



# LUMINAIRE TESTING LABORATORY, INC.

SUSTAINING  
MEMBER  
of the  
IESNA

905 Harrison Street · Allentown, PA 18103 · 610-770-1044 · Fax 610-770-8912 · www.LuminaireTesting.com

LTL NUMBER: 18382

DATE: 07-01-2010

PREPARED FOR: LUMETTA, INC.

CATALOG NUMBER: FP2093

LUMINAIRE: FORMED STEEL HOUSING WITH WHITE REFLECTOR, TRANSLUCENT WHITE PLASTIC INNER DIFFUSER WITH TRANSLUCENT WHITE PLASTIC LOWER LENS, FROSTED PLASTIC OUTER DIFFUSER WITH CLEAR PLASTIC UPPER LENS, OPEN BOTTOM.

LAMP: ONE VBU 24 WATT TWIN TUBE T5 FLUORESCENT LAMP RATED AT 1800 LUMENS.

LAMP CATALOG NUMBER: SYLVANIA FT24DL/835

BALLAST: ONE B&L TECHNOLOGIES NVG-1128-PSX

MOUNTING: PENDANT

ELECTRICAL VALUES: 120.0VAC, 0.1524A, 16.27W

### Candela Distribution

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	
5	74.8	75.0	76.1	74.7	73.8	74.7	76.1	75.0	74.8	75.0	76.1	74.7	73.8	74.7	76.1	75.0	7.3
15	78.2	83.7	84.5	82.4	76.7	82.4	84.5	83.7	78.2	83.7	84.5	82.4	76.7	82.4	84.5	83.7	23.2
25	81.3	85.9	85.4	84.7	79.1	84.7	85.4	85.9	81.3	85.9	85.4	84.7	79.1	84.7	85.4	85.9	38.9
35	86.6	89.9	88.1	87.5	82.8	87.5	88.1	89.9	86.6	89.9	88.1	87.5	82.8	87.5	88.1	89.9	54.8
45	85.4	90.2	90.8	87.1	81.1	87.1	90.8	90.2	85.4	90.2	90.8	87.1	81.1	87.1	90.8	90.2	67.9
55	83.7	89.4	86.8	85.4	78.2	85.4	86.8	89.4	83.7	89.4	86.8	85.4	78.2	85.4	86.8	89.4	76.7
65	80.1	86.3	83.9	81.3	73.6	81.3	83.9	86.3	80.1	86.3	83.9	81.3	73.6	81.3	83.9	86.3	81.3
75	79.6	85.8	83.7	81.1	72.8	81.1	83.7	85.8	79.6	85.8	83.7	81.1	72.8	81.1	83.7	85.8	86.3
85	77.2	84.1	83.1	79.6	69.9	79.6	83.1	84.1	77.2	84.1	83.1	79.6	69.9	79.6	83.1	84.1	87.3
90	76.2	83.3	82.3	77.9	68.7	77.9	82.3	83.3	76.2	83.3	82.3	77.9	68.7	77.9	82.3	83.3	
95	76.2	83.0	82.2	78.1	68.7	78.1	82.2	83.0	76.2	83.0	82.2	78.1	68.7	78.1	82.2	83.0	86.1
105	77.0	82.9	80.8	78.4	70.4	78.4	80.8	82.9	77.0	82.9	80.8	78.4	70.4	78.4	80.8	82.9	83.4
115	77.2	81.7	78.7	77.1	71.4	77.1	78.7	81.7	77.2	81.7	78.7	77.1	71.4	77.1	78.7	81.7	77.5
125	81.3	82.7	76.1	80.5	76.2	80.5	76.1	82.7	81.3	82.7	76.1	80.5	76.2	80.5	76.1	82.7	71.5
135	81.6	86.8	78.7	86.5	80.4	86.5	78.7	86.8	81.6	86.8	78.7	86.5	80.4	86.5	78.7	86.8	64.7
145	87.1	98.9	115.2	97.5	87.1	97.5	115.2	98.9	87.1	98.9	115.2	97.5	87.1	97.5	115.2	98.9	62.3
155	102.9	121.5	128.9	107.9	87.9	107.9	128.9	121.5	102.9	121.5	128.9	107.9	87.9	107.9	128.9	121.5	51.4
165	72.6	90.0	92.8	79.5	50.3	79.5	92.8	90.0	72.6	90.0	92.8	79.5	50.3	79.5	92.8	90.0	23.2
175	30.7	30.1	31.1	28.7	27.1	28.7	31.1	30.1	30.7	30.1	31.1	28.7	27.1	28.7	31.1	30.1	3.5
180	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	

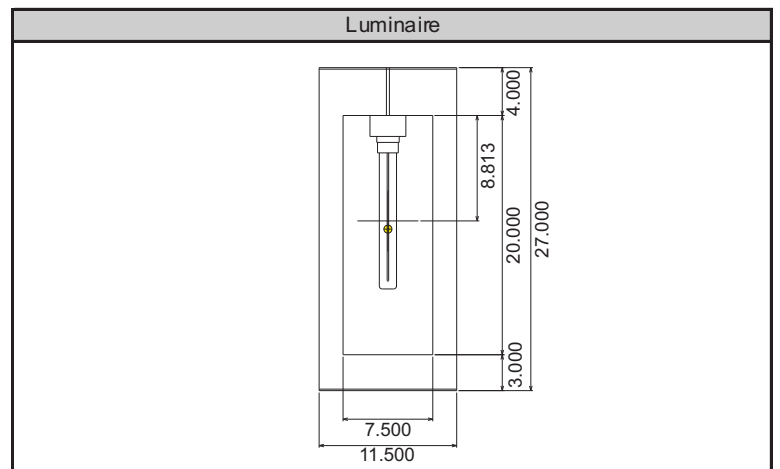
### Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	69.5	3.9%	6.6%
0-40	124.3	6.9%	11.9%
0-60	268.8	14.9%	25.7%
0-90	523.8	29.1%	50.0%
90-180	523.6	29.1%	50.0%
0-180	1047.4	58.2%	100.0%

Total luminaire efficiency: 58.2%

CIE Type: Direct/Indirect

Spacing Criterion: 0 deg: 1.83 90 deg: 1.77  
180 deg: 1.83 270 deg: 1.77



Approved By: MG

THIS REPORT BASED ON LM-41 AND OTHER PERTINENT IESNA PROCEDURES.



Candela Tabulation (5 degree Vertical Increments)

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7
5	74.8	75.0	76.1	74.7	73.8	74.7	76.1	75.0	74.8	75.0	76.1	74.7	73.8	74.7	76.1	75.0
10	77.4	81.2	83.6	80.4	76.0	80.4	83.6	81.2	77.4	81.2	83.6	80.4	76.0	80.4	83.6	81.2
15	78.2	83.7	84.5	82.4	76.7	82.4	84.5	83.7	78.2	83.7	84.5	82.4	76.7	82.4	84.5	83.7
20	79.9	84.7	84.7	83.7	77.7	83.7	84.7	84.7	79.9	84.7	84.7	83.7	77.7	83.7	84.7	84.7
25	81.3	85.9	85.4	84.7	79.1	84.7	85.4	85.9	81.3	85.9	85.4	84.7	79.1	84.7	85.4	85.9
30	84.0	87.4	86.6	85.8	81.3	85.8	86.6	87.4	84.0	87.4	86.6	85.8	81.3	85.8	86.6	87.4
35	86.6	89.9	88.1	87.5	82.8	87.5	88.1	89.9	86.6	89.9	88.1	87.5	82.8	87.5	88.1	89.9
40	85.9	90.5	90.4	87.6	82.3	87.6	90.4	90.5	85.9	90.5	90.4	87.6	82.3	87.6	90.4	90.5
45	85.4	90.2	90.8	87.1	81.1	87.1	90.8	90.2	85.4	90.2	90.8	87.1	81.1	87.1	90.8	90.2
50	85.0	89.9	88.8	86.3	79.6	86.3	88.8	89.9	85.0	89.9	88.8	86.3	79.6	86.3	88.8	89.9
55	83.7	89.4	86.8	85.4	78.2	85.4	86.8	89.4	83.7	89.4	86.8	85.4	78.2	85.4	86.8	89.4
60	82.0	87.7	84.8	83.9	76.0	83.9	84.8	87.7	82.0	87.7	84.8	83.9	76.0	83.9	84.8	87.7
65	80.1	86.3	83.9	81.3	73.6	81.3	83.9	86.3	80.1	86.3	83.9	81.3	73.6	81.3	83.9	86.3
70	79.6	85.0	82.7	80.5	72.8	80.5	82.7	85.0	79.6	85.0	82.7	80.5	72.8	80.5	82.7	85.0
75	79.6	85.8	83.7	81.1	72.8	81.1	83.7	85.8	79.6	85.8	83.7	81.1	72.8	81.1	83.7	85.8
80	78.7	85.7	83.9	80.5	71.4	80.5	83.9	85.7	78.7	85.7	83.9	80.5	71.4	80.5	83.9	85.7
85	77.2	84.1	83.1	79.6	69.9	79.6	83.1	84.1	77.2	84.1	83.1	79.6	69.9	79.6	83.1	84.1
90	76.2	83.3	82.3	77.9	68.7	77.9	82.3	83.3	76.2	83.3	82.3	77.9	68.7	77.9	82.3	83.3
95	76.2	83.0	82.2	78.1	68.7	78.1	82.2	83.0	76.2	83.0	82.2	78.1	68.7	78.1	82.2	83.0
100	76.5	82.8	81.4	78.1	69.5	78.1	81.4	82.8	76.5	82.8	81.4	78.1	69.5	78.1	81.4	82.8
105	77.0	82.9	80.8	78.4	70.4	78.4	80.8	82.9	77.0	82.9	80.8	78.4	70.4	78.4	80.8	82.9
110	77.0	81.6	79.6	77.4	70.9	77.4	79.6	81.6	77.0	81.6	79.6	77.4	70.9	77.4	79.6	81.6
115	77.2	81.7	78.7	77.1	71.4	77.1	78.7	81.7	77.2	81.7	78.7	77.1	71.4	77.1	78.7	81.7
120	80.6	83.7	77.1	78.7	73.8	78.7	77.1	83.7	80.6	83.7	77.1	78.7	73.8	78.7	77.1	83.7
125	81.3	82.7	76.1	80.5	76.2	80.5	76.1	82.7	81.3	82.7	76.1	80.5	76.2	80.5	76.1	82.7
130	80.4	84.3	76.4	83.0	78.4	83.0	76.4	84.3	80.4	84.3	76.4	83.0	78.4	83.0	76.4	84.3
135	81.6	86.8	78.7	86.5	80.4	86.5	78.7	86.8	81.6	86.8	78.7	86.5	80.4	86.5	78.7	86.8
140	82.5	89.9	91.4	90.6	82.8	90.6	91.4	89.9	82.5	89.9	91.4	90.6	82.8	90.6	91.4	89.9
145	87.1	98.9	115.2	97.5	87.1	97.5	115.2	98.9	87.1	98.9	115.2	97.5	87.1	97.5	115.2	98.9
150	97.1	114.4	128.3	107.1	91.0	107.1	128.3	114.4	97.1	114.4	128.3	107.1	91.0	107.1	128.3	114.4
155	102.9	121.5	128.9	107.9	87.9	107.9	128.9	121.5	102.9	121.5	128.9	107.9	87.9	107.9	128.9	121.5
160	89.1	108.2	119.7	96.1	70.7	96.1	119.7	108.2	89.1	108.2	119.7	96.1	70.7	96.1	119.7	108.2
165	72.6	90.0	92.8	79.5	50.3	79.5	92.8	90.0	72.6	90.0	92.8	79.5	50.3	79.5	92.8	90.0
170	49.9	57.0	59.9	51.2	33.4	51.2	59.9	57.0	49.9	57.0	59.9	51.2	33.4	51.2	59.9	57.0
175	30.7	30.1	31.1	28.7	27.1	28.7	31.1	30.1	30.7	30.1	31.1	28.7	27.1	28.7	31.1	30.1
180	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3

Zonal Lumen Tabulation (5 degree zones)

Zone	Lumens	Zone	Lumens	Zone	Lumens	Zone	Lumens
0-5	1.7	45-50	35.3	90-95	43.2	135-140	31.7
5-10	5.6	50-55	37.5	95-100	42.8	140-145	31.3
10-15	9.6	55-60	39.2	100-105	42.2	145-150	31.0
15-20	13.6	60-65	40.3	105-110	41.1	150-155	28.7
20-25	17.5	65-70	41.0	110-115	39.4	155-160	22.7
25-30	21.4	70-75	42.6	115-120	38.1	160-165	15.1
30-35	25.5	75-80	43.7	120-125	36.7	165-170	8.1
35-40	29.3	80-85	43.8	125-130	34.8	170-175	2.9
40-45	32.6	85-90	43.5	130-135	33.0	175-180	0.6



Coefficients of Utilization - Zonal Cavity Method												
Effective Floor Cavity Reflectance 20%												
Ceiling Cavity Reflectance	90				80				70			
Wall Reflectance	70	50	30	10	70	50	30	10	70	50	30	10
Room Cavity Ratio (RCR)												
0	0.674	0.674	0.674	0.674	0.623	0.623	0.623	0.623	0.575	0.575	0.575	0.575
1	0.594	0.554	0.518	0.486	0.545	0.51	0.478	0.45	0.499	0.468	0.44	0.415
2	0.533	0.471	0.42	0.377	0.488	0.433	0.388	0.35	0.445	0.397	0.357	0.323
3	0.482	0.406	0.348	0.303	0.44	0.373	0.322	0.281	0.4	0.342	0.297	0.26
4	0.438	0.354	0.295	0.249	0.399	0.326	0.273	0.232	0.363	0.299	0.251	0.214
5	0.399	0.312	0.252	0.209	0.364	0.288	0.234	0.194	0.331	0.264	0.216	0.18
6	0.366	0.278	0.219	0.178	0.334	0.256	0.203	0.165	0.304	0.235	0.188	0.153
7	0.337	0.249	0.192	0.153	0.308	0.229	0.178	0.143	0.28	0.211	0.165	0.132
8	0.312	0.224	0.17	0.133	0.285	0.207	0.158	0.124	0.26	0.19	0.146	0.115
9	0.289	0.203	0.152	0.117	0.265	0.188	0.141	0.109	0.241	0.173	0.131	0.102
10	0.269	0.185	0.136	0.104	0.247	0.172	0.127	0.097	0.225	0.158	0.117	0.09

Ceiling Cavity Reflectance	50				30			10			0
Wall Reflectance	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)											
0	0.485	0.485	0.485	0.485	0.402	0.402	0.402	0.327	0.327	0.327	0.291
1	0.413	0.39	0.369	0.349	0.318	0.302	0.287	0.251	0.24	0.229	0.197
2	0.365	0.329	0.298	0.272	0.266	0.243	0.223	0.208	0.191	0.176	0.147
3	0.327	0.283	0.248	0.219	0.229	0.202	0.179	0.178	0.158	0.14	0.115
4	0.296	0.247	0.21	0.18	0.2	0.171	0.147	0.155	0.133	0.115	0.093
5	0.27	0.219	0.181	0.152	0.177	0.147	0.124	0.137	0.115	0.097	0.077
6	0.248	0.195	0.157	0.129	0.158	0.128	0.106	0.123	0.101	0.083	0.065
7	0.229	0.176	0.139	0.112	0.143	0.113	0.092	0.112	0.089	0.072	0.056
8	0.213	0.159	0.123	0.098	0.13	0.101	0.08	0.102	0.08	0.063	0.048
9	0.199	0.145	0.11	0.086	0.119	0.091	0.071	0.094	0.072	0.056	0.042
10	0.186	0.133	0.1	0.076	0.109	0.082	0.063	0.086	0.065	0.05	0.038

Average Luminance Table (cd/m<sup>2</sup>)

	0	45	90
0	806	806	806
45	418	344	397
55	388	304	362
65	364	283	334
75	366	281	335
85	372	286	337

THIS TEST WAS CONDUCTED USING RELATIVE PHOTOMETRY TECHNIQUES ACCORDING TO STANDARD IESNA PROCEDURES. THE USER MUST THEREFORE USE CAUTION IN THE FOLLOWING SITUATIONS: 1) THIS TEST WAS PERFORMED USING A SPECIFIC BALLAST/LAMP COMBINATION. EXTRAPOLATION OF THESE DATA FOR OTHER BALLAST/LAMP COMBINATIONS MAY PRODUCE ERRONEOUS RESULTS. 2) ACCORDING TO IESNA PROCEDURES, THE BALLAST(S) AND LAMP(S) ARE PRESUMED TO PRODUCE 100% OF RATED OUTPUT. AN APPROPRIATE BALLAST FACTOR MUST BE APPLIED TO THE LUMEN OUTPUT RATINGS AND LUMINOUS INTENSITY VALUES GIVEN. 3) THIS TEST WAS CONDUCTED IN A CONTROLLED LABORATORY ENVIRONMENT WHERE THE AMBIENT TEMPERATURE WAS HELD AT 25 °C ±1°C. FIELD PERFORMANCE MAY DIFFER PARTICULARLY IN REGARDS TO CHANGE IN LUMINOUS OUTPUT AS A RESULT OF DIFFERENCE IN AMBIENT TEMPERATURE AND METHOD OF MOUNTING THE LUMINAIRE.

