



FOR THE SCOPE OF  
ACCREDITATION UNDER NVLAP LAB  
CODE 100402-0.

# REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Project No. G100572494

Original Issue Date: January 3, 2012

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REPORT NO. 100572494CRT-017

TEST OF ONE FLUORESCENT FIXTURE

FIXTURE MODEL NO. 105-TWG-48-HE-B-AL

RENDERED TO

VODE LIGHTING LLC  
1206 EAST MACARTHUR SUITE 3  
SONOMA, CA 95476

Revision Note May 10, 2012: This report was revised to add lumen efficiency.

TEST: Electrical and Photometric tests as required to the IESNA test standard.

LABORATORY NOTE: The laboratory that conducted the testing detailed in this report has been Qualified, Verified, and Recognized for LM-79 Testing for ENERGY STAR for SSL by US DOE's CALiPER program.

STATEMENT OF LIMITATION: This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

AUTHORIZATION: The testing performed was authorized by signed quote number 500339719.

STANDARDS USED: The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:

IESNA LM-54: 1999 Guide to Lamp Seasoning

IESNA LM-41: 1998 Approved Method for Photometric Testing of Indoor Fluorescent Luminaires

DESCRIPTION OF SAMPLE: The client submitted one sample of model number 105-TWG-48-HE-B-AL. The sample was received by Intertek on November 23, 2011, in undamaged condition, and one sample was tested as received. The sample designation was V238802-4.

DATES OF TESTS: December 16, 2011.

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SUMMARY

Model No.: 105-TWG-48-HE-B-AL
Description: Fluorescent Fixture

Criteria	Result
Total Lumen Output	1560 Lumens
Total Power	30.54 W
Luminaire Efficacy	51.08
Power Factor	0.959

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Calibration Date	Calibration Due Date
Elgar AC Power Supply	CW1251	--	--	--
Xitron Power Analyzer	2503H	E235	04/20/11	04/20/12
Fluke Temperature Meter	53 II	T1318	02/25/11	02/25/12
Kikusui DC Power Supply	35-10L	E160	---	---
Sorenson DC Power Supply	DLM150-20E	--	---	---
Yokogawa Power Meter	WT210	E464	04/19/11	04/19/12
LSI High Speed Mirror Goniometer	6440	--	w/use	w/use
Cole Parmer Hygro Thermometer	445703	T1359	10/26/11	10/26/12

TEST METHODS

Seasoning in Each Burn Orientation

The photometric tests were performed after the lamps were seasoned. Before the photometric tests, each lamp was operated in its designated orientation on the appropriate ballast for a time period greater than 100 hours in accordance with IESNA LM-54 Guide to Lamp Seasoning.

Photometric and Electrical measurements – Distribution Method

A LSI Type C High Speed Model 6440 Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for each sample.

Ambient temperature was measured equal to the height of the sample mounted on the Goniometer equipment. Each sample was operated at input rated voltage in its designated orientation. Each sample was allowed to stabilize for at least thirty minutes before measurements were made. Electrical measurements including voltage, current, and power were measured using the Xitron or Yokogawa Power Analyzer.

Some graphics were created with Photometrics Plus software.

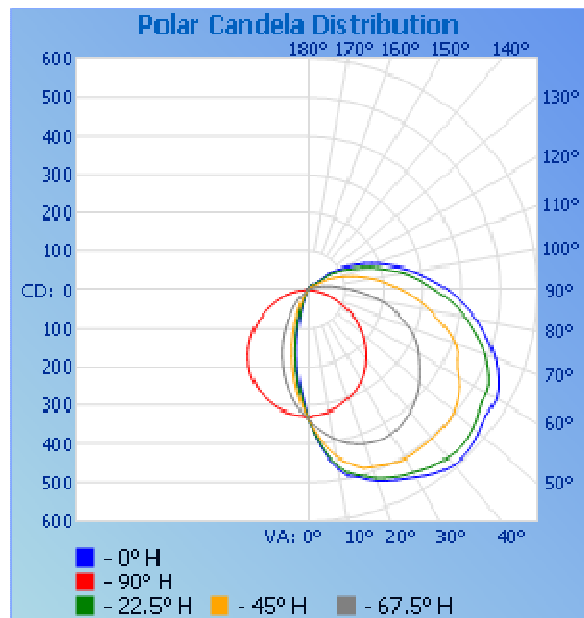
## RESULTS OF TESTS

### Photometric and Electrical Measurements – Distribution Method

Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
105-TWG-48-HE-B-AL							
V238802-4	LINEAR	277.0	114.9	30.54	0.959	1560	51.08

### Intensity (Candlepower) Summary at 25°C - Candelas

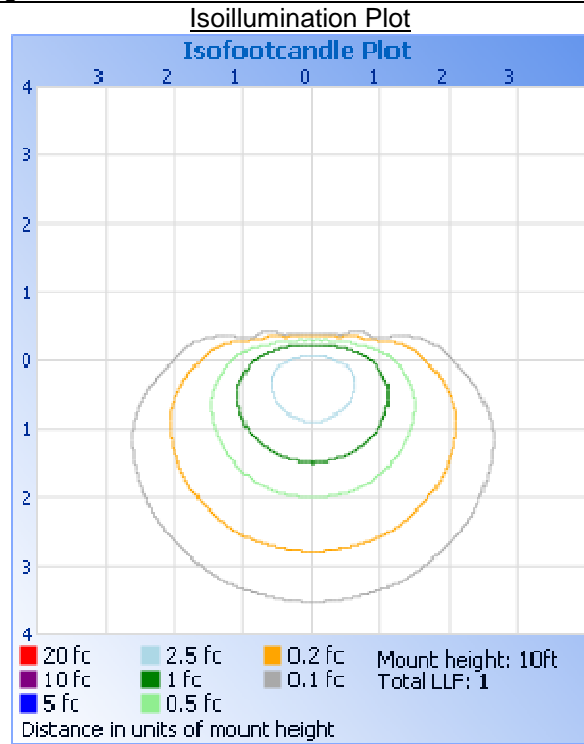
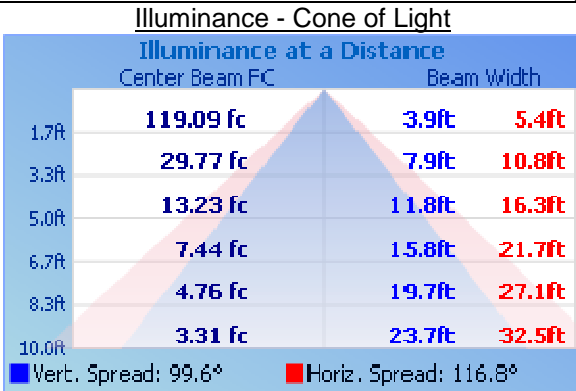
Angle	0	22.5	45	67.5	90
105-TWG-48-HE-B-AL					
0	331	331	331	331	331
5	409	404	389	364	325
10	470	461	438	391	321
15	501	496	470	412	314
20	527	519	488	426	303
25	544	535	498	433	291
30	561	546	506	434	275
35	580	559	505	426	258
40	592	568	505	414	237
45	591	570	502	399	214
50	581	562	495	380	190
55	568	546	479	356	164
60	567	539	454	334	138
65	547	522	429	311	111
70	519	493	408	280	82
75	484	456	371	243	56
80	449	419	329	209	30
85	406	376	287	158	9
90	365	333	244	116	0
95	320	293	207	84	0
100	279	254	172	58	0
105	238	212	137	36	0
110	199	174	104	17	0
115	161	136	76	11	0
120	122	102	37	6	0
125	89	71	12	2	0
130	22	7	15	0	0
135	1	5	12	0	0
140	15	20	5	0	0
145	12	9	0	0	0
150	4	2	0	0	0
155	0	0	0	0	0
160	0	0	0	0	0



## RESULTS OF TESTS (cont'd)

### Illumination Plots

Model No.: 105-TWG-48-HE-B-AL  
Mounting Height: 10 ft.



### Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Lamp	% Luminaire
105-TWG-48-HE-B-AL			
0-30	246.5	8.5	15.8
0-40	411.9	14.2	26.4
0-60	809.8	27.9	51.9
60-90	526.1	18.1	33.7
0-90	1336	46.1	85.6
90-180	224.1	7.7	14.4
0-180	1560	53.8	100.0

Pictures (not to scale)



## CONCLUSION

The results tabulated in this report are representative of the actual test samples submitted for this report only. The data is provided to the client for further evaluation. Compliance to the referenced specification requirements was not determined in this report.

In Charge Of Tests:



Kenda Branch  
Engineer  
Lighting Division

Attachment: None

Report Reviewed By:



Jacki Swiernik  
Staff Engineer  
Lighting Division