



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

Revision Date: August 13, 2012

REPORT NO. 100572494CRT-012

TEST OF ONE FLUORESCENT FIXTURE

FIXTURE MODEL NO. 105-TQU-48-HE-PL-AL

RENDERED TO

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

Revision Note August 13, 2012: This report was revised to correct IES file data.

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-TQU-48-HE-PL-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 V238803-8.

DATES OF TESTS: December 16, 2011.

SUMMARY

Model No.: 105-TQU-48-HE-PL-AL
Description: Fluorescent Fixture

Criteria	Result
Total Lumen Output	2141 Lumens
Total Power	30.18 W
Luminaire Efficacy	70.94
Power Factor	0.958

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Calibration Date	Calibration Due Date
Leeds & Northup Standard Resistor	Manganin	Y089	02/24/12	02/24/13
Data Precision Digital Voltmeter	3600	V124	02/24/12	02/24/13
Fluke Multimeter	45	M133	02/24/12	02/24/13
Fluke Temperature Meter	53 II	T1318	03/12/12	03/12/13
Kikusui DC Power Supply	35-10L	E160	---	---
Sorenson DC Power Supply	DLM150-20E	--	---	---
NIST Spectral Flux Standard Source	RF1024	---	09/18/10	100 hours of use
Elgar AC Power Supply	CW1251	--	--	--
Yokogawa Power Meter	WT210	E464	04/19/11	04/19/12*
LSI High Speed Mirror Goniometer	6440	--	04/13/12	05/13/12*
Cole Parmer Hygro Thermometer	445703	T1359	10/26/11	10/26/12*

\*Testing using this equipment was completed 12/16/12.

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.

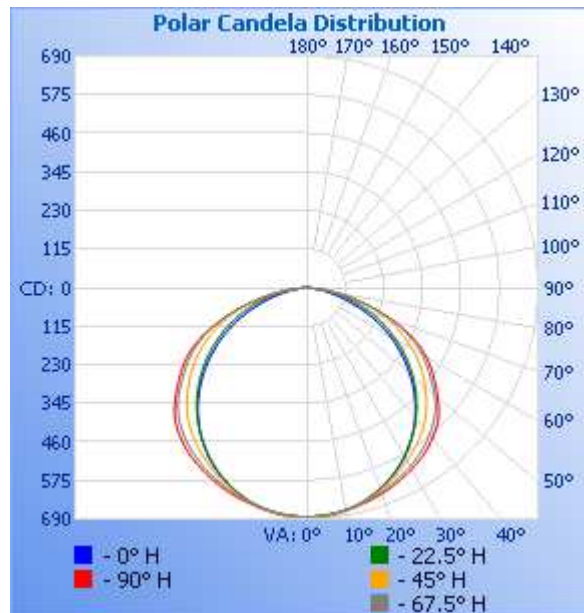
## RESULTS OF TESTS

### 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)
V238803-8	LINEAR	277.0	113.8	30.18	0.958	2141	70.94

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

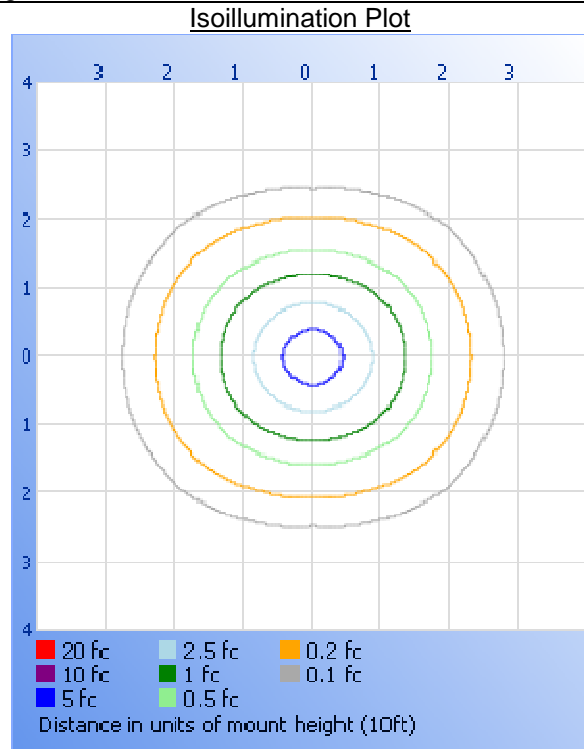
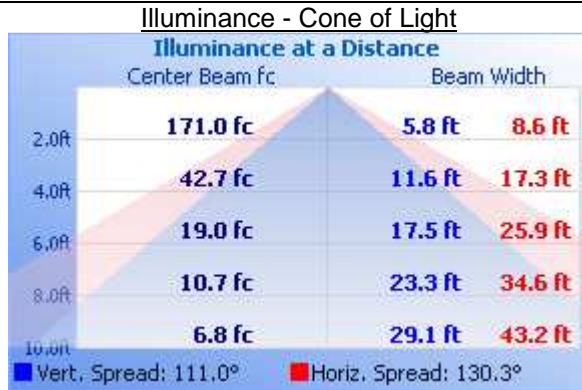
Angle	0	22.5	45	67.5	90
0	684	684	684	684	684
5	681	681	683	681	683
10	673	673	675	673	675
15	660	659	661	661	665
20	640	638	643	649	654
25	615	612	622	633	641
30	584	582	597	616	626
35	546	546	572	596	608
40	504	507	542	571	585
45	456	463	505	540	556
50	403	414	461	499	510
55	346	362	416	448	462
60	287	306	364	398	412
65	224	250	306	338	345
70	159	192	243	259	260
75	101	133	170	175	174
80	49	76	98	99	98
85	11	28	37	37	35
90	0	0	0	0	0



## RESULTS OF TESTS (cont'd)

### Illumination Plots

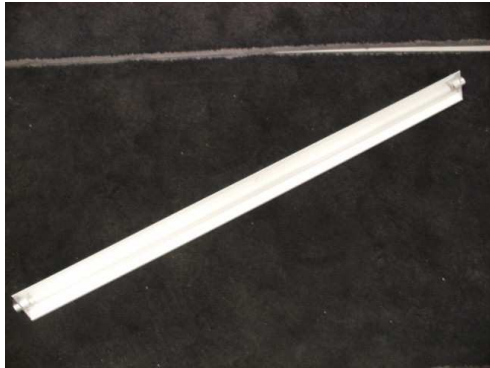
Mounting Height: 10 ft.



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

Zone	Lumens	% Lamp	% Luminaire
0-30	539.3	18.6	25.2
0-40	897.7	31.0	41.9
0-60	1650	56.9	77.1
60-90	491.2	16.9	22.9
0-90	2141	73.8	100.0
90-180	0.0	0.0	0.0
0-180	2141	73.8	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