



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: December 16, 2011

Revision Date: August 13, 2012

REPORT NO. 100572494CRT-003

TEST OF ONE FLUORESCENT FIXTURE

FIXTURE MODEL NO. 105-THP-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-THP-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 V238802-6.

DATES OF TESTS: December 14, 2011.

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SUMMARY

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

Criteria	Result
Total Lumen Output	1891 Lumens
Total Power	31.50 W
Luminaire Efficacy	60.03
Power Factor	0.960

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 12/14/11.

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.

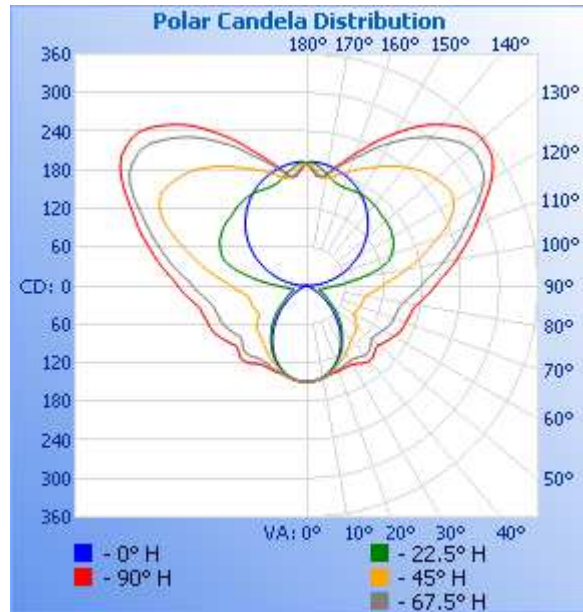
RESULTS OF TESTS

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)
V238802-6	LINEAR	277.0	118.4	31.50	0.961	1891	60.03

Intensity (Candlepower) Summary at 25°C - Candelas

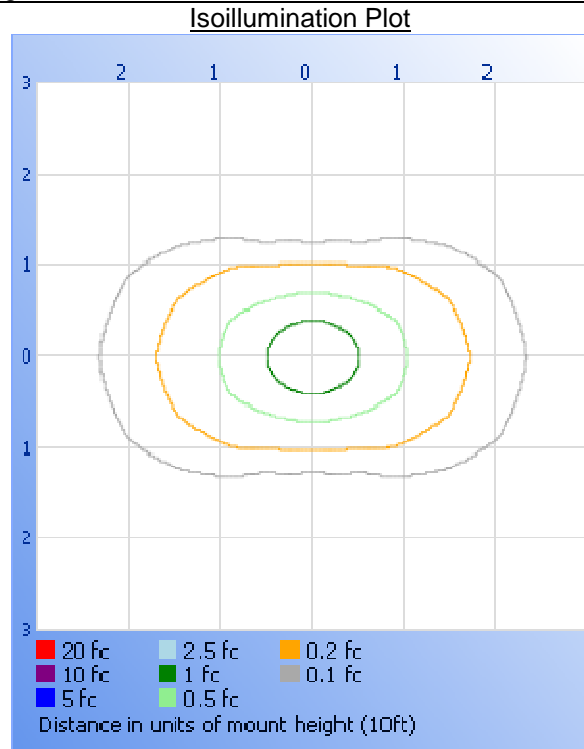
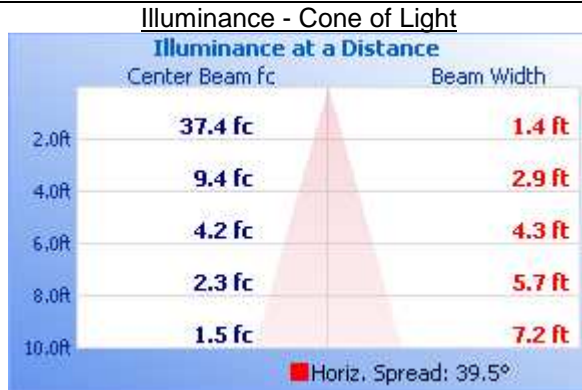
Angle	0	22.5	45	67.5	90
0	150	150	150	150	150
5	148	149	148	148	149
10	145	145	146	146	146
15	138	139	141	142	143
20	130	131	134	140	142
25	119	121	128	137	141
30	106	110	121	135	142
35	92	97	114	136	148
40	77	84	108	141	152
45	61	71	106	139	149
50	45	57	101	131	145
55	30	44	92	133	151
60	18	35	86	138	157
65	10	29	88	143	163
70	5	22	90	145	164
75	2	22	91	147	168
80	2	27	93	153	174
85	1	32	104	164	187
90	2	46	118	178	200
95	16	68	138	196	217
100	31	96	161	216	237
105	46	126	188	239	258
110	62	141	217	262	281
115	78	149	248	289	305
120	94	154	264	317	332
125	108	158	267	331	352
130	122	160	260	333	356
135	135	161	253	320	347
140	147	164	240	302	327
145	157	166	228	280	303
150	167	166	212	256	273
155	175	164	200	232	245
160	181	164	189	210	218
165	186	168	178	192	196
170	190	177	170	174	176
175	193	188	179	174	172
180	191	191	191	191	191



RESULTS OF TESTS (cont'd)

Illumination Plots

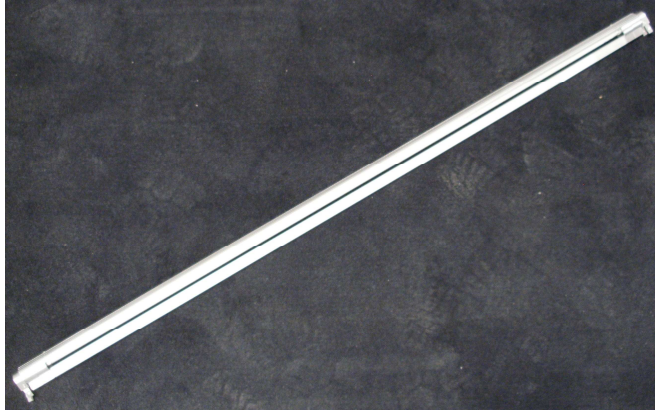
Mounting Height: 10 ft.



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Lamp	% Luminaire
0-30	113.3	3.9	6.0
0-40	186.7	6.4	9.9
0-60	348.7	12.0	18.4
60-90	285.8	9.9	15.1
0-90	634.5	21.9	33.6
90-180	1257	43.3	66.4
0-180	1891	65.2	100.0

Picture (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