



8165 E Kaiser Blvd. Anaheim, CA 92808  
www.lightlaboratory.com

Report No: L032113405



**Report No:** L032113405

**Issue Date:** 4/20/2021

**Report Prepared For:** Light and Green  
2340 E Olympic Blvd. Unit E, Los Angeles, CA 90021

**Model Number:** 9023 - 24 deg

**Test:** Photometric/Electrical Test

**Standards Used:** Appropriate part or all test guidelines were used for test performed:  
*IESNA LM79: 2008* Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products  
*ANSI NEMA ANSLG C78.377: 2008* Specification of the Chromaticity of Solid State Lighting Products  
*ANSI C82.77:2002:* Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

**Description of Sample:** Client submitted the sample. Received in working and undamaged condition. No modifications were necessary.

**Special Test Condition:** Fixture is tested with no special conditions.

**Sample Arrival Date:** 4/15/21

**Date of Tests:** 4/16/21 - 4/20/21

**Seasoning of Sample:** No seasoning was performed in accordance with IESNA LM-79.

**Equipment List**

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S4	4/7/23
HP Power Supply	6032A	PS-DC05-S2	--
Fluke Digital Thermometer	52K/J	MT-TP05	3/17/23
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

**General Information**

<b>Manufacturer:</b>	Light and Green
<b>Model Number:</b>	9023 - 24 deg
<b>Driver Model Number:</b>	L.T.F. DIMMABLE LED DRIER DA10W250C2040-3001

**Photometric & Electrical Test Results**

<b>Total Lumens:</b>	2695.71
<b>Efficacy:</b>	79.79
<b>Input Voltage (VAC/60Hz):</b>	120.04
<b>Input Current (Amp):</b>	0.2824
<b>Input Power (W):</b>	33.79
<b>Input Power Factor:</b>	0.9966
<b>Current ATHD (%):</b>	6.5%

**Test Condition**

<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:45
<b>Total Operating Time (Hours):</b>	1:35

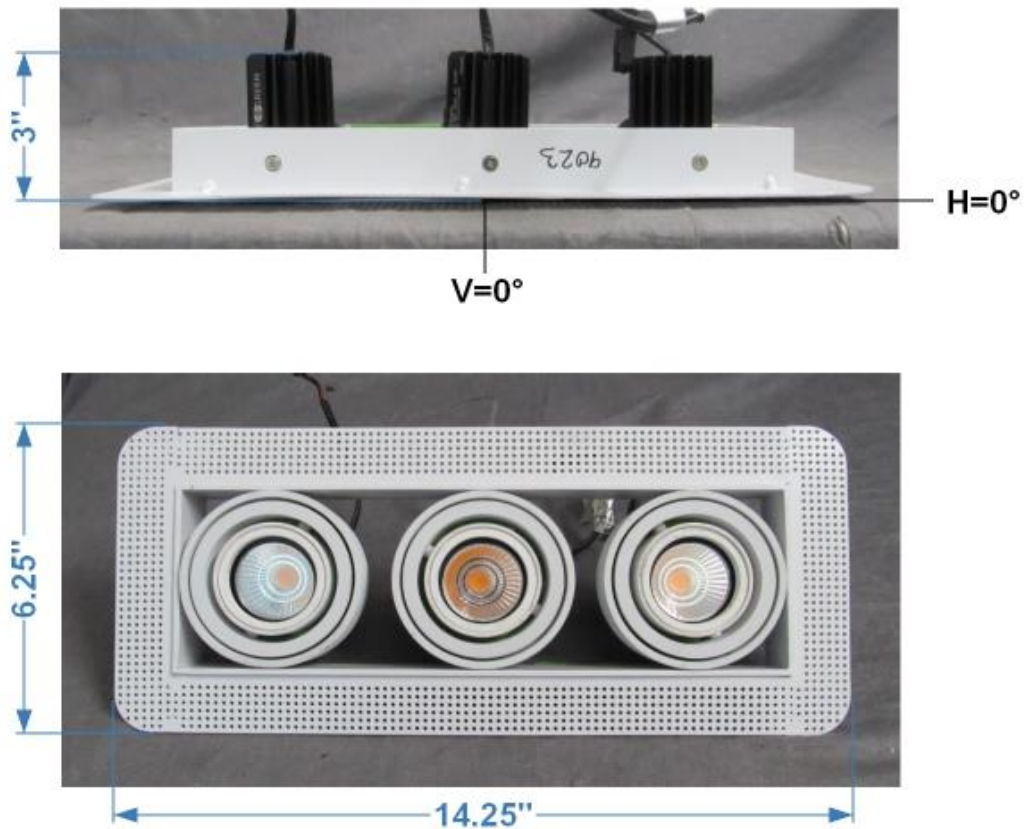


FIG. 1 LUMINAIRE

## Test Methods

### Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

### Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

### Disclaimers:

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Government.

Report Prepared by : Keyur Patel

Test Report Reviewed by:



Steve Kang  
Quality Assurance

*\*Attached are photometric data reports. Total number of pages: 10*



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# Photometric Test Report

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L032113405.IES**

## DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L032113405  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUEDATE] 4/20/2021  
[MANUFAC] Light and Green  
[LUMCAT] 9023 - 24 deg  
[LUMINAIRE] LED LUMINAIRE  
[BALLASTCAT] L.T.F. DIMMABLE LED DRIER DA10W250C2040-3001  
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
[INPUT] 120.04VAC, 33.79W  
[TEST PROCEDURE] IESNA:LM-79-08

## CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2696
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	80
Total Luminaire Watts	33.79
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.40
Spacing Criterion (90-270)	0.40
Spacing Criterion (Diagonal)	0.46
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.81 ft
Luminous Width (90-270)	0.15 ft
Luminous Height	0.00 ft

## LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	21404	22280	21905
55	10647	10956	11419
65	10262	10262	10471
75	12653	12995	12995
85	23357	23357	23357

**IES INDOOR REPORT**  
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**CANDELA TABULATION**

	<u>0</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>45</u>
<b>0</b>	7098	7098	7098	7098	7098	7098	7098	7098	7098	7098
<b>1</b>	6951	6958	6980	7000	7008	7016	7024	7033	7053	7070
<b>2</b>	6821	6830	6848	6869	6878	6885	6897	6910	6930	6947
<b>3</b>	6645	6654	6670	6692	6702	6709	6720	6729	6752	6766
<b>4</b>	6383	6387	6407	6426	6434	6444	6456	6465	6487	6500
<b>5</b>	6062	6070	6085	6103	6112	6121	6130	6139	6156	6170
<b>6</b>	5726	5733	5747	5764	5769	5775	5783	5790	5806	5811
<b>7</b>	5344	5350	5361	5377	5379	5386	5389	5395	5414	5418
<b>8</b>	4935	4941	4954	4968	4969	4974	4980	4984	4997	5004
<b>9</b>	4396	4399	4409	4423	4428	4434	4438	4444	4457	4461
<b>10</b>	4055	4057	4072	4084	4087	4094	4098	4100	4113	4113
<b>12</b>	3288	3295	3302	3312	3313	3319	3323	3328	3340	3343
<b>14</b>	2740	2746	2755	2759	2764	2772	2772	2775	2786	2787
<b>16</b>	2317	2325	2334	2338	2340	2345	2347	2352	2361	2364
<b>18</b>	1987	1991	2000	2003	2006	2011	2013	2014	2025	2028
<b>20</b>	1659	1662	1670	1673	1676	1681	1683	1683	1693	1693
<b>22</b>	1473	1477	1483	1486	1489	1492	1494	1493	1502	1503
<b>24</b>	1337	1341	1346	1349	1351	1354	1355	1354	1360	1363
<b>26</b>	1237	1240	1245	1247	1249	1252	1254	1251	1257	1260
<b>28</b>	1160	1162	1168	1169	1171	1174	1176	1174	1180	1183
<b>30</b>	1082	1085	1089	1092	1094	1098	1100	1099	1107	1111
<b>35</b>	798	801	802	807	808	811	815	813	819	821
<b>40</b>	414	415	416	417	418	418	421	418	419	421
<b>45</b>	171	171	171	172	173	174	174	174	174	178
<b>50</b>	107	107	107	108	108	109	109	109	110	110
<b>55</b>	69	70	70	70	70	70	71	71	71	71
<b>60</b>	55	55	55	55	55	55	56	56	56	56
<b>65</b>	49	49	49	49	49	49	49	49	49	49
<b>70</b>	44	44	44	45	45	45	45	45	45	45
<b>75</b>	37	37	38	38	38	38	38	38	38	38
<b>80</b>	32	32	32	32	32	32	32	32	32	32
<b>85</b>	23	23	23	23	23	23	23	23	23	23
<b>90</b>	0	0	0	0	0	0	0	0	0	0

**Vert. Angles**      **Horizontal Angles**

	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>
<b>0</b>	7098	7098	7098	7098	7098	7098	7098	7098	7098
<b>1</b>	7082	7099	7110	7126	7141	7150	7159	7164	7165
<b>2</b>	6959	6977	6988	7003	7019	7026	7035	7039	7042
<b>3</b>	6772	6791	6800	6814	6828	6837	6844	6850	6853
<b>4</b>	6506	6524	6532	6542	6557	6566	6573	6580	6582
<b>5</b>	6174	6188	6194	6206	6217	6224	6232	6239	6242
<b>6</b>	5816	5831	5837	5847	5857	5863	5869	5873	5877
<b>7</b>	5419	5434	5438	5447	5458	5462	5470	5475	5478
<b>8</b>	5007	5017	5022	5030	5037	5042	5048	5054	5058
<b>9</b>	4459	4469	4472	4477	4483	4487	4492	4493	4499
<b>10</b>	4111	4120	4120	4127	4134	4136	4139	4141	4142
<b>12</b>	3345	3354	3353	3360	3364	3369	3376	3376	3378
<b>14</b>	2787	2795	2796	2798	2801	2802	2806	2810	2813
<b>16</b>	2365	2369	2370	2372	2377	2379	2383	2387	2387
<b>18</b>	2029	2034	2035	2035	2040	2040	2044	2048	2047
<b>20</b>	1696	1698	1700	1701	1703	1704	1708	1712	1712
<b>22</b>	1504	1506	1509	1510	1511	1514	1517	1520	1521

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**CANDELA TABULATION - (Cont.)**

<b>24</b>	1364	1365	1368	1369	1370	1372	1375	1377	1379
<b>26</b>	1259	1262	1263	1263	1264	1268	1270	1273	1275
<b>28</b>	1182	1185	1186	1186	1187	1190	1192	1196	1197
<b>30</b>	1111	1115	1116	1117	1118	1120	1123	1125	1126
<b>35</b>	823	823	824	824	825	824	826	829	830
<b>40</b>	421	421	422	422	423	422	422	424	423
<b>45</b>	178	178	178	178	177	177	177	177	175
<b>50</b>	111	112	112	113	113	113	114	114	114
<b>55</b>	72	72	73	73	73	73	73	73	74
<b>60</b>	56	56	56	57	57	57	57	57	57
<b>65</b>	50	50	50	50	50	50	50	50	50
<b>70</b>	45	45	45	46	46	46	46	46	46
<b>75</b>	38	38	38	38	38	38	38	38	38
<b>80</b>	32	32	32	32	32	32	32	32	32
<b>85</b>	23	23	23	23	23	23	23	23	23
<b>90</b>	0	0	0	0	0	0	0	0	0

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	1245.51	N.A.	46.20
0-30	1857.71	N.A.	68.90
0-40	2347.44	N.A.	87.10
0-60	2584.44	N.A.	95.90
0-80	2674.46	N.A.	99.20
0-90	2695.71	N.A.	100.00
10-90	2175.99	N.A.	80.70
20-40	1101.93	N.A.	40.90
20-50	1269.86	N.A.	47.10
40-70	286.60	N.A.	10.60
60-80	90.03	N.A.	3.30
70-80	40.42	N.A.	1.50
80-90	21.24	N.A.	0.80
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	2695.71	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	519.72
10-20	725.79
20-30	612.20
30-40	489.73
40-50	167.93
50-60	69.06
60-70	49.60
70-80	40.42
80-90	21.24
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

**IES INDOOR REPORT**  
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0	
	RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	0
1	113	110	107	105	111	108	105	103	104	102	100	100	99	97	97	95	94	93	0
2	107	102	98	94	105	100	97	93	97	94	91	94	92	89	91	89	87	86	0
3	102	95	90	86	100	94	89	85	91	87	84	89	86	83	87	84	82	80	0
4	97	89	84	80	95	88	83	79	86	82	78	84	80	77	82	79	76	75	0
5	92	84	78	74	91	83	78	74	81	77	73	80	76	72	78	75	72	70	0
6	88	79	73	69	87	79	73	69	77	72	68	76	71	68	74	71	68	66	0
7	84	75	69	65	83	74	69	65	73	68	65	72	68	64	71	67	64	62	0
8	81	71	65	61	79	71	65	61	70	65	61	69	64	61	68	64	61	59	0
9	77	68	62	58	76	67	62	58	66	61	58	66	61	58	65	61	58	56	0
10	74	65	59	55	73	64	59	55	63	59	55	63	58	55	62	58	55	54	0



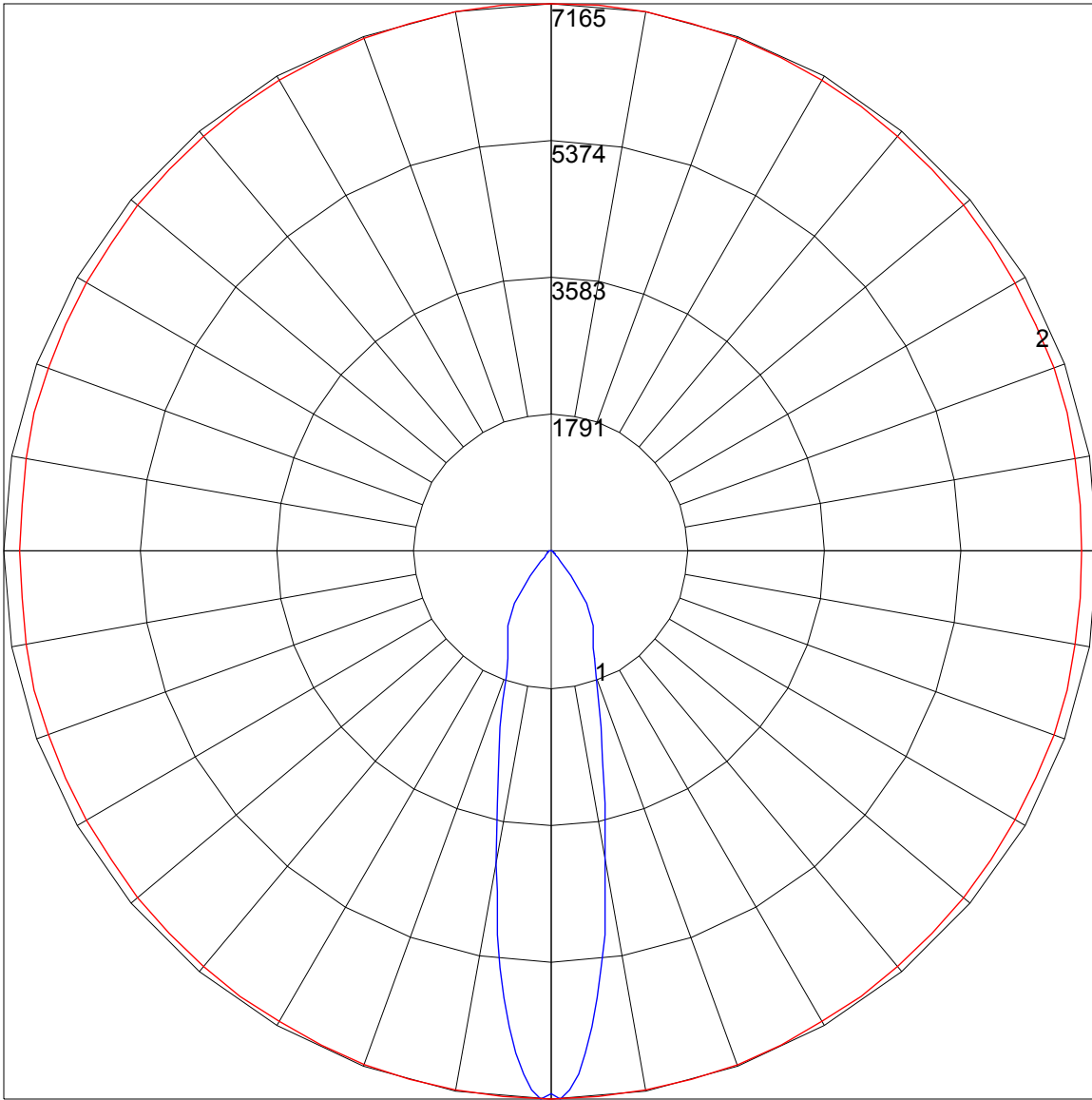
**IES INDOOR REPORT**  
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**UGR TABLE - CORRECTED**

Reflectances											
Ceiling Cavity	70	70	50	50	30	70	70	50	50	30	
Walls	50	30	50	30	30	50	30	50	30	30	
Floor Cavity	20	20	20	20	20	20	20	20	20	20	
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	14.1	15.2	14.5	15.5	15.8	14.4	15.5	14.8	15.8	16.1
	3H	16.4	17.4	16.8	17.7	18.1	16.7	17.6	17.1	18.0	18.3
	4H	17.6	18.5	18.0	18.8	19.2	17.8	18.7	18.2	19.0	19.4
	6H	18.8	19.6	19.2	20.0	20.4	18.9	19.7	19.4	20.1	20.5
	8H	19.4	20.1	19.8	20.5	20.9	19.5	20.3	19.9	20.7	21.1
	12H	20.0	20.7	20.4	21.1	21.5	20.1	20.8	20.5	21.2	21.6
4H	2H	14.8	15.6	15.2	16.0	16.4	15.0	15.9	15.4	16.2	16.6
	3H	17.4	18.1	17.8	18.5	18.9	17.5	18.3	18.0	18.7	19.1
	4H	18.7	19.3	19.1	19.8	20.2	18.8	19.5	19.3	19.9	20.4
	6H	20.1	20.7	20.6	21.1	21.6	20.2	20.8	20.7	21.2	21.7
	8H	20.8	21.3	21.2	21.7	22.2	20.8	21.4	21.3	21.8	22.3
	12H	21.4	21.9	21.9	22.4	22.9	21.5	22.0	22.0	22.5	22.9
8H	4H	19.2	19.7	19.7	20.2	20.6	19.3	19.8	19.8	20.3	20.8
	6H	20.8	21.3	21.3	21.8	22.2	20.9	21.3	21.4	21.8	22.3
	8H	21.7	22.0	22.2	22.6	23.1	21.7	22.1	22.2	22.6	23.1
	12H	22.5	22.9	23.1	23.4	23.9	22.6	22.9	23.1	23.4	24.0
12H	4H	19.3	19.8	19.8	20.2	20.7	19.4	19.9	19.9	20.4	20.8
	6H	21.0	21.4	21.5	21.9	22.4	21.1	21.5	21.6	21.9	22.5
	8H	22.0	22.3	22.5	22.8	23.4	22.0	22.3	22.5	22.8	23.4

Maximum UGR = 24.0

POLAR GRAPH



Maximum Candela = 7165 Located At Horizontal Angle = 90, Vertical Angle = 1  
# 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (1) (Through Max. Cd.)