



Spectra Lux

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



Lab Code: 200899-0

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: CY4438		Driver Details: CY2023	
DUT Lab ID	SRIS 2823-14	Seasoning	0 Hour	Type	LED Power Supply
Lamp Type	LED/SSL	Test Product	SPO-P-B-A-VA-120	Manufacturer	Bulbrite
Current Mode	AC	Manufacturer	Bulbrite	Catalog No.	Integrated LED Driver
Test Report	S2008135-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	24.1 °C	Burning Position	Vertical Base Up & Down	Input Power	14.73 W

Luminaire Data

General Information		Optics		Aperture (feet)	
Manufacturer	ANDlight	Reflector	Vanilla Spun Aluminum	X	-1.1667
Name	SPOT LIGHT VOLUMES	Housing	Shades (B-B) - Aluminum Profile	Y	-1.1667
Catalog No.	SPO-P-B-A-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

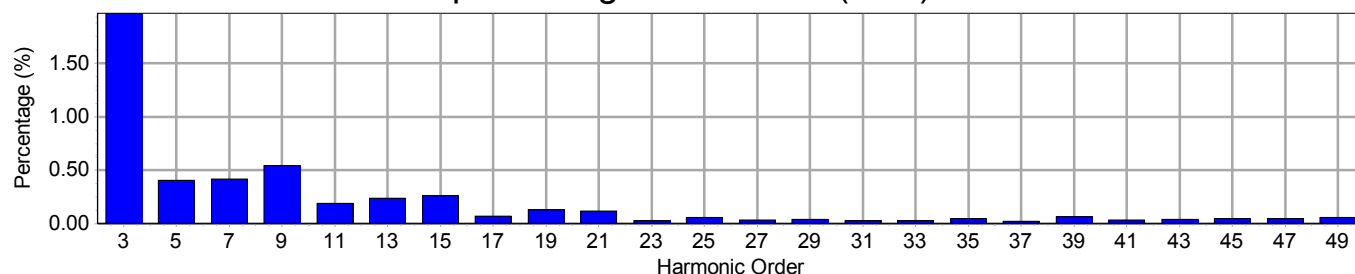


Electrical Measurements

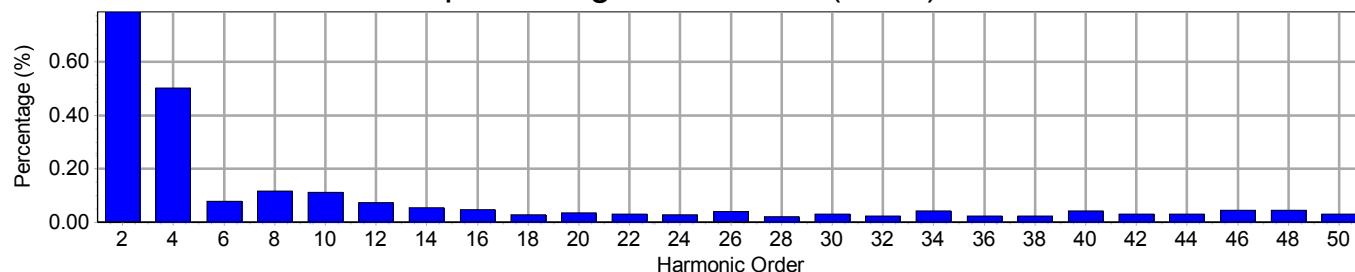
Input

Frequency	60 Hz	Active Power	14.73 W	THDV [ANSI]	2.38 %
Voltage	120.1 V(rms)	Apparent Power	15.91 VA	THDA [ANSI]	37.94 %
Current	0.1325 A(rms)	Power Factor	0.926	Max. Harmonic At	3rd order

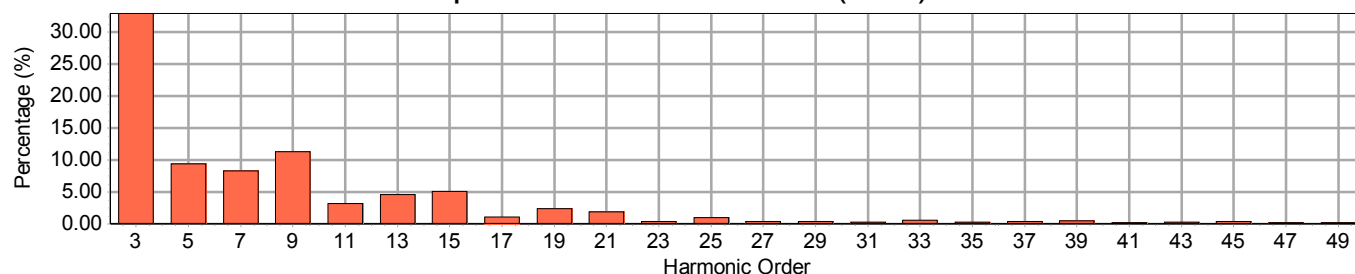
Input Voltage Harmonics (Odd)



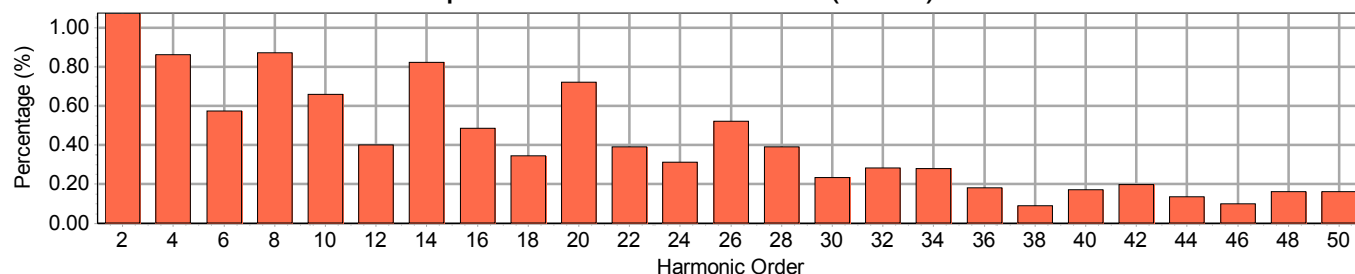
Input Voltage Harmonics (Even)



Input Current Harmonics (Odd)



Input Current Harmonics (Even)





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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	0.789	1.075
3	180	1.971	32.912	4	240	0.502	0.862
5	300	0.404	9.327	6	360	0.078	0.574
7	420	0.415	8.234	8	480	0.116	0.872
9	540	0.544	11.272	10	600	0.112	0.658
11	660	0.189	3.199	12	720	0.073	0.400
13	780	0.235	4.536	14	840	0.053	0.822
15	900	0.260	5.006	16	960	0.048	0.486
17	1020	0.067	1.061	18	1080	0.026	0.343
19	1140	0.130	2.355	20	1200	0.034	0.722
21	1260	0.116	1.864	22	1320	0.030	0.392
23	1380	0.029	0.378	24	1440	0.027	0.311
25	1500	0.058	0.929	26	1560	0.040	0.522
27	1620	0.031	0.345	28	1680	0.021	0.389
29	1740	0.039	0.356	30	1800	0.031	0.235
31	1860	0.028	0.218	32	1920	0.023	0.284
33	1980	0.027	0.525	34	2040	0.041	0.279
35	2100	0.043	0.289	36	2160	0.022	0.181
37	2220	0.019	0.325	38	2280	0.023	0.091
39	2340	0.063	0.499	40	2400	0.042	0.172
41	2460	0.032	0.181	42	2520	0.029	0.199
43	2580	0.040	0.288	44	2640	0.030	0.136
45	2700	0.046	0.326	46	2760	0.044	0.100
47	2820	0.047	0.120	48	2880	0.043	0.160
49	2940	0.058	0.197	50	3000	0.030	0.162



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Photometric Report: S2008135-R1

Prepared for: ANDlight · Test Date: 13 August 2020

Luminaire: SPOT LIGHT VOLUMES · Lumcat: SPO-P-B-B-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
0		116	116	116	116	107	107	107	107	99	99	99	99	83	83	83	56	56	56	50
1		106	101	97	93	98	94	90	87	90	87	84	81	73	71	69	50	49	48	43
2		97	88	81	76	89	82	76	71	82	76	71	66	64	61	57	44	42	40	36
3		88	77	69	63	81	72	65	59	75	67	60	55	57	52	48	39	36	34	30
4		81	68	59	53	74	64	56	50	68	59	52	47	50	45	41	35	32	29	26
5		74	61	51	45	68	56	48	42	63	52	45	40	45	39	35	31	28	25	22
6		68	54	45	39	63	50	42	36	58	47	40	34	40	34	30	28	25	22	19
7		63	49	40	34	58	45	37	32	53	42	35	30	36	31	26	25	22	20	17
8		58	44	35	30	54	41	33	28	49	38	31	26	33	27	23	23	20	17	15
9		54	40	32	26	50	37	30	25	46	35	28	23	30	25	21	21	18	16	13
10		50	37	29	23	46	34	27	22	43	32	25	21	28	22	19	20	16	14	12

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0 - 10	14	1.61	1.61
10 - 20	39	4.63	4.63
20 - 30	60	7.10	7.10
30 - 40	75	8.85	8.85
40 - 50	85	10.07	10.07
50 - 60	82	9.71	9.71
60 - 70	46	5.50	5.50
70 - 80	18	2.10	2.10
80 - 90	4	0.45	0.45
90 - 120	68	8.04	8.04
90 - 130	150	17.75	17.75
90 - 150	310	36.67	36.67
90 - 180	422	50.00	50.00
0 - 180	845	100.00	100.00

Average Luminance (Cd/m²)

Angle	0 Degree	45 Degree	90 Degree
45.0	1570	1570	1570
55.0	1645	1645	1645
65.0	1107	1107	1107
75.0	646	646	646
85.0	351	351	351

Luminaire Luminous Flux: 845

Measured Input Power: 14.73 W

Total Luminaire Efficiency: N/A

Luminaire Luminous Efficacy: 57.3 lm/W

Luminaire Spacing Criterion (0 Degree): 1.2983

Luminaire Spacing Criterion (90 Degree): 1.2983

Category: Up and Down



Photometric Report: S2008135-R1

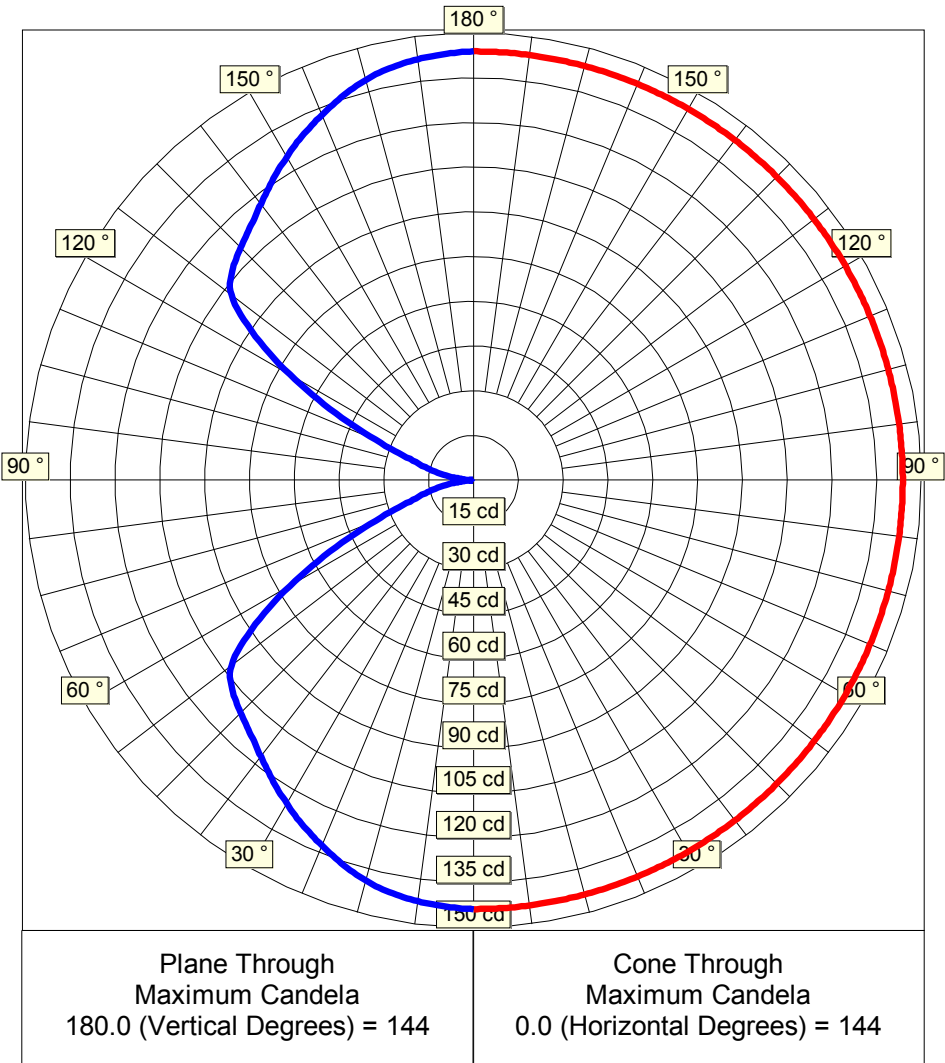
Prepared for: ANDlight · Test Date: 13 August 2020

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

Luminous Intensity - Polar Curve for each Plane(1)

Plane
Angles

Plane Angles	Candela Values
0.0	144
2.5	143
5.0	143
7.5	142
10.0	142
12.5	140
15.0	139
17.5	137
20.0	135
22.5	133
25.0	130
27.5	128
30.0	125
32.5	122
35.0	120
37.5	117
40.0	114
42.5	112
45.0	110
47.5	108
50.0	106
52.5	102
55.0	94
57.5	83
60.0	71
62.5	59
65.0	46
67.5	35
70.0	26
72.5	20
75.0	17
77.5	13
80.0	9
82.5	6
85.0	3
87.5	0
90.0	0
92.5	0
95.0	3
97.5	6



Cone
Angles

Cone Angles	Candela Values
0.0	144

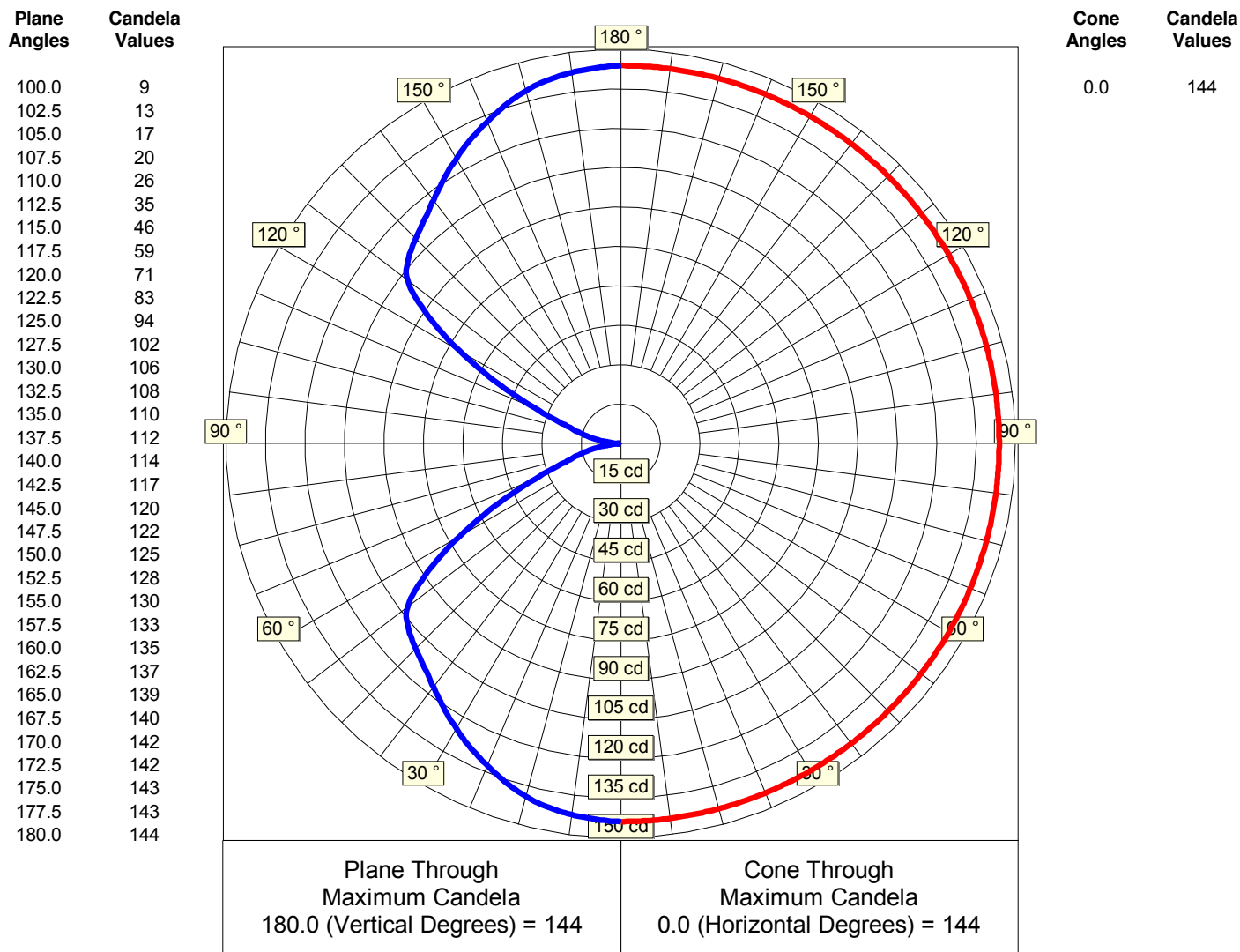


Photometric Report: S2008135-R1

Prepared for: ANDlight · Test Date: 13 August 2020

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

Luminous Intensity - Polar Curve for each Plane(2)





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IES File Headers

IESNA:LM-63
[ISSUEDATE] 13 August 2020
[TESTLAB] Spectra Lux
[TEST] S2008135-R1
[MANUFAC] ANDlight
[LUMCAT] SPO-P-B-B-VA-120
[LUMINAIRE] SPOT LIGHT VOLUMES
[LAMP] (2)BulBrite G25 Frosted LED 7W Bulb c/w Integrated LED Driver @ 120.00V
[_BURNING] Vertical Base Up & Down (845 Luminaire Lumens)
[_REFLECTOR] Vanilla Spun Aluminum
[_LENS] None
[_HOUSING] Shades (B-B - Aluminum Profile)
[_NOMINAL COLOR] 2700 K
[_DRIVE CURRENT] 116.7 mA

Candela Table

Lateral Angles

	0.0
	0.0 144
	2.5 143
	5.0 143
	7.5 142
	10.0 142
	12.5 140
	15.0 139
	17.5 137
	20.0 135
V e r t i c a l	22.5 133
	25.0 130
	27.5 128
	30.0 125
	32.5 122
	35.0 120
	37.5 117
	40.0 114
	42.5 112
	45.0 110
A n g l e s	47.5 108
	50.0 106
	52.5 102
	55.0 94
	57.5 83
	60.0 71
	62.5 59
	65.0 46
	67.5 35
	70.0 26
	72.5 20
	75.0 17
	77.5 13
	80.0 9
	82.5 6
	85.0 3
	87.5 0
	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