



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: CY5139		Driver Details: CY2400	
DUT Lab ID	SRIS 3132-2	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	S2205094-R1	Lamp Catalog No.	LED STRIPE	Maximum Power	60 W
Test Date	9 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	24.6 °C	Burning Position	Junction Vertical Base Up	Input Power	21.56 W

Luminaire Data

General Information		Optics		Aperture (feet)	
Manufacturer	Luminaire Authentik	Optics	Half Cylindrical Opalin Diffuser	X	0.3333
Name	BAGE	Housing	White 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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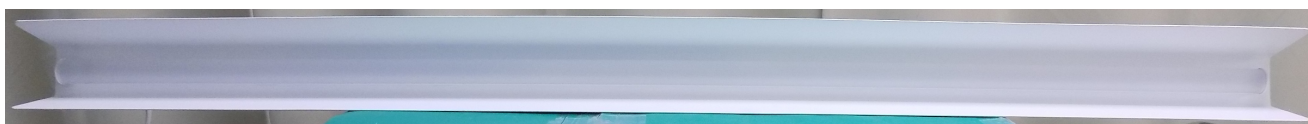
Luminaire Test Method

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



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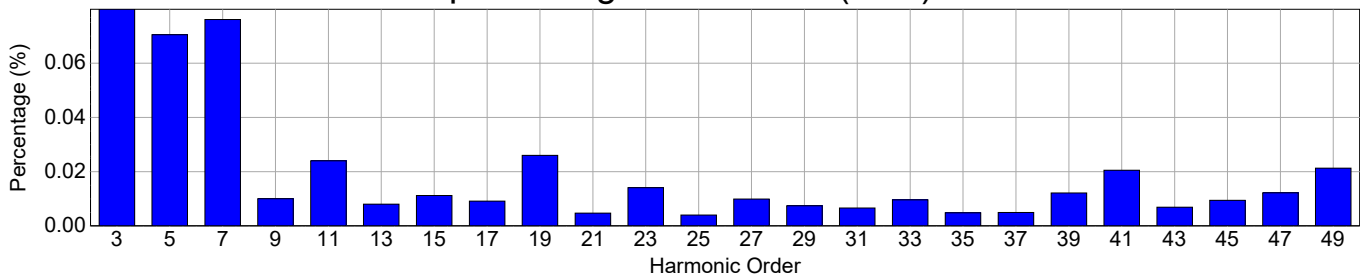
Lab Code: 200899-0

Electrical Measurements

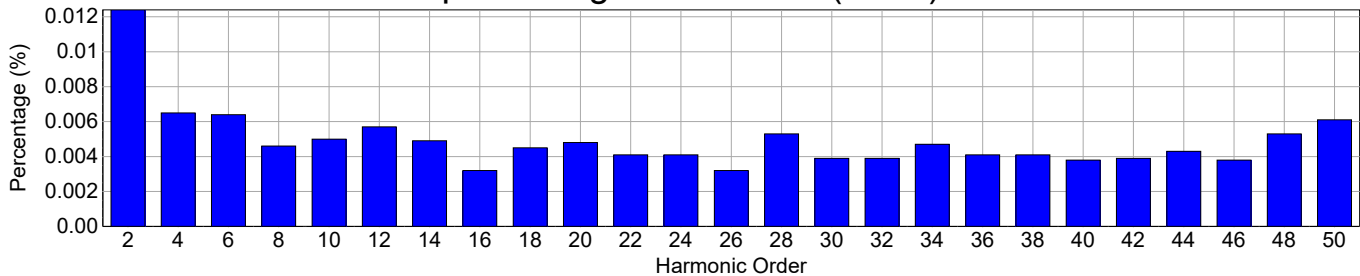
Input

Frequency	60 Hz	Active Power	21.56 W	THDV [ANSI]	0.14 %
Voltage	120.0 V(rms)	Apparent Power	21.70 VA	THDA [ANSI]	7.39 %
Current	0.1809 A(rms)	Power Factor	0.993	Max. Harmonic At	11st order

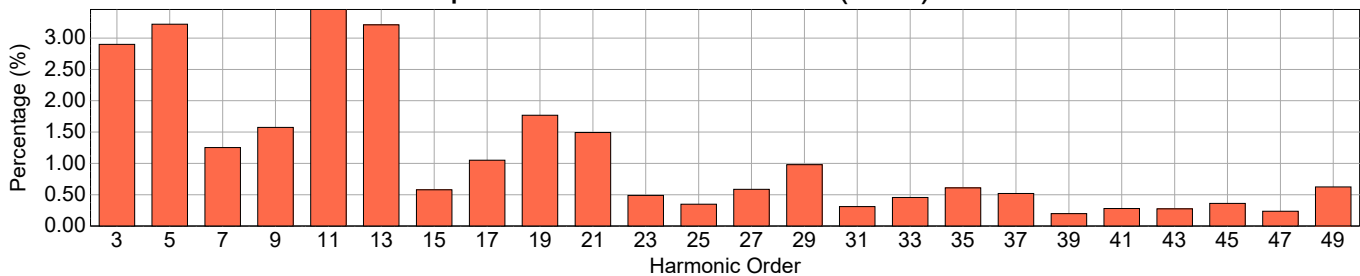
Input Voltage Harmonics (Odd)



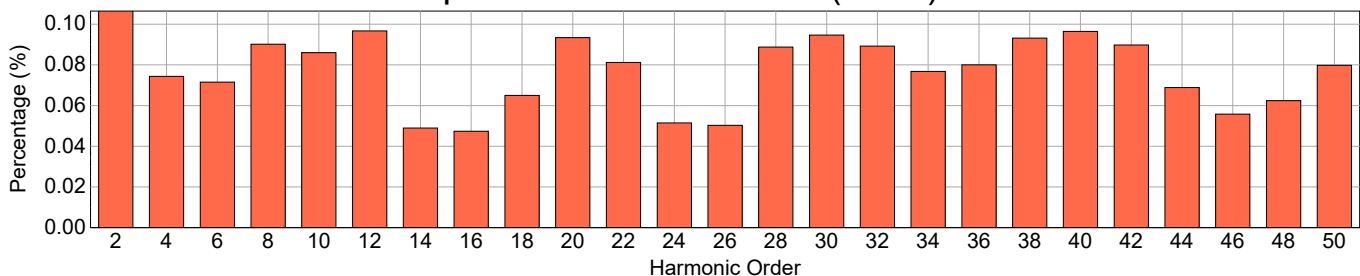
Input Voltage Harmonics (Even)



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	0.012	0.107
3	180	0.080	2.900	4	240	0.007	0.074
5	300	0.071	3.221	6	360	0.006	0.072
7	420	0.076	1.252	8	480	0.005	0.090
9	540	0.010	1.575	10	600	0.005	0.086
11	660	0.024	3.458	12	720	0.006	0.097
13	780	0.008	3.212	14	840	0.005	0.049
15	900	0.011	0.579	16	960	0.003	0.047
17	1020	0.009	1.050	18	1080	0.005	0.065
19	1140	0.026	1.768	20	1200	0.005	0.093
21	1260	0.005	1.493	22	1320	0.004	0.081
23	1380	0.014	0.490	24	1440	0.004	0.052
25	1500	0.004	0.349	26	1560	0.003	0.050
27	1620	0.010	0.585	28	1680	0.005	0.089
29	1740	0.007	0.980	30	1800	0.004	0.095
31	1860	0.007	0.309	32	1920	0.004	0.089
33	1980	0.010	0.456	34	2040	0.005	0.077
35	2100	0.005	0.609	36	2160	0.004	0.080
37	2220	0.005	0.520	38	2280	0.004	0.093
39	2340	0.012	0.197	40	2400	0.004	0.097
41	2460	0.021	0.279	42	2520	0.004	0.090
43	2580	0.007	0.274	44	2640	0.004	0.069
45	2700	0.009	0.362	46	2760	0.004	0.056
47	2820	0.012	0.236	48	2880	0.005	0.062
49	2940	0.021	0.626	50	3000	0.006	0.080



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Lab Code: 200899-0

Photometric Report: S2205094-R1

Prepared for: Luminaire Authentik · Test Date: 09 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				100
1		113	108	104	100	110	106	102	98	107	103	100	97	99	96	94	92	90	88				86
2		104	95	89	83	101	94	87	82	98	92	86	81	88	83	79	82	79	76				74
3		95	85	77	70	93	83	76	70	90	82	75	69	79	73	68	74	69	66				64
4		88	76	67	61	86	74	66	60	83	73	66	60	71	64	59	66	61	57				55
5		81	68	59	53	79	67	59	52	77	66	58	52	64	57	52	60	55	51				49
6		75	62	53	47	73	61	52	46	72	60	52	46	58	51	46	55	49	45				43
7		70	56	48	41	68	55	47	41	67	55	47	41	53	46	41	50	45	40				38
8		65	52	43	37	64	51	43	37	62	50	42	37	49	42	37	47	41	36				35
9		61	47	39	34	60	47	39	34	58	46	39	34	45	38	33	43	37	33				31
10		57	44	36	31	56	43	36	31	55	43	36	31	42	35	31	40	34	30				29

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0 - 10	53	4.07	4.07
10 - 20	150	11.66	11.66
20 - 30	231	17.88	17.88
30 - 40	265	20.57	20.57
40 - 50	227	17.62	17.62
50 - 60	177	13.70	13.70
60 - 70	115	8.95	8.95
70 - 80	56	4.38	4.38
80 - 90	15	1.17	1.17
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	1290	100.00	100.00

Average Luminance (Cd/m²)

Angle	0 Degree	45 Degree	90 Degree
45.0	3547	2874	1536
55.0	3444	1705	1199
65.0	3290	1316	981
75.0	3128	1003	761
85.0	3199	578	388

Luminaire Luminous Flux: 1290

Measured Input Power: 21.56 W

Total Luminaire Efficiency: N/A

Luminaire Luminous Efficacy: 59.8 lm/W

Luminaire Spacing Criterion (0 Degree): 1.2855

Luminaire Spacing Criterion (90 Degree): 1.2175

Category: Downlight

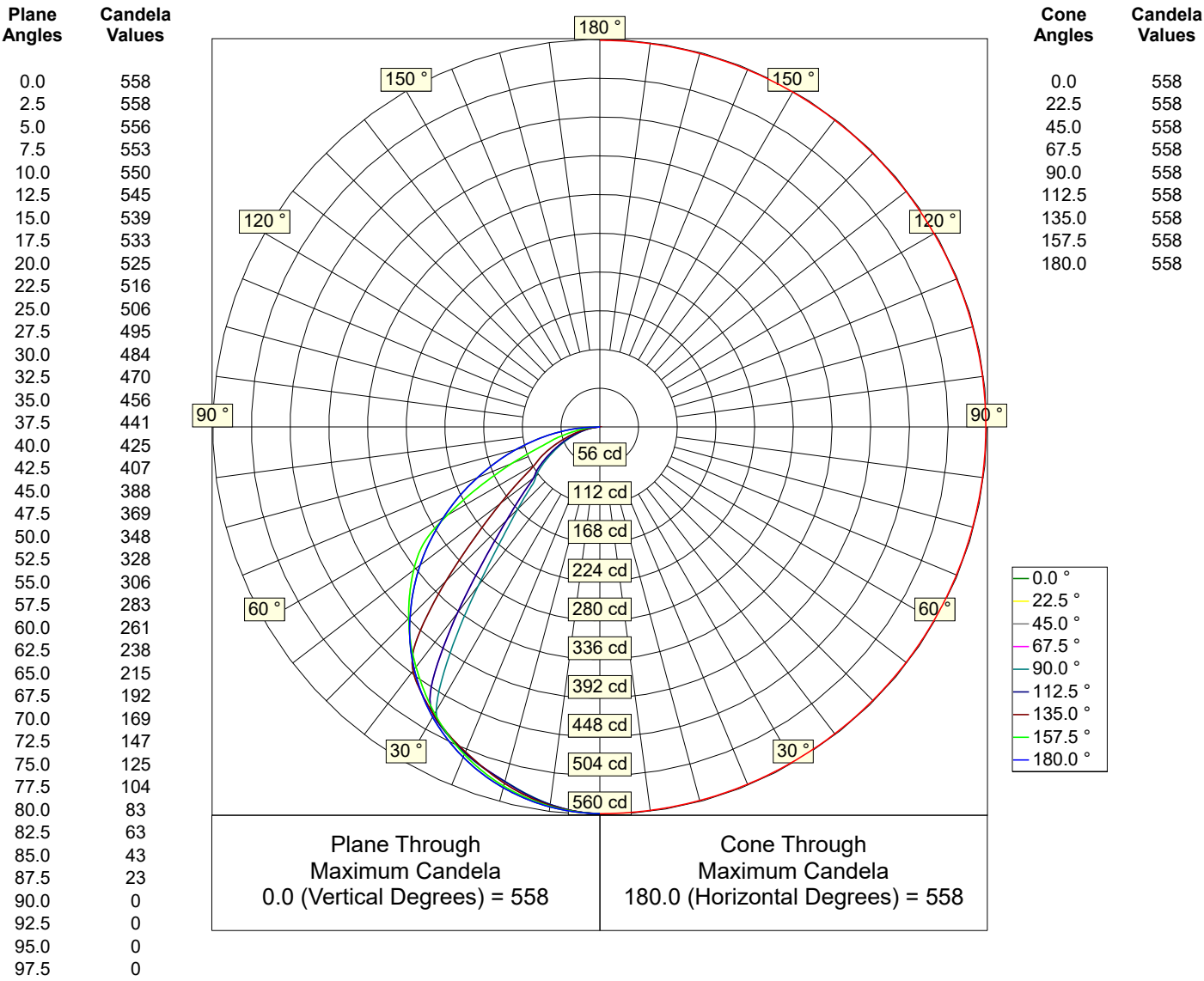


Photometric Report: S2205094-R1

Prepared for: Luminaire Authentik · Test Date: 09 May 2022

Luminaire: BAGE · Lumcat: BAGE

Luminous Intensity - Polar Curve for each Plane(1)



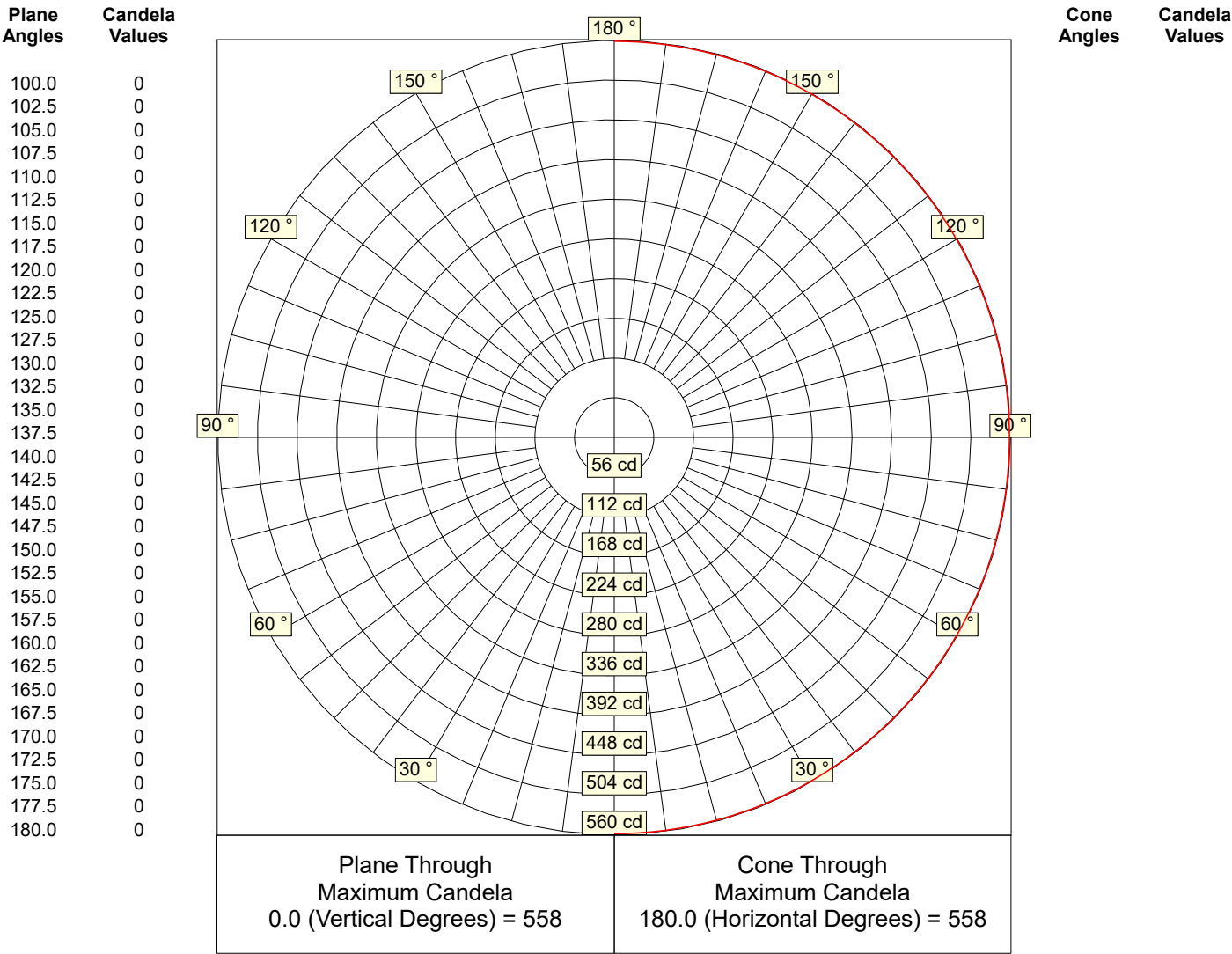


Photometric Report: S2205094-R1

Prepared for: Luminaire Authentik · Test Date: 09 May 2022

Luminaire: BAGE · Lumcat: BAGE

Luminous Intensity - Polar Curve for each Plane(2)





IES File Headers

IESNA:LM-63
 [ISSUEDATE] 09 May 2022
 [TESTLAB] Spectra Lux
 [TEST] S2205094-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 (1,290 Luminaire Lumens)
 [_OPTICS] Half Cylindrical Opalin Diffuser
 [_LENS] None
 [_HOUSING] White 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	558	558	558	558	558	558	558	558	558
2.5	558	557	557	557	557	557	557	557	558
5.0	556	555	555	554	554	554	555	555	556
7.5	553	552	551	550	550	550	551	552	553
10.0	550	548	546	544	544	544	546	548	550
12.5	545	543	540	538	537	538	540	543	545
15.0	539	537	533	530	530	530	533	537	539
17.5	533	530	525	523	524	523	525	530	533
20.0	525	521	516	517	517	517	516	521	525
22.5	516	512	508	509	510	509	508	512	516
25.0	506	502	499	501	501	501	499	502	506
27.5	495	490	490	492	491	492	490	490	495
30.0	484	478	480	481	473	481	480	478	484
32.5	470	465	469	456	419	456	469	465	470
35.0	456	451	457	401	353	401	457	451	456
37.5	441	437	444	338	288	338	444	437	441
40.0	425	422	418	277	236	277	418	422	425
42.5	407	407	370	228	197	228	370	407	407
45.0	388	391	315	191	168	191	315	391	388
47.5	369	374	262	163	145	163	262	374	369
50.0	348	357	217	139	125	139	217	357	348
52.5	328	339	181	121	116	121	181	339	328
55.0	306	320	151	112	106	112	151	320	306
57.5	283	294	126	102	96	102	126	294	283
60.0	261	255	108	90	84	90	108	255	261
62.5	238	213	98	79	74	79	98	213	238
65.0	215	173	86	68	64	68	86	173	215
67.5	192	137	74	59	55	59	74	137	192
70.0	169	106	62	49	46	49	62	106	169
72.5	147	82	50	40	38	40	50	82	147
75.0	125	68	40	32	30	32	40	68	125
77.5	104	53	31	25	24	25	31	53	104
80.0	83	39	23	18	17	18	23	39	83
82.5	63	27	15	11	11	11	15	27	63
85.0	43	18	8	5	5	5	8	18	43
87.5	23	9	2	1	1	1	2	9	23
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