



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-79:2019, ANSI C82.2:2002, ANSI C82.77-10:2021

Customer Luminaire Authentik, 1122 rue du sud, Cowansville, Quebec, Canada, J2K 2Y3

General Information		Lamp Details: CY5138		Driver Details: CY2399	
DUT Lab ID	SRIS 3132-1	Seasoning	0 Hour	Type	LED Power Supply
Lamp Type	LED/SSL	Test Product	BAGE	Manufacturer	Zhuhai Shengchang Electronics Co., KVF-24060-TDW
Current Mode	AC	Manufacturer	N.K.	Catalog No.	
Test Report	S2205101-R1	Lamp Catalog No.	LED STRIPE	Maximum Power	60 W
Test Date	10 May 2022	Drive Current	N.K.	Input Voltage	120.00 V
Report Date	20 May 2022	Nominal Color	2800 K	Operating Frequency	60 Hz
Ambient	25.4 °C	Burning Position	Junction Vertical Base Up	Input Power	21.36 W

Luminaire Data

General Information		Optics		Aperture (feet)	
Manufacturer	Luminaire Authentik	Optics	Half Cylindrical Opalin Diffuser	X	0.3333
Name	BAGE	Housing	Black Painted Fabricated Metal Sheet	Y	5.0000
Catalog No.	BAGE	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	Inventfine	CHP-500	GZBXD010148	N.P.C.R.	N.P.C.R.
Input Power Meter	Yokogawa	WT210	27E116584	2021-09-20	2022-09-22
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	2021-09-05	2022-09-05

Environment Equipment

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Temperature Humidity Sensor	Omega	HH311	120504176	2021-07-13	2022-07-13

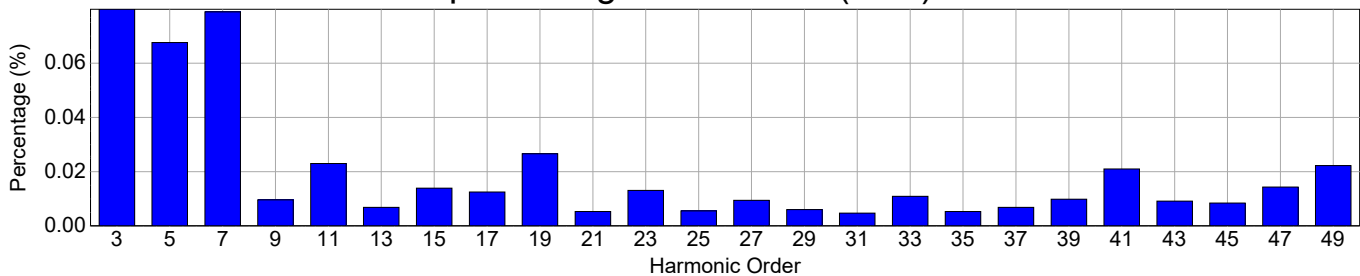


Electrical Measurements

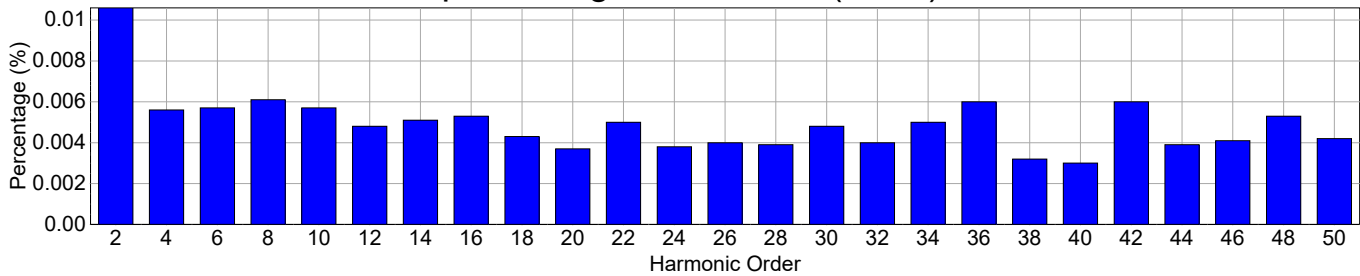
Input

Frequency	60 Hz	Active Power	21.36 W	THDV [ANSI]	0.14 %
Voltage	120.0 V(rms)	Apparent Power	21.51 VA	THDA [ANSI]	7.64 %
Current	0.1793 A(rms)	Power Factor	0.993	Max. Harmonic At	13rd order

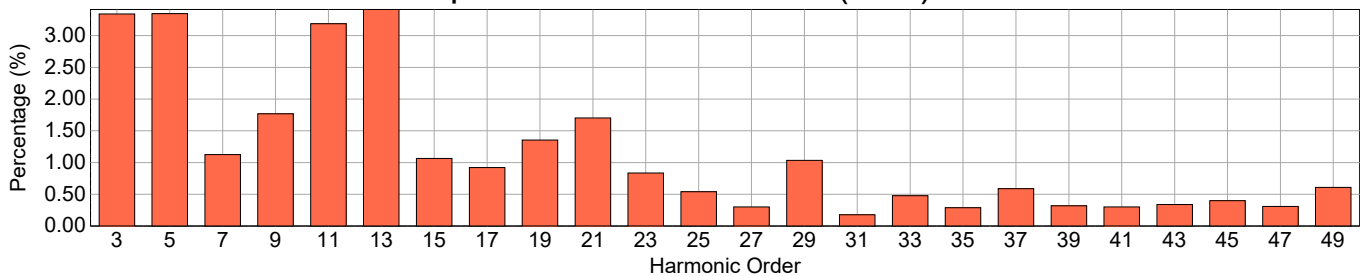
Input Voltage Harmonics (Odd)



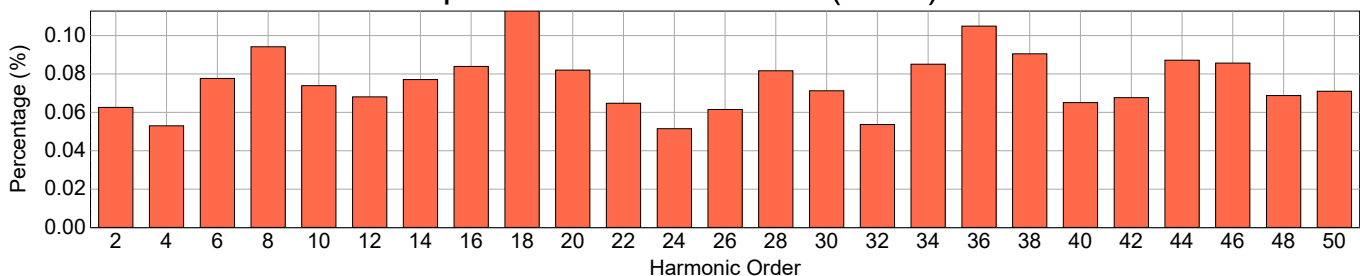
Input Voltage Harmonics (Even)



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	0.011	0.063
3	180	0.080	3.342	4	240	0.006	0.053
5	300	0.068	3.345	6	360	0.006	0.078
7	420	0.079	1.125	8	480	0.006	0.094
9	540	0.010	1.767	10	600	0.006	0.074
11	660	0.023	3.188	12	720	0.005	0.068
13	780	0.007	3.413	14	840	0.005	0.077
15	900	0.014	1.066	16	960	0.005	0.084
17	1020	0.013	0.922	18	1080	0.004	0.113
19	1140	0.027	1.354	20	1200	0.004	0.082
21	1260	0.005	1.702	22	1320	0.005	0.065
23	1380	0.013	0.836	24	1440	0.004	0.052
25	1500	0.006	0.540	26	1560	0.004	0.062
27	1620	0.009	0.302	28	1680	0.004	0.082
29	1740	0.006	1.034	30	1800	0.005	0.071
31	1860	0.005	0.178	32	1920	0.004	0.054
33	1980	0.011	0.479	34	2040	0.005	0.085
35	2100	0.005	0.289	36	2160	0.006	0.105
37	2220	0.007	0.588	38	2280	0.003	0.091
39	2340	0.010	0.319	40	2400	0.003	0.065
41	2460	0.021	0.301	42	2520	0.006	0.068
43	2580	0.009	0.340	44	2640	0.004	0.087
45	2700	0.008	0.400	46	2760	0.004	0.086
47	2820	0.014	0.309	48	2880	0.005	0.069
49	2940	0.022	0.608	50	3000	0.004	0.071



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Lab Code: 200899-0

Photometric Report: S2205101-R1

Prepared for: Luminaire Authentik · Test Date: 10 May 2022

Luminaire: BAGE · Lumcat: BAGE

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		122	122	122	122	119	119	119	119	116	116	116	116	111	111	111	102	102	102	102	102	102	100
1		115	111	108	105	112	109	106	103	110	107	104	101	102	100	98	95	94	92	95	94	92	91
2		107	101	95	91	105	99	94	90	103	97	93	89	94	90	87	88	85	83	88	85	83	81
3		100	92	85	80	98	90	84	79	96	89	83	78	86	81	77	81	78	75	81	78	75	73
4		94	84	76	71	92	82	76	70	90	81	75	70	79	73	69	75	71	67	75	71	67	66
5		88	77	69	64	86	76	69	63	84	75	68	63	73	67	62	69	65	61	69	65	61	59
6		82	70	63	57	80	70	62	57	79	69	62	57	67	61	57	64	59	56	64	59	56	54
7		77	65	57	52	75	64	57	52	74	64	57	52	62	56	52	60	55	51	60	55	51	49
8		72	60	53	48	71	60	52	48	70	59	52	47	58	52	47	56	51	47	56	51	47	45
9		68	56	49	44	67	55	48	44	66	55	48	44	54	48	44	52	47	43	52	47	43	42
10		64	52	45	40	63	52	45	40	62	51	45	40	50	44	40	49	44	40	49	44	40	38

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0 - 10	37	6.19	6.19
10 - 20	103	17.35	17.35
20 - 30	151	25.49	25.49
30 - 40	146	24.52	24.52
40 - 50	87	14.69	14.69
50 - 60	45	7.55	7.55
60 - 70	18	3.01	3.01
70 - 80	5	0.90	0.90
80 - 90	2	0.30	0.30
90 - 120	0	0.00	0.00
90 - 130	0	0.00	0.00
90 - 150	0	0.00	0.00
90 - 180	0	0.00	0.00
0 - 180	594	100.00	100.00

Average Luminance (Cd/m²)

Angle	0 Degree	45 Degree	90 Degree
45.0	2268	639	245
55.0	2007	87	45
65.0	1296	29	20
75.0	895	22	14
85.0	787	62	24

Luminaire Luminous Flux: 594

Measured Input Power: 21.36 W

Total Luminaire Efficiency: N/A

Luminaire Luminous Efficacy: 27.8 lm/W

Luminaire Spacing Criterion (0 Degree): 1.2297

Luminaire Spacing Criterion (90 Degree): 1.1114

Category: Downlight

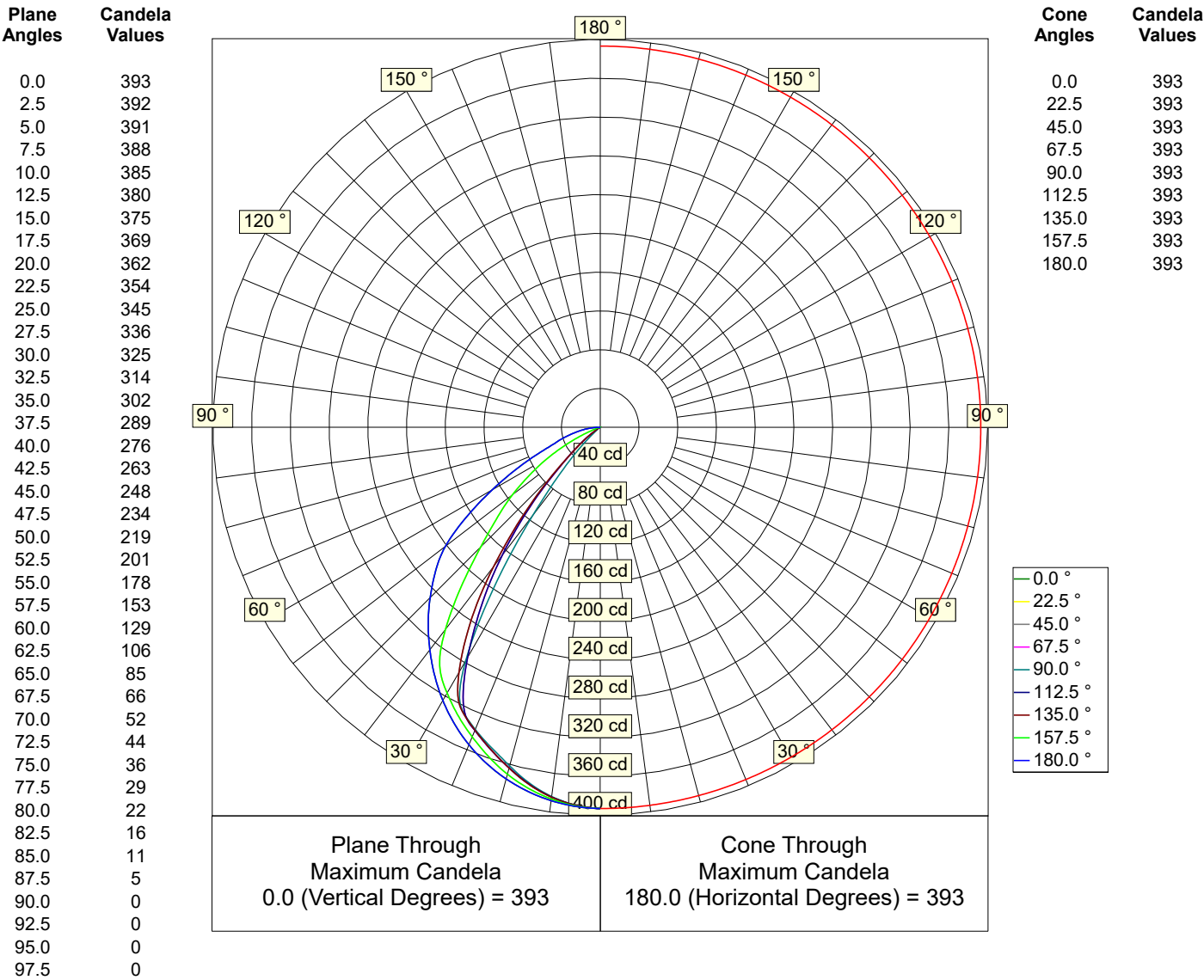


Photometric Report: S2205101-R1

Prepared for: Luminaire Authentik · Test Date: 10 May 2022

Luminaire: BAGE · Lumcat: BAGE

Luminous Intensity - Polar Curve for each Plane(1)



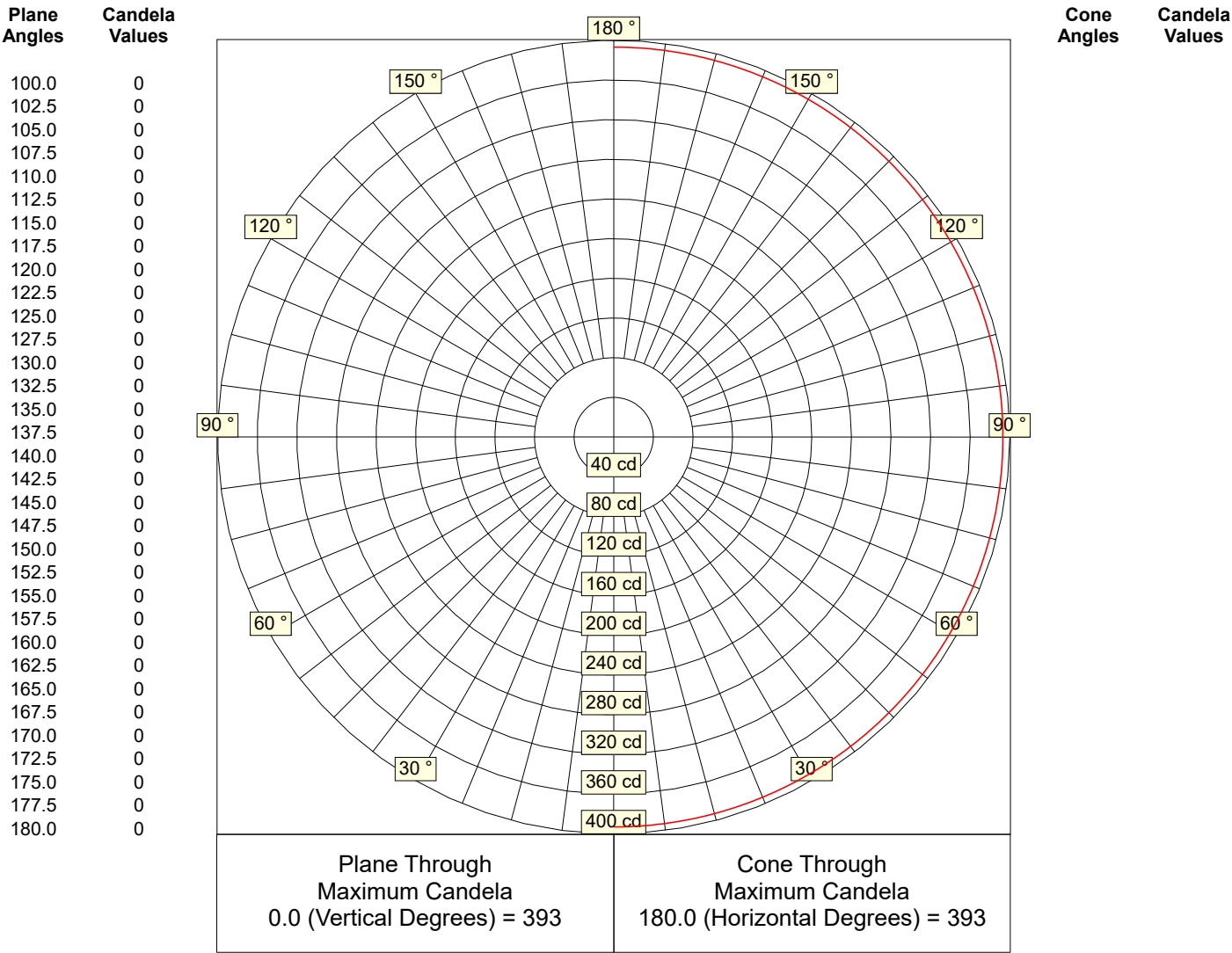


Photometric Report: S2205101-R1

Prepared for: Luminaire Authentik · Test Date: 10 May 2022

Luminaire: BAGE · Lumcat: BAGE

Luminous Intensity - Polar Curve for each Plane(2)





IES File Headers

IESNA:LM-63
 [ISSUEDATE] 10 May 2022
 [TESTLAB] Spectra Lux
 [TEST] S2205101-R1
 [MANUFAC] Luminaire Authentik
 [LUMCAT] BAGE
 [LUMINAIRE] BAGE
 [LAMP] Cluster of LEDs c/w Zhuhai Shengchang Electronics Co., LTD. Driver KVF-24060-TDW @ 120.00V
 [_BURNING] Vertical Base Up (594 Luminaire Lumens)
 [_OPTICS] Half Cylindrical Opalin Diffuser
 [_LENS] None
 [_HOUSING] Black Painted Fabricated Metal Sheet
 [_NOMINAL COLOR] 2800 K
 [_DRIVE CURRENT] N.K.

Candela Table

Lateral Angles

	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0
0.0	393	393	393	393	393	393	393	393	393
2.5	392	392	392	392	392	392	392	392	392
5.0	391	390	389	389	388	389	389	390	391
7.5	388	387	385	384	384	384	385	387	388
10.0	385	382	379	379	378	379	379	382	385
12.5	380	377	372	371	370	371	372	377	380
15.0	375	370	364	363	361	363	364	370	375
17.5	369	363	355	355	353	355	355	363	369
20.0	362	354	347	347	345	347	347	354	362
22.5	354	345	338	338	337	338	338	345	354
25.0	345	336	329	329	329	329	329	336	345
27.5	336	327	317	306	315	306	317	327	336
30.0	325	316	292	274	278	274	292	316	325
32.5	314	305	259	238	224	238	259	305	314
35.0	302	289	222	203	166	203	222	289	302
37.5	289	262	180	166	114	166	180	262	289
40.0	276	232	140	130	75	130	140	232	276
42.5	263	202	103	96	47	96	103	202	263
45.0	248	174	70	65	27	65	70	174	248
47.5	234	152	44	43	11	43	44	152	234
50.0	219	132	28	28	6	28	28	132	219
52.5	201	114	17	17	5	17	17	114	201
55.0	178	95	8	8	4	8	8	95	178
57.5	153	77	4	4	3	4	4	77	153
60.0	129	60	4	3	2	3	4	60	129
62.5	106	43	3	2	1	2	3	43	106
65.0	85	28	2	2	1	2	2	28	85
67.5	66	16	1	1	1	1	1	16	66
70.0	52	7	1	1	1	1	1	7	52
72.5	44	5	1	1	0	1	1	5	44
75.0	36	3	1	1	1	1	1	3	36
77.5	29	2	0	1	1	1	0	2	29
80.0	22	2	0	1	1	1	0	2	22
82.5	16	1	1	1	0	1	1	1	16
85.0	11	1	1	1	0	1	1	1	11
87.5	5	1	1	1	1	1	1	1	5
90.0	0	0	0	0	0	0	0	0	0



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Lateral Angles

	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0
V e r t i c a l A n g l e s	92.5	0	0	0	0	0	0	0	0
	95.0	0	0	0	0	0	0	0	0
	97.5	0	0	0	0	0	0	0	0
	100.0	0	0	0	0	0	0	0	0
	102.5	0	0	0	0	0	0	0	0
	105.0	0	0	0	0	0	0	0	0
	107.5	0	0	0	0	0	0	0	0
	110.0	0	0	0	0	0	0	0	0
	112.5	0	0	0	0	0	0	0	0
	115.0	0	0	0	0	0	0	0	0
	117.5	0	0	0	0	0	0	0	0
	120.0	0	0	0	0	0	0	0	0
	122.5	0	0	0	0	0	0	0	0
	125.0	0	0	0	0	0	0	0	0
	127.5	0	0	0	0	0	0	0	0
	130.0	0	0	0	0	0	0	0	0
	132.5	0	0	0	0	0	0	0	0
	135.0	0	0	0	0	0	0	0	0
	137.5	0	0	0	0	0	0	0	0
	140.0	0	0	0	0	0	0	0	0
	142.5	0	0	0	0	0	0	0	0
	145.0	0	0	0	0	0	0	0	0
	147.5	0	0	0	0	0	0	0	0
	150.0	0	0	0	0	0	0	0	0
	152.5	0	0	0	0	0	0	0	0
	155.0	0	0	0	0	0	0	0	0
	157.5	0	0	0	0	0	0	0	0
	160.0	0	0	0	0	0	0	0	0
	162.5	0	0	0	0	0	0	0	0
	165.0	0	0	0	0	0	0	0	0
	167.5	0	0	0	0	0	0	0	0
	170.0	0	0	0	0	0	0	0	0
	172.5	0	0	0	0	0	0	0	0
	175.0	0	0	0	0	0	0	0	0
	177.5	0	0	0	0	0	0	0	0
	180.0	0	0	0	0	0	0	0	0