



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: CY4442		Driver Details: CY2023	
DUT Lab ID	SRIS 2823-18	Seasoning	0 Hour	Type	LED Power Supply
Lamp Type	LED/SSL	Test Product	SPO-P-C-D-VA-120	Manufacturer	Bulbrite
Current Mode	AC	Manufacturer	Bulbrite	Catalog No.	Integrated LED Driver
Test Report	S2008139-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	24.8 °C	Burning Position	Vertical Base Up & Down	Input Power	14.68 W

Luminaire Data

General Information		Optics		Aperture (feet)	
Manufacturer	ANDlight	Reflector	Vanilla Spun Aluminum	X	-0.4583
Name	SPOT LIGHT VOLUMES	Housing	Shades (C-D) - Aluminum Profile	Y	-0.4583
Catalog No.	SPO-P-C-D-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

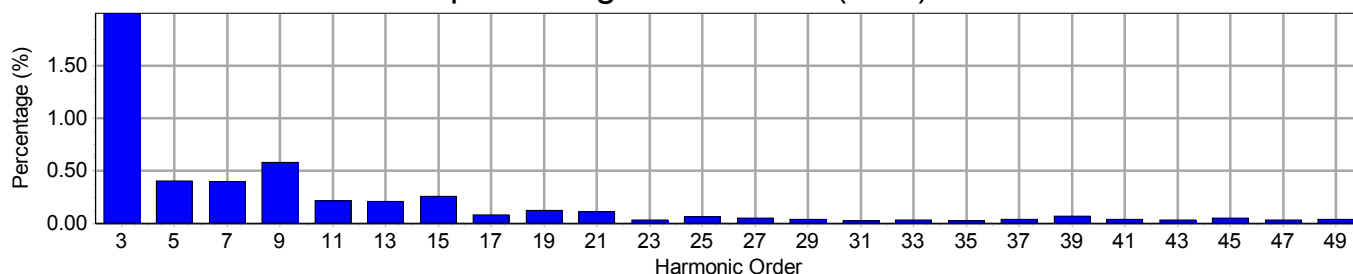


Electrical Measurements

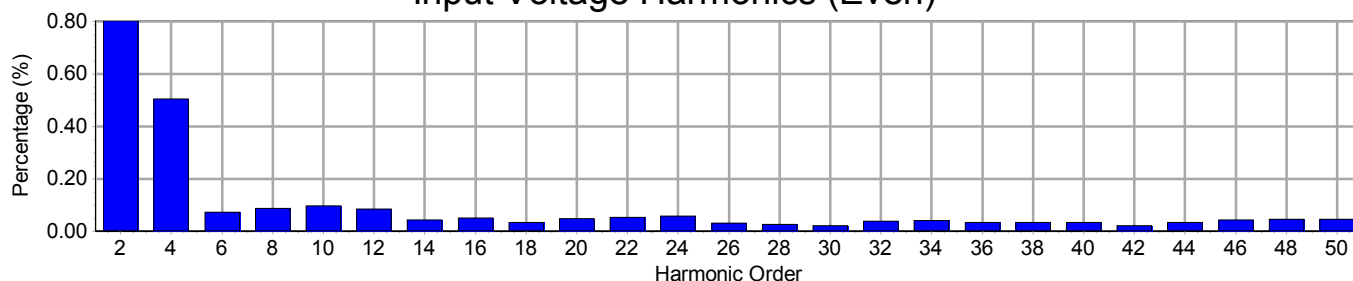
Input

Frequency	60 Hz	Active Power	14.68 W	THDV [ANSI]	2.41 %
Voltage	120.0 V(rms)	Apparent Power	15.86 VA	THDA [ANSI]	38.00 %
Current	0.1322 A(rms)	Power Factor	0.926	Max. Harmonic At	3rd order

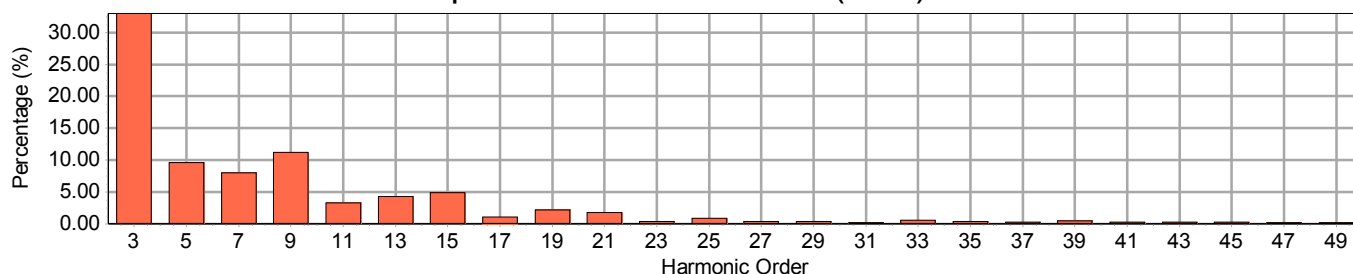
Input Voltage Harmonics (Odd)



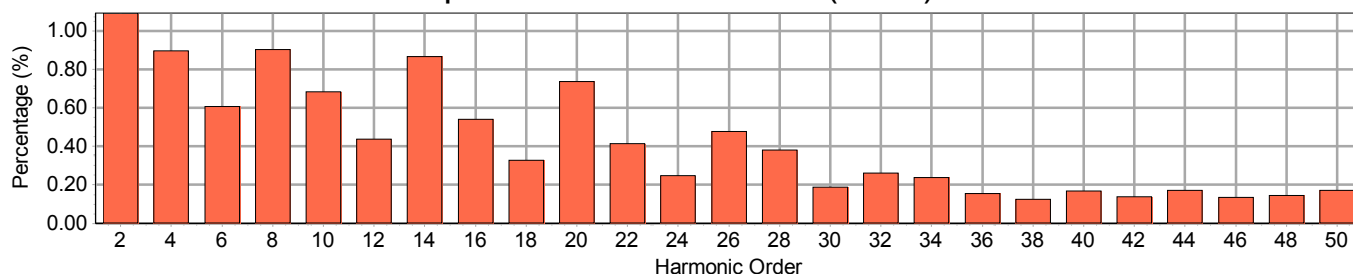
Input Voltage Harmonics (Even)



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	0.804	1.096
3	180	1.999	33.047	4	240	0.504	0.899
5	300	0.403	9.562	6	360	0.072	0.610
7	420	0.401	8.028	8	480	0.088	0.904
9	540	0.583	11.212	10	600	0.097	0.685
11	660	0.213	3.314	12	720	0.084	0.439
13	780	0.212	4.283	14	840	0.044	0.867
15	900	0.256	4.878	16	960	0.050	0.541
17	1020	0.082	1.084	18	1080	0.034	0.330
19	1140	0.122	2.201	20	1200	0.048	0.738
21	1260	0.114	1.741	22	1320	0.052	0.414
23	1380	0.033	0.364	24	1440	0.058	0.249
25	1500	0.064	0.863	26	1560	0.030	0.478
27	1620	0.049	0.322	28	1680	0.026	0.381
29	1740	0.040	0.388	30	1800	0.020	0.190
31	1860	0.026	0.185	32	1920	0.038	0.263
33	1980	0.036	0.503	34	2040	0.041	0.238
35	2100	0.026	0.378	36	2160	0.033	0.156
37	2220	0.042	0.265	38	2280	0.033	0.124
39	2340	0.069	0.482	40	2400	0.034	0.170
41	2460	0.042	0.255	42	2520	0.022	0.138
43	2580	0.034	0.250	44	2640	0.032	0.173
45	2700	0.051	0.301	46	2760	0.044	0.135
47	2820	0.031	0.119	48	2880	0.046	0.144
49	2940	0.041	0.163	50	3000	0.045	0.170



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Photometric Report: S2008139-R1

Prepared for: ANDlight · Test Date: 13 August 2020

Luminaire: SPOT LIGHT VOLUMES · Lumcat: SPO-P-C-D-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		118	118	118	118	111	111	111	111	105	105	105	105	93	93	93	71	71	71				67
1		109	104	100	96	103	98	95	92	97	93	90	87	83	80	78	65	63	62				58
2		100	92	86	80	94	87	81	77	89	83	77	73	74	70	66	58	56	54				50
3		92	82	74	68	87	78	71	65	82	74	67	62	66	61	57	53	50	47				44
4		85	73	65	58	80	69	62	56	75	66	59	54	59	54	50	48	44	42				39
5		78	66	57	51	74	63	55	49	69	60	52	47	54	48	44	43	40	37				34
6		73	59	51	45	68	57	49	43	64	54	47	42	49	43	39	40	36	33				31
7		67	54	45	40	64	52	44	38	60	49	42	37	45	39	35	37	33	30				28
8		63	49	41	35	59	47	40	34	56	45	38	33	41	35	31	34	30	27				25
9		59	45	37	32	55	43	36	31	52	42	35	30	38	32	28	31	28	25				23
10		55	42	34	29	52	40	33	28	49	38	32	27	35	30	26	29	25	23				21

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0 - 10	10	3.10	3.10
10 - 20	29	9.19	9.19
20 - 30	42	13.16	13.16
30 - 40	43	13.52	13.52
40 - 50	36	11.34	11.34
50 - 60	26	8.16	8.16
60 - 70	16	5.08	5.08
70 - 80	8	2.52	2.52
80 - 90	2	0.64	0.64
90 - 120	10	3.05	3.05
90 - 130	19	5.93	5.93
90 - 150	51	16.05	16.05
90 - 180	107	33.29	33.29
0 - 180	320	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: 320

Measured Input Power: 14.68 W

Total Luminaire Efficiency: N/A

Luminaire Luminous Efficacy: 21.8 lm/W

Luminaire Spacing Criterion (0 Degree): 1.1654

Luminaire Spacing Criterion (90 Degree): 1.1654

Category: Up and Down



Photometric Report: S2008139-R1

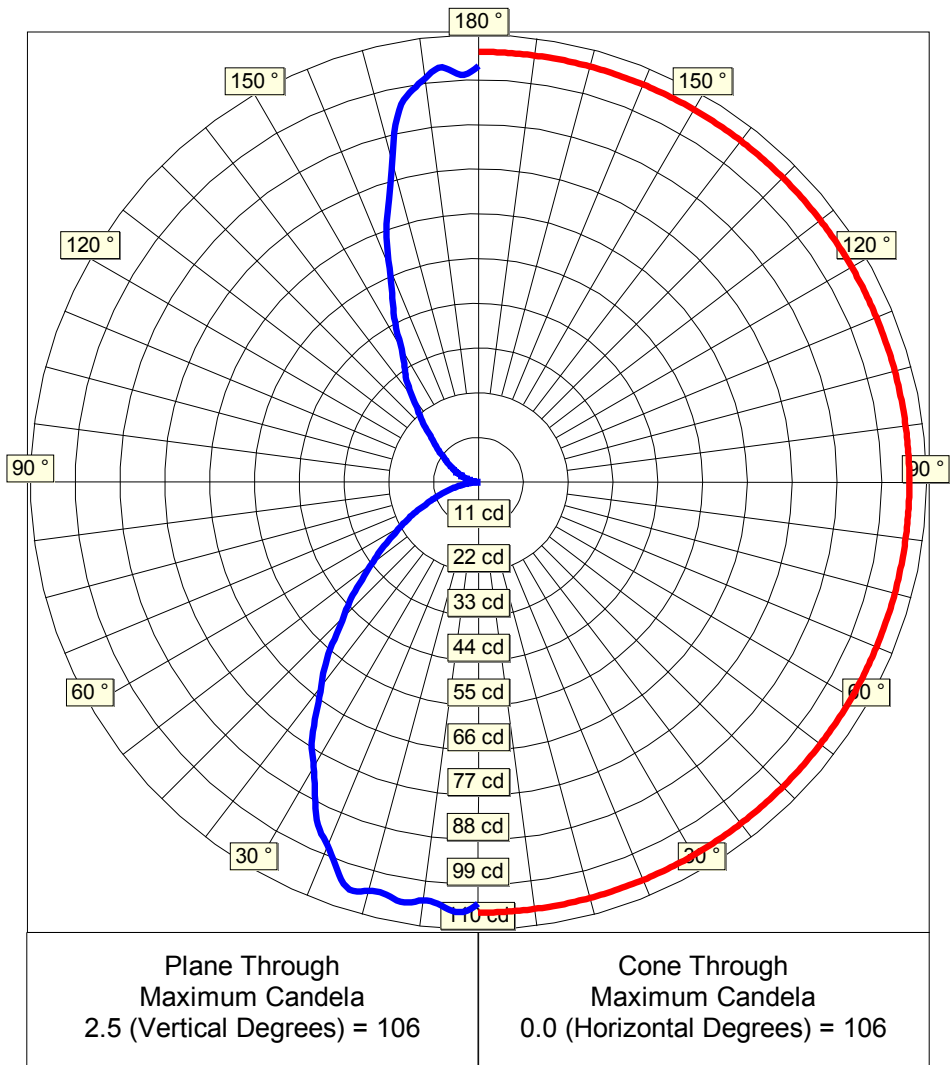
Prepared for: ANDlight · Test Date: 13 August 2020

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

Luminous Intensity - Polar Curve for each Plane(1)

Plane
Angles

Plane Angles	Candela Values
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
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
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
92.5	0
95.0	1
97.5	1



Cone
Angles

Cone Angles	Candela Values
0.0	106

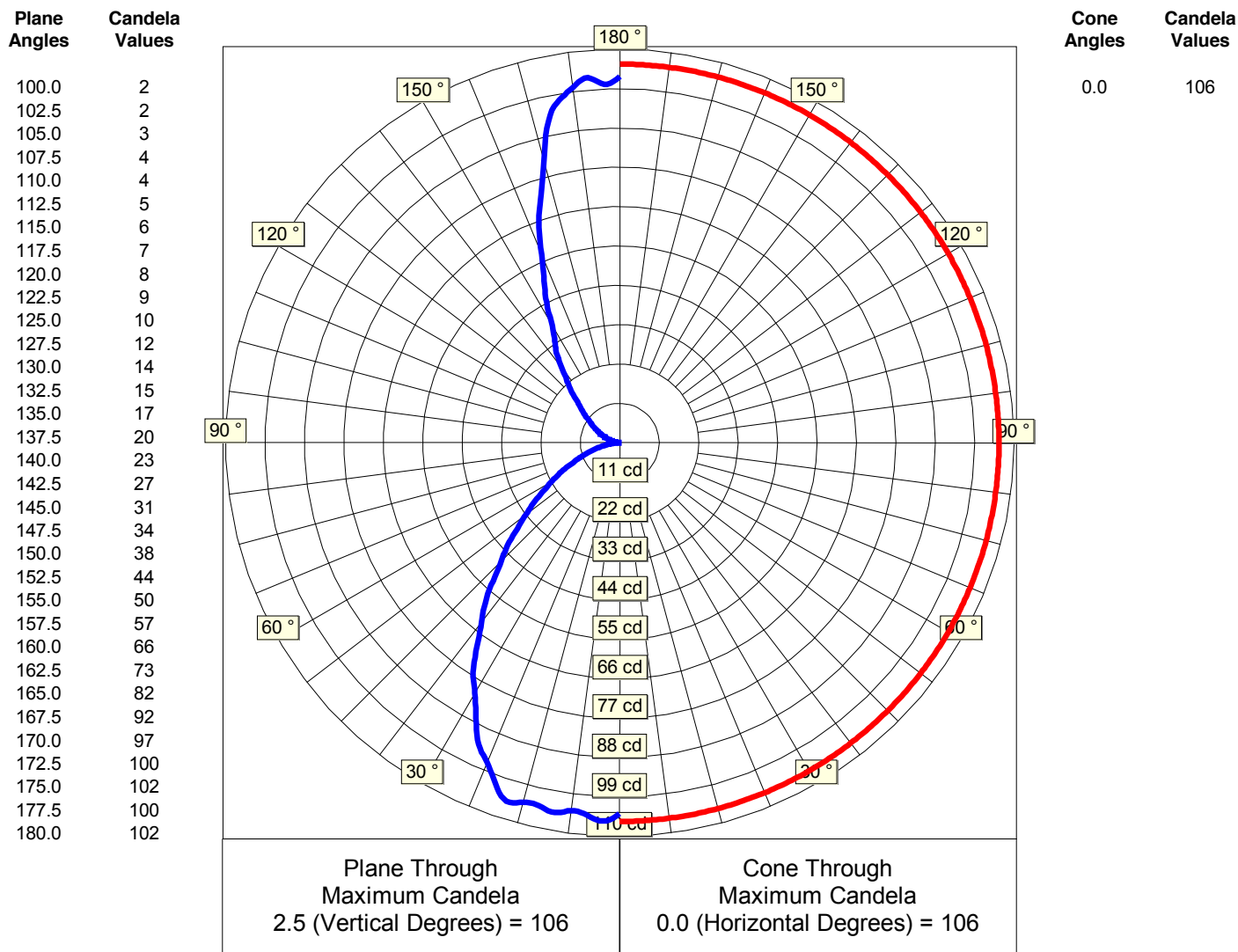


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Luminaire: SPOT LIGHT VOLUMES · Lumcat: SPO-P-C-D-VA-120

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] S2008139-R1
[MANUFAC] ANDlight
[LUMCAT] SPO-P-C-D-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 (320 Luminaire Lumens)
[_REFLECTOR] Vanilla Spun Aluminum
[_LENS] None
[_HOUSING] Shades (C-D)- 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