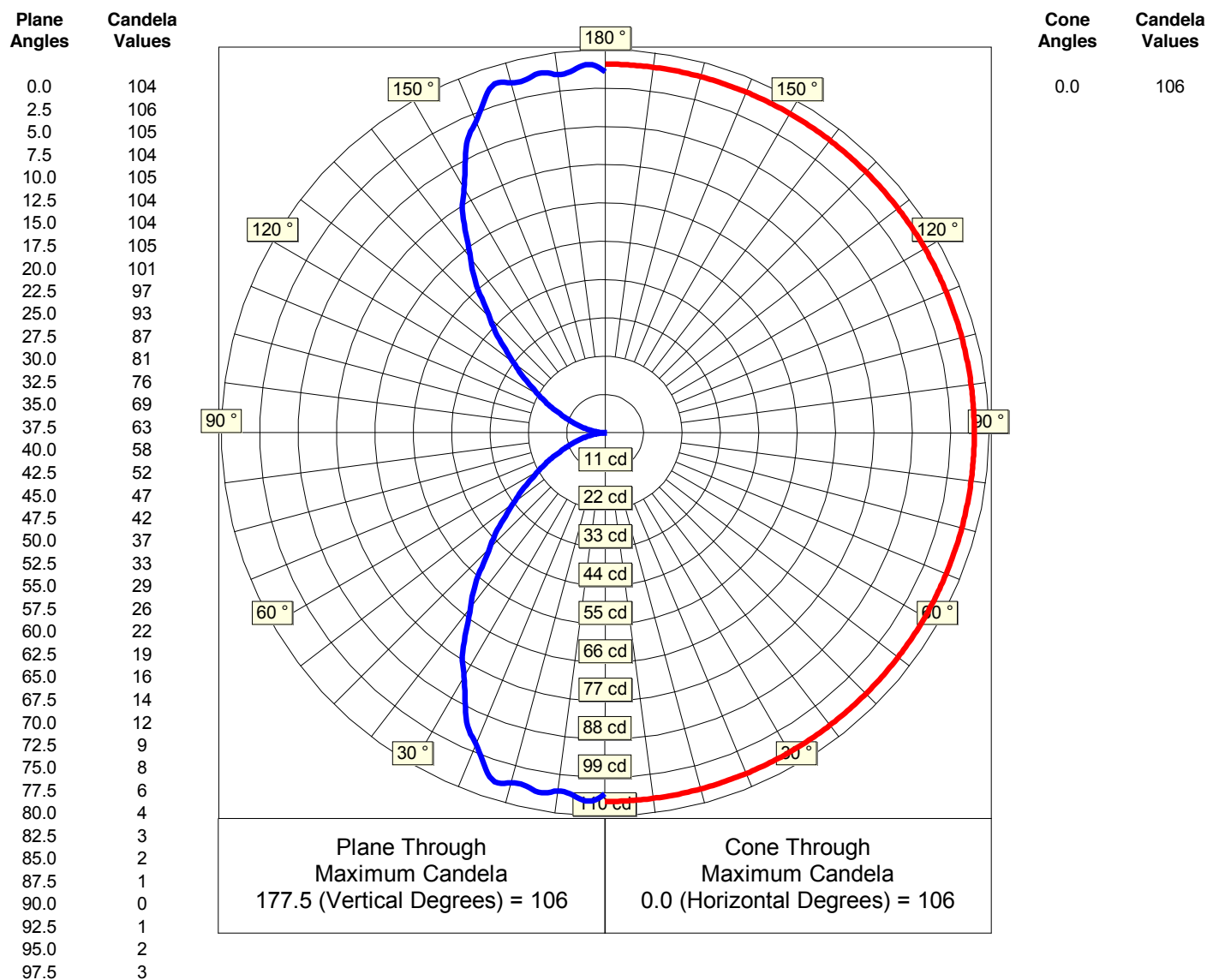


Photometric Report: S2008138-R1

Prepared for: ANDlight · Test Date: 13 August 2020

Luminaire: SPOT LIGHT VOLUMES · Lumcat: SPO-P-C-C-VA-120

Luminous Intensity - Polar Curve for each Plane(1)





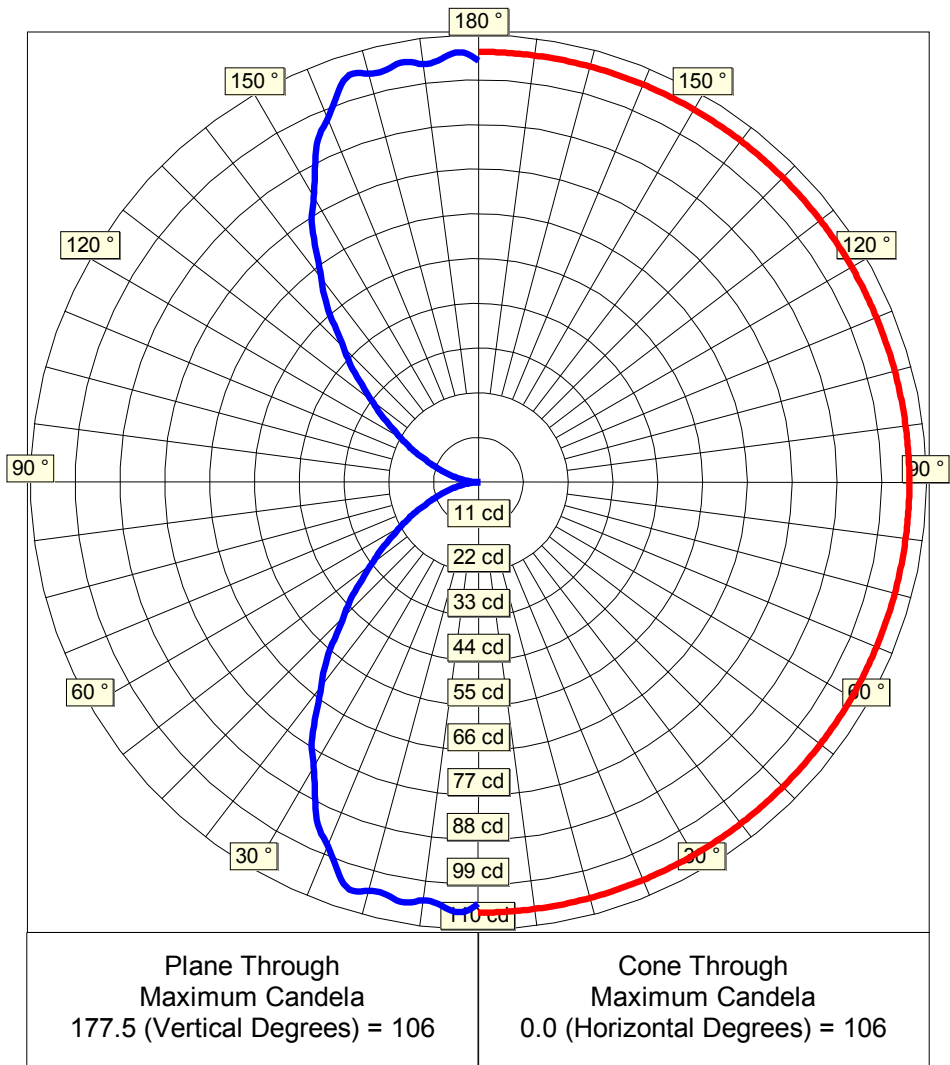
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Prepared for: ANDlight · Test Date: 13 August 2020

Luminaire: SPOT LIGHT VOLUMES · Lumcat: SPO-P-C-C-VA-120

Luminous Intensity - Polar Curve for each Plane(2)

Plane Angles	Candela Values
100.0	4
102.5	6
105.0	8
107.5	9
110.0	12
112.5	14
115.0	16
117.5	19
120.0	22
122.5	26
125.0	29
127.5	33
130.0	37
132.5	42
135.0	47
137.5	52
140.0	58
142.5	63
145.0	69
147.5	76
150.0	81
152.5	87
155.0	93
157.5	97
160.0	101
162.5	105
165.0	104
167.5	104
170.0	105
172.5	104
175.0	105
177.5	106
180.0	104



Cone Angles	Candela Values
0.0	106



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IES File Headers

IESNA:LM-63
[ISSUEDATE] 13 August 2020
[TESTLAB] Spectra Lux
[TEST] S2008138-R1
[MANUFAC] ANDlight
[LUMCAT] SPO-P-C-C-VA-120
[LUMINAIRE] SPOT LIGHT VOLUMES
[LAMP] (2) BulBrite G25 Frosted LED 7W c/w Integrated LED Driver @ 120.00V
[_BURNING] Vertical Base Up & Down (427 Luminaire Lumens)
[_REFLECTOR] Vanilla Spun Aluminum
[_LENS] None
[_HOUSING] Shades (C-C)- Aluminum Profile
[_NOMINAL COLOR] 2700 K
[_DRIVE CURRENT] 116.7 mA

Candela Table

Lateral Angles

	0.0
	0.0 104
	2.5 106
	5.0 105
	7.5 104
	10.0 105
	12.5 104
	15.0 104
	17.5 105
	20.0 101
V e r t i c a l	22.5 97
	25.0 93
	27.5 87
	30.0 81
	32.5 76
	35.0 69
	37.5 63
	40.0 58
	42.5 52
	45.0 47
A n g l e s	47.5 42
	50.0 37
	52.5 33
	55.0 29
	57.5 26
	60.0 22
	62.5 19
	65.0 16
	67.5 14
	70.0 12
	72.5 9
	75.0 8
	77.5 6
	80.0 4
	82.5 3
	85.0 2
	87.5 1
	90.0 0



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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 e r t i c a l	115.0
	117.5
	120.0
	122.5
	125.0
	127.5
	130.0
	132.5
	135.0
	137.5
A n g l e s	140.0
	142.5
	145.0
	147.5
	150.0
	152.5
	155.0
	157.5
	160.0
	162.5
	165.0
	167.5
	170.0
	172.5
	175.0
	177.5
	180.0