



# 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: 17558 DATE: 12-17-2009  
 PREPARED FOR: ADAM METAL PRODUCTS  
 CATALOG NUMBER: 6 LAMP 32W T8 HIGH BAY CONCEPT 3  
 LUMINAIRE: FORMED WHITE ENAMEL STEEL HOUSING, FORMED SPECULAR ALUMINUM REFLECTORS, NO ENCLOSURE.  
 LAMP: SIX 32 WATT T8 LINEAR FLUORESCENT LAMPS RATED AT 2850 LUMENS EACH.  
 LAMP CATALOG NUMBER: PHILIPS F32T8/TL835/ALTO  
 BALLAST: TWO ROBERTSON ISL332T8MVW  
 MOUNTING: PENDANT  
 ELECTRICAL VALUES: 120.0VAC, 1.4838A, 177.80W

Candela Distribution

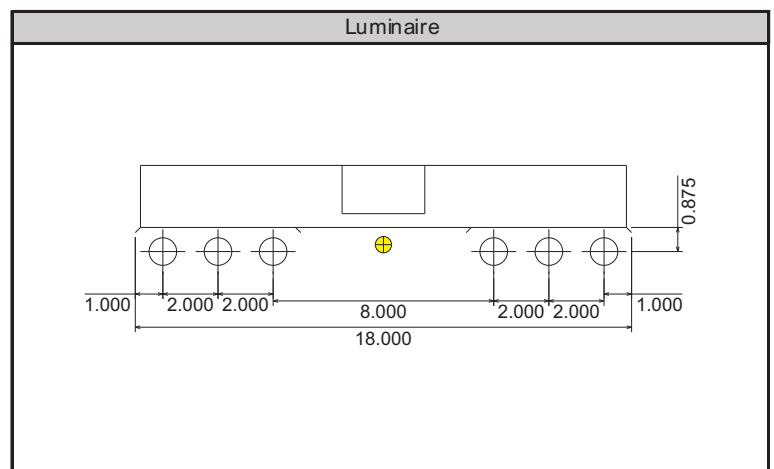
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	3984	3984	3984	3984	3984	3984	3984	3984	3984	3984	3984	3984	3984	3984	3984	3984	
5	3977	3999	4071	4124	4141	4124	4071	3999	3977	3999	4071	4124	4141	4124	4071	3999	391.1
15	3833	4036	4242	4259	4235	4259	4242	4036	3833	4036	4242	4259	4235	4259	4242	4036	1164.0
25	3551	3908	3815	3744	3823	3744	3815	3908	3551	3908	3815	3744	3823	3744	3815	3908	1755.0
35	3141	3462	3453	3783	3872	3783	3453	3462	3141	3462	3453	3783	3872	3783	3453	3462	2220.6
45	2624	2754	3249	3530	3617	3530	3249	2754	2624	2754	3249	3530	3617	3530	3249	2754	2443.3
55	2022	2303	2813	3065	3147	3065	2813	2303	2022	2303	2813	3065	3147	3065	2813	2303	2404.7
65	1369	1793	2215	2481	2573	2481	2215	1793	1369	1793	2215	2481	2573	2481	2215	1793	2089.6
75	705	1174	1539	1715	1778	1715	1539	1174	705	1174	1539	1715	1778	1715	1539	1174	1496.5
85	126	488	738	861	901	861	738	488	126	488	738	861	901	861	738	488	704.4
90	0	157	273	353	385	353	273	157	0	157	273	353	385	353	273	157	
95	0	118	351	465	513	465	351	118	0	118	351	465	513	465	351	118	314.7
105	0	40	157	311	401	311	157	40	0	40	157	311	401	311	157	40	198.5
115	0	2	99	179	211	179	99	2	0	2	99	179	211	179	99	2	97.6
125	0	4	46	124	141	124	46	4	0	4	46	124	141	124	46	4	55.2
135	0	0	13	37	60	37	13	0	0	0	13	37	60	37	13	0	17.7
145	0	0	6	20	19	20	6	0	0	0	6	20	19	20	6	0	5.4
155	0	0	0	3	5	3	0	0	0	0	0	3	5	3	0	0	1.0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	3310.1	19.4%	21.6%
0-40	5530.7	32.3%	36.0%
0-60	10378.7	60.7%	67.6%
0-90	14669.2	85.8%	95.5%
90-180	690.1	4.0%	4.5%
0-180	15359.3	89.8%	100.0%

Total luminaire efficiency: 89.8%

CIE Type: Direct  
 Spacing Criterion: 0 deg: 1.25 90 deg: 1.48  
 180 deg: 1.25 270 deg: 1.48



Approved By: \_\_\_\_\_

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



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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	3984	3984	3984	3984	3984	3984	3984	3984	3984	3984	3984	3984	3984	3984	3984	3984
5	3977	3999	4071	4124	4141	4124	4071	3999	3977	3999	4071	4124	4141	4124	4071	3999
10	3923	4032	4193	4290	4317	4290	4193	4032	3923	4032	4193	4290	4317	4290	4193	4032
15	3833	4036	4242	4259	4235	4259	4242	4036	3833	4036	4242	4259	4235	4259	4242	4036
20	3709	3999	4113	3972	3921	3972	4113	3999	3709	3999	4113	3972	3921	3972	4113	3999
25	3551	3908	3815	3744	3823	3744	3815	3908	3551	3908	3815	3744	3823	3744	3815	3908
30	3361	3733	3527	3790	3894	3790	3527	3733	3361	3733	3527	3790	3894	3790	3527	3733
35	3141	3462	3453	3783	3872	3783	3453	3462	3141	3462	3453	3783	3872	3783	3453	3462
40	2894	3115	3389	3675	3773	3675	3389	3115	2894	3115	3389	3675	3773	3675	3389	3115
45	2624	2754	3249	3530	3617	3530	3249	2754	2624	2754	3249	3530	3617	3530	3249	2754
50	2332	2493	3053	3325	3410	3325	3053	2493	2332	2493	3053	3325	3410	3325	3053	2493
55	2022	2303	2813	3065	3147	3065	2813	2303	2022	2303	2813	3065	3147	3065	2813	2303
60	1698	2072	2534	2766	2855	2766	2534	2072	1698	2072	2534	2766	2855	2766	2534	2072
65	1369	1793	2215	2481	2573	2481	2215	1793	1369	1793	2215	2481	2573	2481	2215	1793
70	1032	1494	1901	2135	2198	2135	1901	1494	1032	1494	1901	2135	2198	2135	1901	1494
75	705	1174	1539	1715	1778	1715	1539	1174	705	1174	1539	1715	1778	1715	1539	1174
80	395	867	1125	1311	1379	1311	1125	867	395	867	1125	1311	1379	1311	1125	867
85	126	488	738	861	901	861	738	488	126	488	738	861	901	861	738	488
90	0	157	273	353	385	353	273	157	0	157	273	353	385	353	273	157
95	0	118	351	465	513	465	351	118	0	118	351	465	513	465	351	118
100	0	63	266	520	631	520	266	63	0	63	266	520	631	520	266	63
105	0	40	157	311	401	311	157	40	0	40	157	311	401	311	157	40
110	0	23	126	217	252	217	126	23	0	23	126	217	252	217	126	23
115	0	2	99	179	211	179	99	2	0	2	99	179	211	179	99	2
120	0	4	85	143	171	143	85	4	0	4	85	143	171	143	85	4
125	0	4	46	124	141	124	46	4	0	4	46	124	141	124	46	4
130	0	0	17	89	120	89	17	0	0	0	17	89	120	89	17	0
135	0	0	13	37	60	37	13	0	0	0	13	37	60	37	13	0
140	0	0	16	16	24	16	16	0	0	0	16	16	24	16	16	0
145	0	0	6	20	19	20	6	0	0	0	6	20	19	20	6	0
150	0	0	2	12	18	12	2	0	0	0	2	12	18	12	2	0
155	0	0	0	3	5	3	0	0	0	0	0	3	5	3	0	0
160	0	0	0	1	2	1	0	0	0	0	0	1	2	1	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Zonal Lumen Tabulation (5 degree zones)

Zone	Lumens	Zone	Lumens	Zone	Lumens	Zone	Lumens
0-5	96.3	45-50	1231.3	90-95	145.3	135-140	5.5
5-10	294.8	50-55	1224.1	95-100	169.4	140-145	3.1
10-15	494.0	55-60	1180.5	100-105	123.5	145-150	2.3
15-20	669.9	60-65	1100.7	105-110	75.0	150-155	0.8
20-25	811.9	65-70	988.9	110-115	55.1	155-160	0.2
25-30	943.1	70-75	838.9	115-120	42.5	160-165	0.0
30-35	1063.5	75-80	657.6	120-125	32.6	165-170	0.0
35-40	1157.1	80-85	465.2	125-130	22.5	170-175	0.0
40-45	1212.0	85-90	239.2	130-135	12.1	175-180	0.0



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	1.09	1.09	1.09	1.09	1.06	1.06	1.06	1.06	1.03	1.03	1.03	1.03
1	0.982	0.926	0.877	0.833	0.951	0.901	0.856	0.815	0.921	0.876	0.835	0.798
2	0.886	0.795	0.72	0.658	0.856	0.773	0.704	0.647	0.827	0.752	0.689	0.636
3	0.803	0.69	0.603	0.535	0.775	0.671	0.591	0.527	0.748	0.653	0.579	0.52
4	0.732	0.605	0.514	0.445	0.706	0.59	0.505	0.44	0.681	0.575	0.496	0.434
5	0.67	0.537	0.445	0.378	0.646	0.523	0.438	0.374	0.624	0.511	0.43	0.37
6	0.617	0.48	0.39	0.327	0.595	0.469	0.384	0.323	0.575	0.458	0.378	0.32
7	0.57	0.433	0.346	0.286	0.551	0.423	0.341	0.283	0.532	0.414	0.336	0.281
8	0.529	0.393	0.31	0.253	0.512	0.385	0.305	0.251	0.495	0.377	0.301	0.249
9	0.493	0.36	0.279	0.226	0.477	0.352	0.276	0.224	0.462	0.345	0.272	0.222
10	0.461	0.331	0.254	0.204	0.447	0.324	0.251	0.202	0.433	0.318	0.248	0.201

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	0.976	0.976	0.976	0.976	0.925	0.925	0.925	0.879	0.879	0.879	0.858
1	0.866	0.829	0.796	0.765	0.787	0.76	0.734	0.748	0.726	0.705	0.683
2	0.775	0.713	0.66	0.614	0.677	0.633	0.594	0.643	0.607	0.575	0.552
3	0.698	0.62	0.557	0.505	0.589	0.536	0.491	0.561	0.516	0.477	0.454
4	0.635	0.546	0.478	0.424	0.52	0.461	0.413	0.495	0.445	0.403	0.381
5	0.582	0.486	0.416	0.362	0.464	0.402	0.354	0.443	0.389	0.347	0.325
6	0.537	0.437	0.367	0.314	0.418	0.355	0.308	0.4	0.345	0.302	0.281
7	0.498	0.396	0.326	0.276	0.379	0.317	0.271	0.364	0.308	0.266	0.247
8	0.464	0.361	0.293	0.245	0.347	0.285	0.241	0.333	0.278	0.237	0.218
9	0.434	0.332	0.265	0.219	0.319	0.259	0.216	0.307	0.252	0.212	0.195
10	0.408	0.306	0.242	0.198	0.295	0.236	0.195	0.284	0.231	0.192	0.176

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

	0	45	90
0	7603	7603	7603
45	6952	8377	9318
55	6551	8766	9796
65	5936	9074	10526
75	4851	9623	11096
85	2260	10429	12687

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.

