



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-021

TEST OF ONE FLUORESCENT FIXTURE

FIXTURE MODEL NO. 105-TQF-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-TQF-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 V238803-6.

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

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SUMMARY

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

Criteria	Result
Total Lumen Output	2537 Lumens
Total Power	31.81 W
Luminaire Efficacy	79.75
Power Factor	0.962

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.

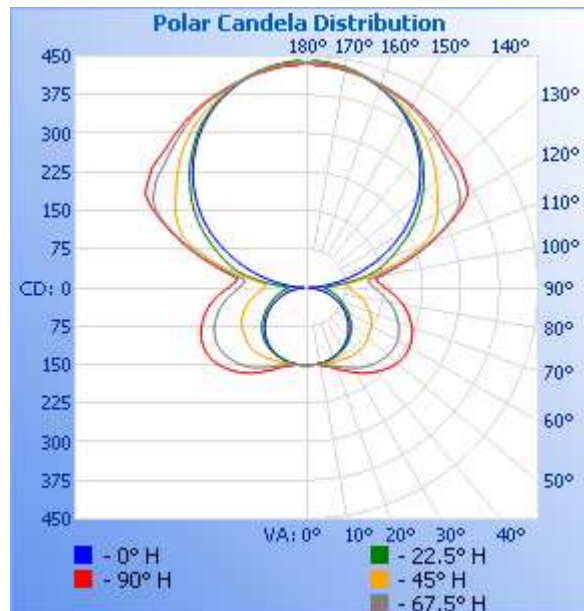
RESULTS OF TESTS

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)
V238803-6	LINEAR	277.0	119.4	31.81	0.962	2537	79.75

Intensity (Candlepower) Summary at 25°C - Candelas

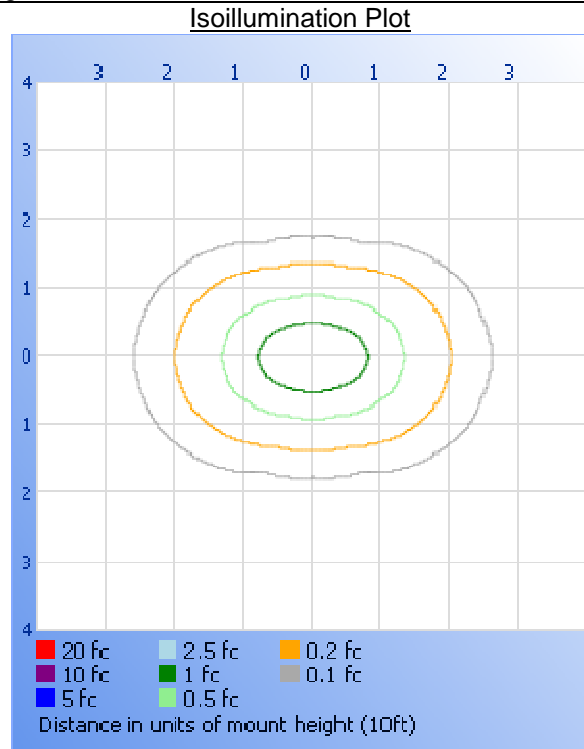
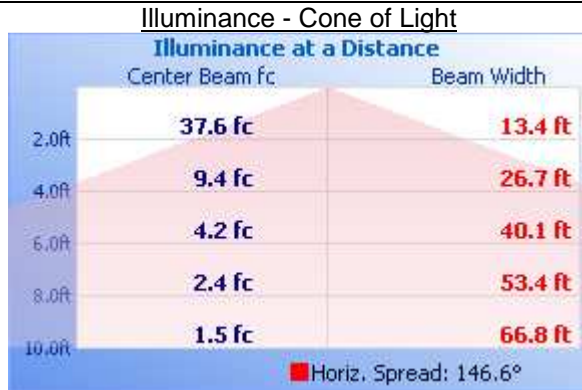
Angle	0	22.5	45	67.5	90
0	150	150	150	150	150
5	150	150	151	150	150
10	150	150	151	152	153
15	148	148	152	156	158
20	145	146	153	162	167
25	142	144	155	170	178
30	137	140	157	180	190
35	131	135	159	189	203
40	124	129	160	196	213
45	116	122	158	201	222
50	106	113	155	205	229
55	95	103	151	206	232
60	83	92	146	204	231
65	70	80	138	198	226
70	56	69	129	189	217
75	42	60	118	177	206
80	28	51	106	163	191
85	14	41	92	146	172
90	4	35	82	131	153
95	27	58	81	120	137
100	61	109	124	144	153
105	100	148	181	195	202
110	139	176	237	252	258
115	178	207	273	308	315
120	216	238	295	345	362
125	252	269	311	358	374
130	284	295	329	365	382
135	313	322	349	374	386
140	340	346	366	386	394
145	364	369	382	396	402
150	384	388	396	406	410
155	401	403	407	413	415
160	415	417	417	420	420
165	426	428	426	426	425
170	434	435	433	432	429
175	439	440	437	436	433
180	438	438	438	438	438



RESULTS OF TESTS (cont'd)

Illumination Plots

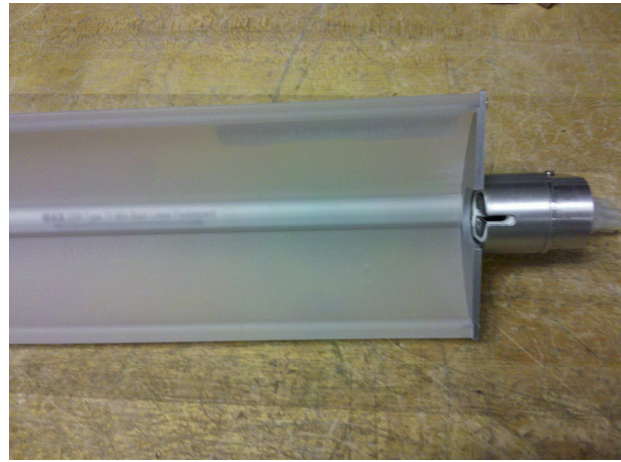
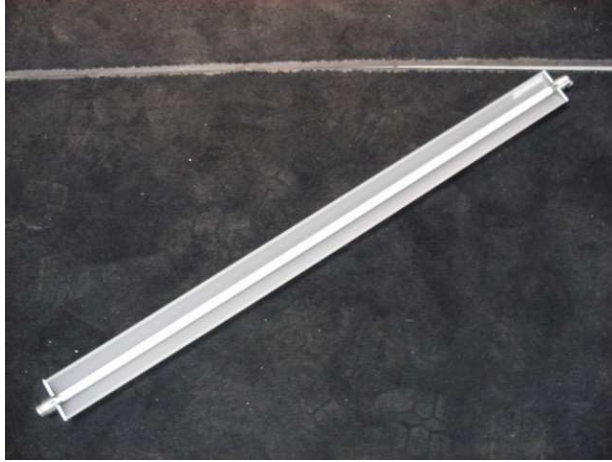
Mounting Height: 10 ft.



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Lamp	% Luminaire
0-30	130.5	4.5	5.1
0-40	232.4	8.0	9.2
0-60	497.5	17.2	19.6
60-90	368.4	12.7	14.5
0-90	865.8	29.9	34.1
90-180	1672	57.6	65.9
0-180	2537	87.5	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

Attachment: None

Report Reviewed By:



Jacki Swiernik
Staff Engineer
Lighting Division