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-020

TEST OF ONE FLUORESCENT FIXTURE

FIXTURE MODEL NO. 105-TBP-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-TBP-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 V238803-2.

DATES OF TESTS: December 19, 2011 through February 29, 2012.

SUMMARY

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

Criteria	Result
Total Lumen Output	1667 Lumens
Total Power	31.61 W
Luminaire Efficacy	52.74
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 2/29/12.

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.

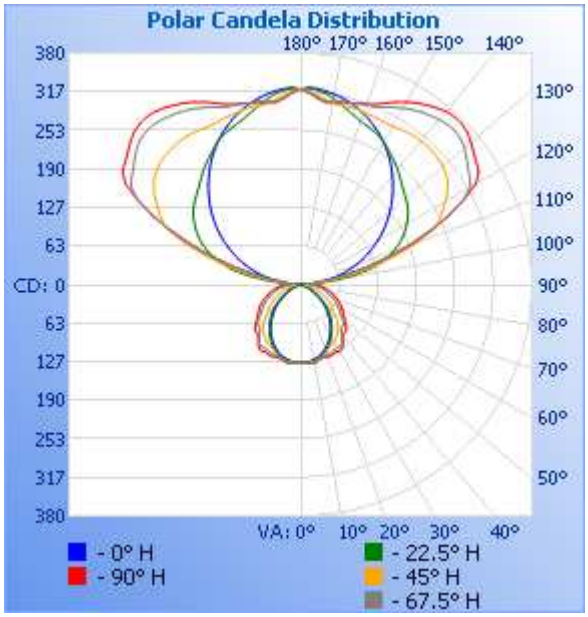
RESULTS OF TESTS

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)
V238803-2	LINEAR	277.0	118.6	31.61	0.961	1667	52.74

Intensity (Candlepower) Summary at 25℃ - Candelas

Angle	0	22.5	45	67.5	90
0	128	128	128	128	128
5	128	128	129	130	130
10	125	126	129	130	130
15	120	123	126	126	126
20	114	117	119	122	126
25	106	110	113	123	126
30	96	100	110	119	126
35	86	90	103	118	121
40	74	79	96	105	108
45	62	68	85	97	106
50	49	56	70	91	95
55	36	42	63	79	87
60	24	30	51	70	79
65	15	19	41	63	70
70	8	12	33	52	61
75	4	8	23	44	54
80	2	4	15	35	45
85	1	3	8	25	34
90	3	4	9	19	26
95	19	30	13	14	17
100	46	89	66	48	41
105	73	133	136	118	111
110	98	163	206	194	189
115	123	185	252	269	266
120	147	202	274	322	332
125	170	215	295	335	352
130	193	224	304	351	365
135	214	235	308	358	374
140	234	248	308	354	372
145	254	259	306	346	360
150	271	272	301	335	347
155	287	280	301	322	329
160	300	287	301	314	316
165	310	298	303	309	309
170	318	310	302	305	303
175	323	321	314	310	308
180	321	321	321	321	321

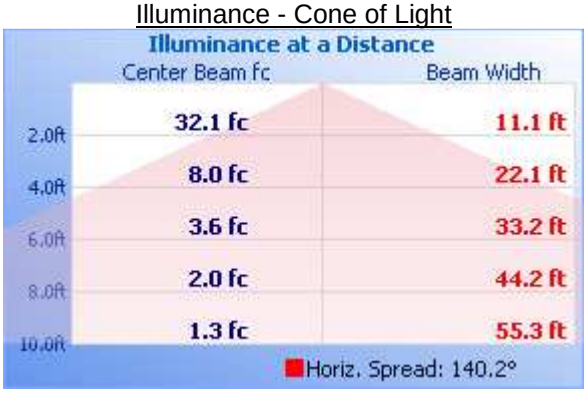


RESULTS OF TESTS (cont'd)

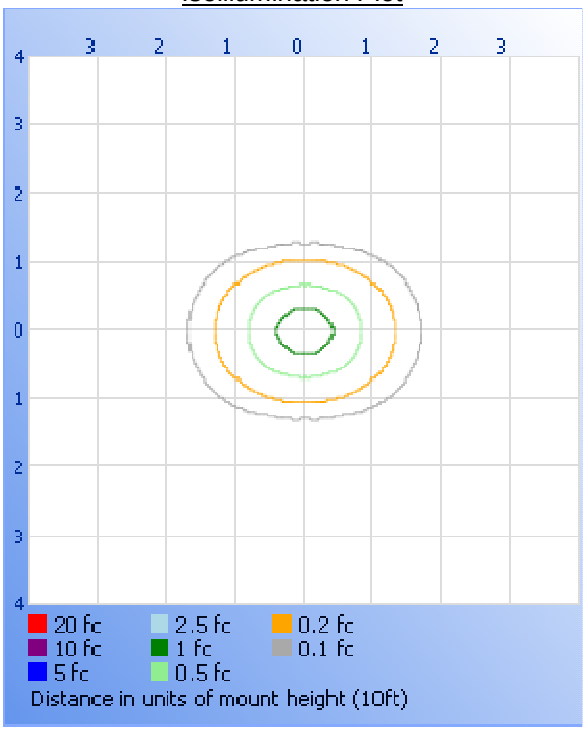
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



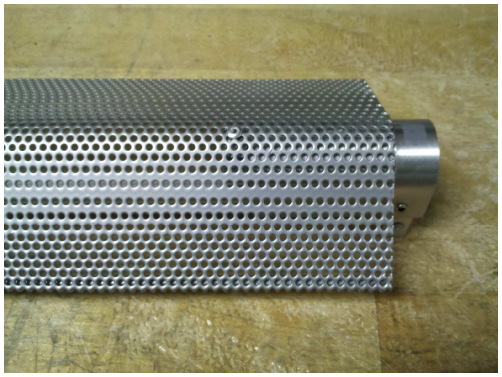
Isoillumination Plot



Zonal Lumen Summary and Percentages at 25℃

Zone	Lumens	% Lamp	% Luminaire
0-30	100.5	3.5	6.0
0-40	164.7	5.7	9.9
0-60	283.5	9.8	17.0
60-90	83.8	2.9	5.0
0-90	367.3	12.7	22.0
90-180	1299	44.8	78.0
0-180	1667	57.5	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

Report Reviewed By:

Jacki Swiernik
Staff Engineer
Lighting Division

Attachment: None