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Report No: L101507103

Date: 11/4/2015



NVLAP LAB CODE 200927-0

**Report No:** L101507103  
**Prepared For:** Tempo Industries  
 1961 McGAw Avenue, Irvine , CA  
**Model Number:** C3R00-12-2103-20DP35S-LG  
**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. Catalog number is C3R00-12-2103-20DP35S-LG. Received in working and undamaged condition. No modifications were necessary.

**Testing Condition:** Fixture is tested with no special conditions.

**Sample Arrival Date:** 10/28/15

**Date of Tests:** 10/30/15 - 11/4/15

**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-S1	11/10/15
Xitron Power Analyzer	2801	MT-EL02-1	12/9/15
BK Precision DC Power Supply	1747	PSDC-04	01/08/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	01/05/16
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

\*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

**Test Summary**

<b>Manufacturer:</b>	Tempo Industries
<b>Model Number:</b>	C3R00-12-2103-20DP35S-LG
<b>Driver Model Number:</b>	N/A
<b>Total Lumens:</b>	41.76
<b>Input Voltage (VDC):</b>	24.00
<b>Input Current (Amp):</b>	0.18
<b>Input Power (W):</b>	0.43
<b>Input Power Factor:</b>	1.00
<b>Current ATHD @ 120V(%):</b>	N/A
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	97
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:35
<b>Total Operating Time (Hours):</b>	1:05
<b>Off State Power(W):</b>	0.00

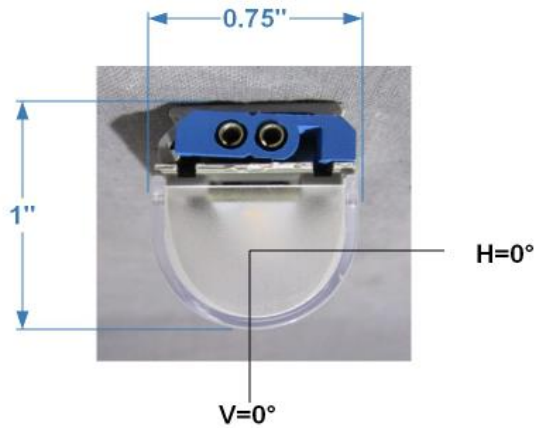


FIG.1 LUMINAIRE

\*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

## 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 Released by:



Jeff Ahn  
Engineering Manager

Test Report Reviewed by:



Steve Kang  
Quality Assurance

*\*Attached are photometric data reports. Total number of pages: 8*



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# Photometric Test Report

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L101507103.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
 [TEST] L101507103  
 [TESTLAB] LIGHT LABORATORY, INC.  
 [ISSUEDATE] 11/4/2015  
 [MANUFAC] TEMPO INDUSTRIES  
 [LUMCAT] C3R00-12-2103-20DP35S-LG  
 [LUMINAIRE] Rigid LED Linear Accent Lighting  
 [MORE] SIZE: 0.75"L. X 3.25"W. X 1"H.  
 [LAMPPOSITION] 0,0  
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
 [POWER SUPPLY] 24VDC CONSTANT VOLTAGE SOURCE  
 [INPUT] 24VDC, 0.43W  
 [TEST PROCEDURE] IESNA:LM-79-08

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	42
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	97
Total Luminaire Watts	0.43
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.48
Spacing Criterion (90-270)	1.34
Spacing Criterion (Diagonal)	1.56
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.06 ft
Luminous Width (90-270)	0.25 ft
Luminous Height	0.04 ft

**LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	4483	4306	5314
55	4444	4026	5576
65	4371	3741	5305
75	4288	3395	5203
85	4256	3213	3489

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

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
<b>0</b>	8.06	8.06	8.06	8.06	8.06
<b>5</b>	8.06	8.06	8.06	8.06	8.06
<b>10</b>	8.06	8.06	8.01	7.97	7.97
<b>15</b>	8.06	8.06	7.97	7.88	7.80
<b>20</b>	8.06	8.01	7.88	7.71	7.71
<b>25</b>	7.97	7.97	7.76	7.63	7.54
<b>30</b>	7.97	7.80	7.54	7.46	7.28
<b>35</b>	7.80	7.67	7.37	7.16	6.94
<b>40</b>	7.63	7.46	7.03	6.77	6.60
<b>45</b>	7.37	7.20	6.73	6.34	6.08
<b>50</b>	7.20	6.86	6.34	5.83	5.66
<b>55</b>	6.94	6.51	5.91	5.23	5.48
<b>60</b>	6.60	6.17	5.48	4.88	4.97
<b>65</b>	6.26	5.83	4.97	4.37	4.20
<b>70</b>	5.83	5.31	4.46	3.73	3.77
<b>75</b>	5.40	4.93	3.90	3.04	3.00
<b>80</b>	4.97	4.46	3.43	2.40	2.14
<b>85</b>	4.46	4.03	3.00	1.89	1.20
<b>90</b>	4.03	3.64	2.74	1.63	0.51
<b>95</b>	3.51	3.21	2.40	1.46	0.00
<b>100</b>	3.17	2.91	2.19	1.33	0.00
<b>105</b>	2.83	2.57	1.97	1.20	0.00
<b>110</b>	2.49	2.36	1.71	1.03	0.00
<b>115</b>	2.14	2.06	1.50	0.90	0.00
<b>120</b>	1.89	1.71	1.29	0.73	0.00
<b>125</b>	1.63	1.50	1.11	0.56	0.00
<b>130</b>	1.29	1.20	0.94	0.39	0.00
<b>135</b>	1.11	1.03	0.77	0.26	0.00
<b>140</b>	0.86	0.81	0.51	0.17	0.00
<b>145</b>	0.69	0.60	0.39	0.17	0.00
<b>150</b>	0.34	0.39	0.30	0.04	0.00
<b>155</b>	0.34	0.30	0.17	0.00	0.00
<b>160</b>	0.17	0.17	0.04	0.00	0.00
<b>165</b>	0.00	0.00	0.00	0.00	0.00
<b>170</b>	0.00	0.00	0.00	0.00	0.00
<b>175</b>	0.00	0.00	0.00	0.00	0.00
<b>180</b>	0.00	0.00	0.00	0.00	0.00

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	3.02	N.A.	7.20
0-30	6.61	N.A.	15.80
0-40	11.23	N.A.	26.90
0-60	21.80	N.A.	52.20
0-80	31.09	N.A.	74.50
0-90	34.34	N.A.	82.20
10-90	33.57	N.A.	80.40
20-40	8.21	N.A.	19.70
20-50	13.43	N.A.	32.20
40-70	15.61	N.A.	37.40
60-80	9.29	N.A.	22.20
70-80	4.25	N.A.	10.20
80-90	3.25	N.A.	7.80
90-110	4.35	N.A.	10.40
90-120	5.72	N.A.	13.70
90-130	6.61	N.A.	15.80
90-150	7.34	N.A.	17.60
90-180	7.42	N.A.	17.80
110-180	3.07	N.A.	7.40
0-180	41.76	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	0.77
10-20	2.25
20-30	3.59
30-40	4.63
40-50	5.21
50-60	5.35
60-70	5.05
70-80	4.25
80-90	3.25
90-100	2.45
100-110	1.90
110-120	1.37
120-130	0.89
130-140	0.50
140-150	0.23
150-160	0.07
160-170	0.01
170-180	0.00

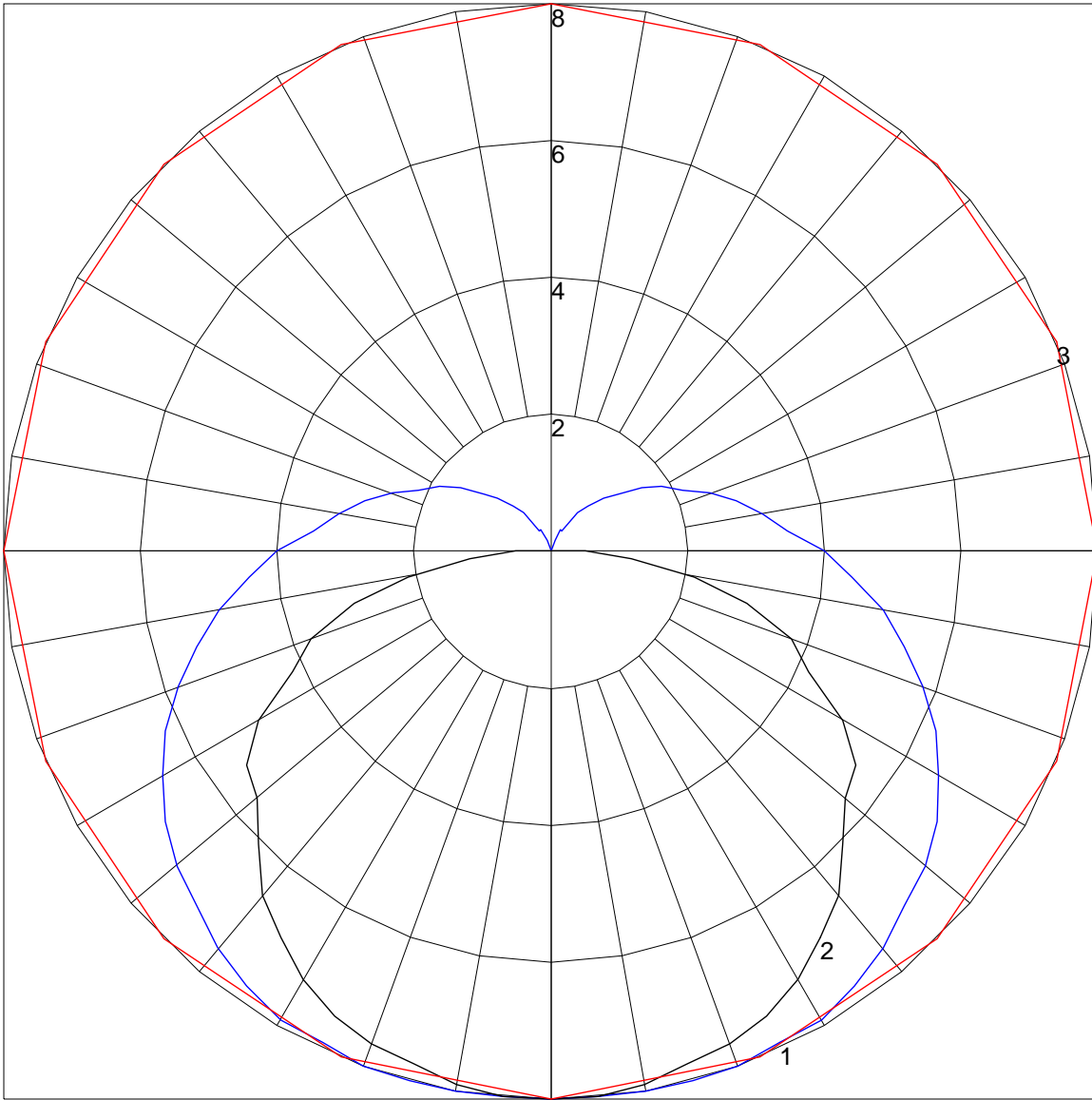
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	114	114	114	114	109	109	109	109	101	101	101	93	93	93	85	85	85	82
1	101	95	89	84	96	91	86	81	83	79	75	76	73	70	70	67	65	61
2	90	81	73	66	86	77	70	64	71	65	60	65	60	56	59	55	52	48
3	81	70	60	53	77	67	58	52	61	54	48	56	50	45	51	46	42	39
4	74	61	51	44	70	58	50	43	54	46	40	49	43	38	45	40	35	33
5	68	54	44	37	64	52	43	36	48	40	34	44	37	32	40	35	30	28
6	62	48	39	32	59	46	38	31	43	35	29	39	33	28	36	31	26	24
7	58	43	34	28	55	42	33	27	39	31	26	36	29	24	33	27	23	21
8	53	39	31	25	51	38	30	24	35	28	23	32	26	22	30	24	20	18
9	50	36	28	22	47	35	27	21	32	25	20	30	24	19	28	22	18	16
10	47	33	25	20	44	32	24	19	30	23	18	28	22	17	26	20	16	15

POLAR GRAPH



Maximum Candela = 8.06 Located At Horizontal Angle = 0, Vertical Angle = 0  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Vertical Plane Through Horizontal Angles (90 - 270)  
# 3 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)