



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-006

TEST OF ONE FLUORESCENT FIXTURE

FIXTURE MODEL NO. 105-TBB-48-HE-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-TBB-48-HE-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 V238803-4.

DATES OF TESTS: December 15, 2011.

SUMMARY

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

Criteria	Result
Total Lumen Output	1332 Lumens
Total Power	31.55 W
Luminaire Efficacy	42.22
Power Factor	0.961

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 12/15/11.

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.

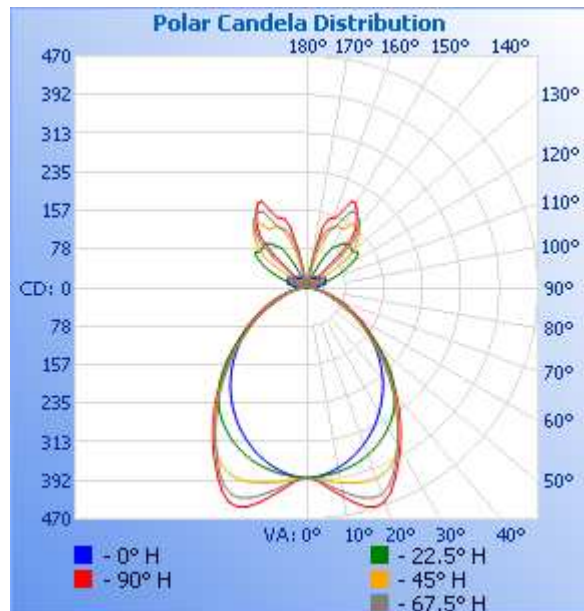
## RESULTS OF TESTS

### 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)
V238803-4	LINEAR	277.0	118.6	31.55	0.961	1332	42.22

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

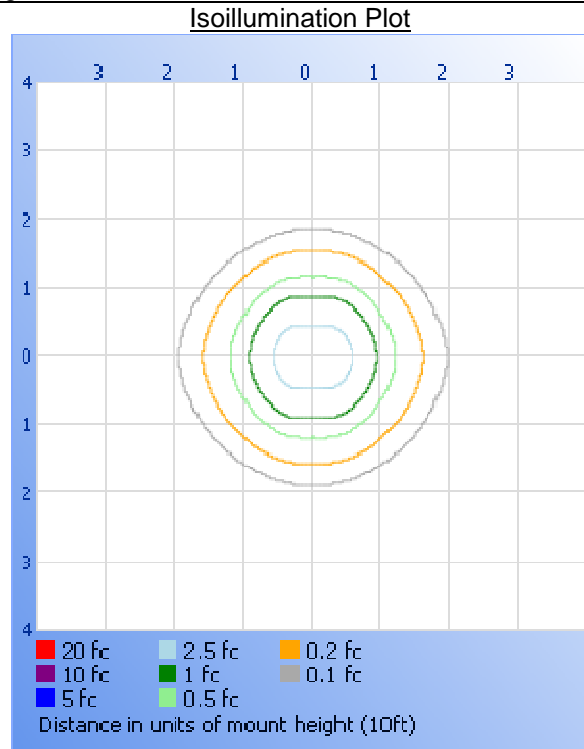
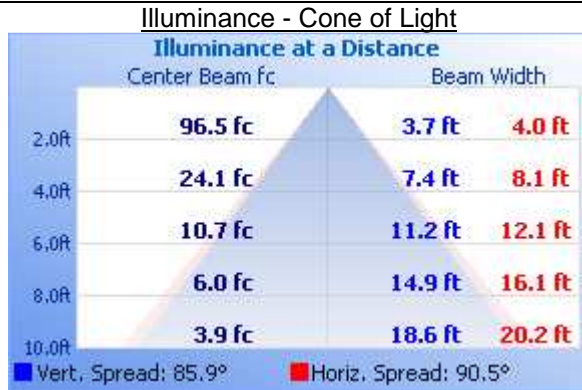
Angle	0	22.5	45	67.5	90
0	386	386	386	386	386
5	382	384	392	398	402
10	371	379	402	420	431
15	357	372	409	442	460
20	339	362	413	447	463
25	318	348	402	417	426
30	294	330	372	369	379
35	268	308	325	320	331
40	240	278	276	273	283
45	210	241	227	226	236
50	178	196	181	181	192
55	145	150	139	144	156
60	110	107	104	111	124
65	74	72	74	82	93
70	51	49	51	59	67
75	36	33	33	39	45
80	22	20	19	23	27
85	9	9	9	10	12
90	2	3	5	7	8
95	16	5	8	10	11
100	34	11	11	14	16
105	40	30	16	18	21
110	41	57	23	24	27
115	41	85	24	31	33
120	39	112	31	41	45
125	34	127	97	15	9
130	31	118	129	29	8
135	29	122	151	137	93
140	27	118	165	166	154
145	25	102	156	179	179
150	22	78	139	178	198
155	19	26	137	135	172
160	18	3	110	125	151
165	17	3	48	94	128
170	16	6	2	13	32
175	15	9	7	5	3
180	13	13	13	13	13



## RESULTS OF TESTS (cont'd)

### Illumination Plots

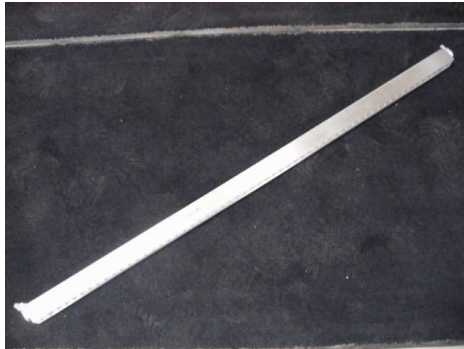
Mounting Height: 10 ft.



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

Zone	Lumens	% Lamp	% Luminaire
0-30	329.2	11.4	24.7
0-40	524.6	18.1	39.4
0-60	831.7	28.7	62.5
60-90	129.5	4.5	9.7
0-90	961.2	33.1	72.2
90-180	370.4	12.8	27.8
0-180	1332	45.9	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