



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

REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Project No. G100572494

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REPORT NO. 100572494CRT-019

TEST OF ONE FLUORESCENT FIXTURE

FIXTURE MODEL NO. 105-TWG-48-HE-PL-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 lamp 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-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 V238802-1.

DATES OF TESTS: December 19, 2011.

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SUMMARY

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

Criteria	Result
Total Lumen Output	1429 Lumens
Total Power	29.37 W
Luminaire Efficacy	48.66
Power Factor	0.956

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.

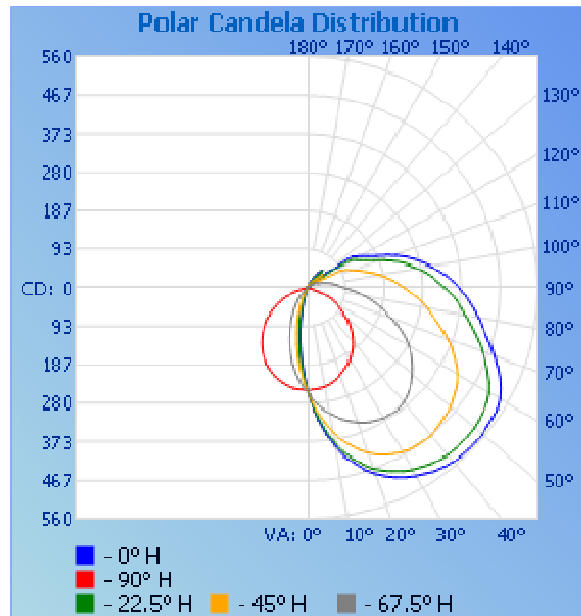
RESULTS OF TESTS

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-PL-AL							
V238802-1	LINEAR	277.0	110.9	29.37	0.956	1429	48.66

Intensity (Candlepower) Summary at 25°C - Candelas

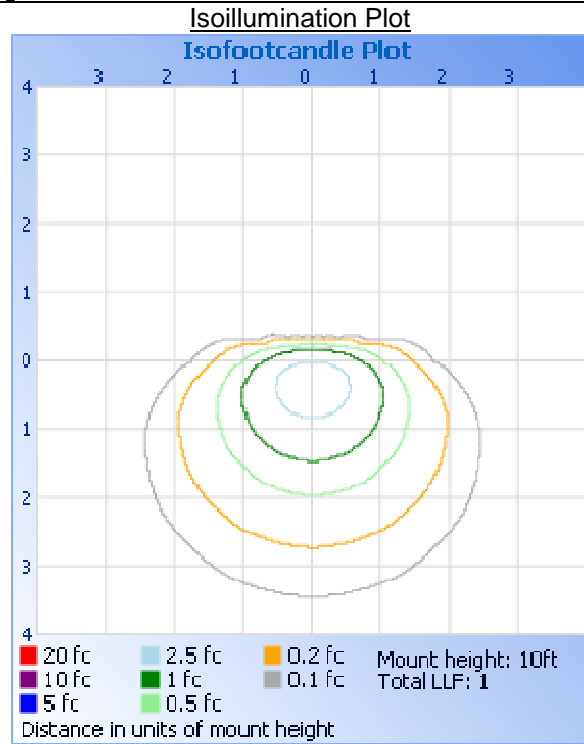
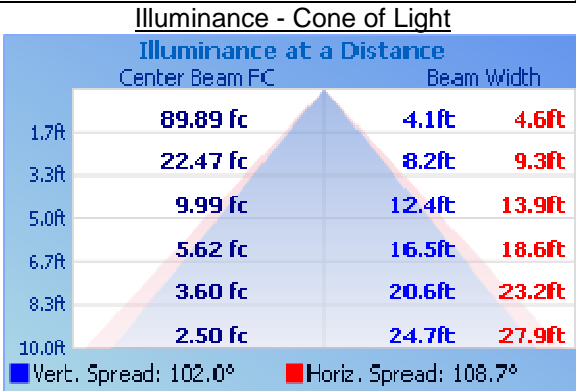
Angle	0	22.5	45	67.5	90
105-TWG-48-HE-PL-AL					
0	250	250	250	250	250
5	322	318	304	282	245
10	390	380	354	308	242
15	440	429	394	330	236
20	479	466	425	346	228
25	506	491	446	359	217
30	526	509	459	366	204
35	542	521	466	367	189
40	550	528	466	362	172
45	553	530	460	349	153
50	553	528	451	332	132
55	549	522	437	311	110
60	539	511	420	285	88
65	515	484	392	254	64
70	483	453	363	220	41
75	451	421	328	185	22
80	422	391	297	152	8
85	395	363	267	121	2
90	369	334	235	93	0
95	338	304	209	74	0
100	305	273	178	61	0
105	270	238	150	48	0
110	230	197	124	32	0
115	183	160	106	28	0
120	154	136	38	21	0
125	132	80	23	15	0
130	5	13	49	10	0
135	3	26	33	7	0
140	54	46	21	4	0
145	34	30	12	3	0
150	22	18	8	3	0
155	12	10	5	2	0
160	7	5	4	0	0
165	6	3	2	0	0
170	0	0	0	0	0
175	0	0	0	0	0
180	0	0	0	0	0



RESULTS OF TESTS (cont'd)

Illumination Plots

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



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Lamp	% Luminaire
105-TWG-48-HE-PL-AL			
0-30	200.7	6.9	14.1
0-40	346.0	11.9	24.2
0-60	702.9	24.2	49.2
60-90	466.0	16.1	32.6
0-90	1169	40.3	81.8
90-180	259.8	9.0	18.2
0-180	1429	49.3	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