



LUMINAIRE TESTING LABORATORY, INC.

SUSTAINING
MEMBER
of the
IESNA

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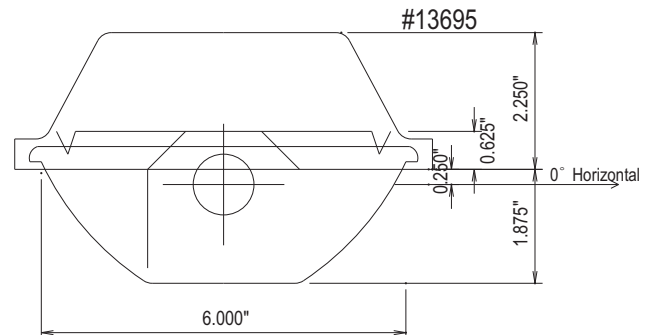
LTL NUMBER: 13695 DATE: 08-06-2008
 PREPARED FOR: SIMKAR LIGHTING
 CATALOG NUMBER: PGA4RASR132T8EU1
 LUMINAIRE: MOLDED ACRYLIC HOUSING, FORMED SPECULAR ALUMINUM REFLECTOR,
 CLEAR LINEAR PRISMATIC POLYCARBONATE LENS.
 LAMP: ONE 32 WATT T8 LINEAR FLUORESCENT LAMP RATED AT 2850 LUMENS.
 LAMP CATALOG NUMBER: PHILIPS F32T8/TL835/ALTO
 BALLAST: ONE ADVANCE ICN-1P32-SC
 MOUNTING: SURFACE

LUMEN TO CANDELA RATIO USED = 9.18
 TOTAL INPUT WATTS = 29.6 AT 120.0 VOLTS
 THE 0 DEGREE PLANE IS PERPENDICULAR TO THE LAMPS.

CANDELA DISTRIBUTION										FLUX
	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0	
0	738	738	738	738	738	738	738	738	738	
5	762	755	757	753	730	719	717	713	712	70
15	732	728	735	730	698	667	649	627	618	194
25	664	653	667	678	634	590	562	532	511	282
35	696	657	582	579	541	485	431	372	351	327
45	687	648	541	456	435	375	293	227	195	330
55	546	523	492	355	318	244	157	112	101	282
65	401	376	344	257	184	129	73	55	49	205
75	305	275	211	138	72	45	36	35	33	131
85	205	180	138	58	14	17	18	14	13	75
90	174	148	94	38	5	9	8	10	9	
95	163	139	86	25	6	7	8	9	9	49
105	95	80	54	11	5	4	4	5	7	29
115	71	55	21	2	2	2	2	3	4	15
125	29	17	1	0	0	0	0	0	2	4
135	5	1	0	0	0	0	0	0	2	0
145	0	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0

ZONAL ZONE	LUMEN SUMMARY LUMENS	%LAMP	%FIXT
0- 30	547	19.2	27.4
0- 40	874	30.7	43.8
0- 60	1486	52.2	74.5
0- 90	1897	66.6	95.1
90-120	94	3.3	4.7
90-130	98	3.4	4.9
90-150	98	3.5	4.9
90-180	98	3.5	4.9
0-180	1995	70.0	100.0

TOTAL LUMINAIRE EFFICIENCY: 70.0%
 CIE TYPE: DIRECT
 PLANE: 0-DEG 90-DEG 180-DEG
 SPACING CRITERIA: 1.5 1.2 1.0



Approved By: MG



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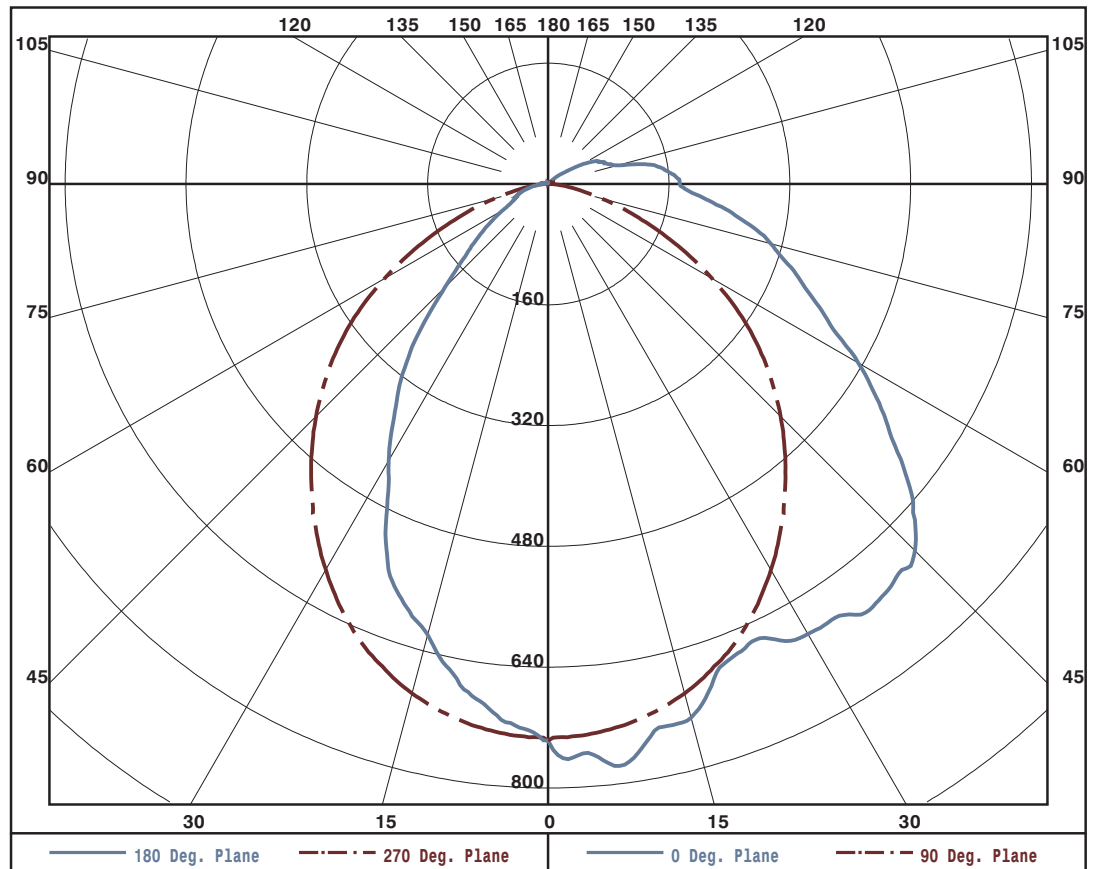
ZONAL LUMEN SUMMARY

0- 5	18.
5- 10	52.
10- 15	84.
15- 20	111.
20- 25	133.
25- 30	149.
30- 35	160.
35- 40	167.
40- 45	168.
45- 50	162.
50- 55	150.
55- 60	133.
60- 65	112.
65- 70	92.
70- 75	73.
75- 80	57.
80- 85	44.
85- 90	31.
90- 95	26.
95-100	23.
100-105	17.
105-110	12.
110-115	9.
115-120	6.
120-125	3.
125-130	1.
130-135	0.
135-140	0.
140-145	0.
145-150	0.
150-155	0.
155-160	0.
160-165	0.
165-170	0.
170-175	0.
175-180	0.

PLANE:	0-DEG	90-DEG
LUMINOUS LENGTH:	6.000	50.500
HEIGHT OF SIDE:	1.875	1.875

LUMINANCE IN CANDELA PER SQUARE METER

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
0	3775.	3775.	3775.
45	4781.	4145.	3146.
55	4166.	4202.	2802.
65	3503.	3438.	2158.
75	3233.	2638.	1323.
85	2873.	2403.	640.





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CANDELA DISTRIBUTION

Table with 10 columns representing candela values at angles 0.0, 22.5, 45.0, 67.5, 90.0, 112.5, 135.0, 157.5, and 180.0. Rows represent vertical angles from 0 to 180 degrees.



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DATE: 08-06-2008

PREPARED FOR: SIMKAR LIGHTING

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

Table with 19 columns (RC, RW, and 17 numerical values) and 11 rows (0-10). Values represent utilization coefficients for different room cavity ratios and reflectance levels.

NOTE: THE ZONAL CAVITY CALCULATION TECHNIQUE IS ACCURATE WHEN LUMINAIRES WITH SYMMETRIC CANDELA DISTRIBUTIONS ARE EMPLOYED AND WHEN THE LUMINAIRES ARE LOCATED SYMMETRICALLY THROUGHOUT THE ROOM. THIS UNIT HAS SPECIAL CHARACTERISTICS AND THEREFORE THESE COEFFICIENTS SHOULD BE USED WITH CAUTION.

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.



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LTL NUMBER: 17606 DATE: 12-15-2009
 PREPARED FOR: SIMKAR LIGHTING
 CATALOG NUMBER: PGW24RAM4232T8EHU1
 LUMINAIRE: MOLDED PLASTIC HOUSING, FORMED SPECULAR ALUMINUM REFLECTOR,
 CLEAR LINEAR PRISMATIC PLASTIC LENS.
 LAMP: TWO 32 WATT T8 LINEAR FLUORESCENT LAMPS RATED AT 2850 LUMENS
 EACH.
 LAMP CATALOG NUMBER: PHILIPS F32T8/TL850PLUS/ALTO
 BALLAST: ONE GE "ULTRAMAX" GE232MAX-H/ULTRA
 MOUNTING: SURFACE/PENDANT
 ELECTRICAL VALUES: 120.0VAC, 0.5666A, 67.89W

Candela Distribution

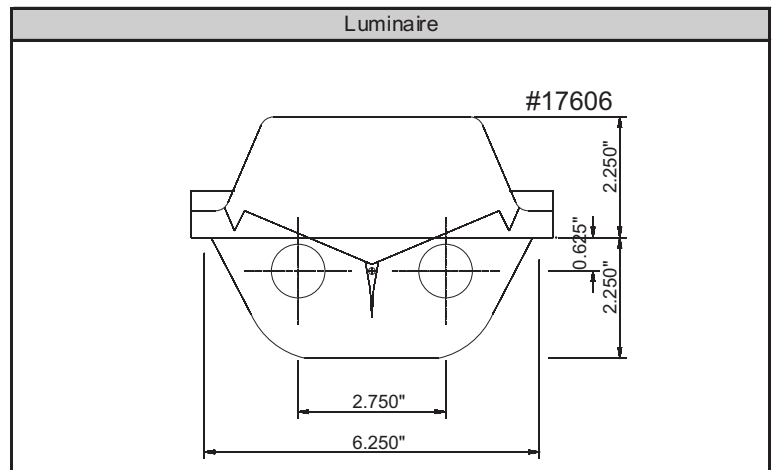
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	Flux
0	1052	1052	1052	1052	1052	1052	1052	1052	1052	1052	1052	1052	1052	1052	1052	1052	
5	1042	1047	1049	1045	1048	1045	1049	1047	1042	1047	1049	1045	1048	1045	1049	1047	99.3
15	994	1002	998	986	978	986	998	1002	994	1002	998	986	978	986	998	1002	279.7
25	901	908	893	890	895	890	893	908	901	908	893	890	895	890	893	908	414.4
35	774	769	791	856	897	856	791	769	774	769	791	856	897	856	791	769	510.3
45	634	621	733	807	835	807	733	621	634	621	733	807	835	807	733	621	558.0
55	468	490	606	685	716	685	606	490	468	490	606	685	716	685	606	490	531.1
65	285	350	469	540	566	540	469	350	285	350	469	540	566	540	469	350	441.2
75	122	204	315	388	414	388	315	204	122	204	315	388	414	388	315	204	312.9
85	21	100	210	309	347	309	210	100	21	100	210	309	347	309	210	100	223.4
90	6	74	196	301	339	301	196	74	6	74	196	301	339	301	196	74	
95	7	59	195	295	330	295	195	59	7	59	195	295	330	295	195	59	191.7
105	5	22	118	206	239	206	118	22	5	22	118	206	239	206	118	22	124.2
115	3	2	42	103	128	103	42	2	3	2	42	103	128	103	42	2	54.2
125	1	1	4	28	39	28	4	1	1	1	4	28	39	28	4	1	13.3
135	1	1	1	1	4	1	1	1	1	1	1	1	4	1	1	1	1.7
145	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7
155	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.5
165	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.3
175	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.1
180	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	793.4	13.9%	21.1%
0-40	1303.7	22.9%	34.7%
0-60	2392.7	42.0%	63.7%
0-90	3370.2	59.1%	89.7%
90-180	386.7	6.8%	10.3%
0-180	3756.9	65.9%	100.0%

Total luminaire efficiency: 65.9%

CIE Type: Semi-Direct
 Spacing Criterion: 0 deg: 1.19 90 deg: 1.29
 180 deg: 1.19 270 deg: 1.29



Approved By: MG

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	1052	1052	1052	1052	1052	1052	1052	1052	1052	1052	1052	1052	1052	1052	1052	1052
5	1042	1047	1049	1045	1048	1045	1049	1047	1042	1047	1049	1045	1048	1045	1049	1047
10	1024	1029	1032	1024	1025	1024	1032	1029	1024	1029	1032	1024	1025	1024	1032	1029
15	994	1002	998	986	978	986	998	1002	994	1002	998	986	978	986	998	1002
20	953	960	947	931	935	931	947	960	953	960	947	931	935	931	947	960
25	901	908	893	890	895	890	893	908	901	908	893	890	895	890	893	908
30	839	849	842	863	883	863	842	849	839	849	842	863	883	863	842	849
35	774	769	791	856	897	856	791	769	774	769	791	856	897	856	791	769
40	706	696	753	855	880	855	753	696	706	696	753	855	880	855	753	696
45	634	621	733	807	835	807	733	621	634	621	733	807	835	807	733	621
50	555	551	681	750	778	750	681	551	555	551	681	750	778	750	681	551
55	468	490	606	685	716	685	606	490	468	490	606	685	716	685	606	490
60	375	427	539	617	644	617	539	427	375	427	539	617	644	617	539	427
65	285	350	469	540	566	540	469	350	285	350	469	540	566	540	469	350
70	199	273	389	461	489	461	389	273	199	273	389	461	489	461	389	273
75	122	204	315	388	414	388	315	204	122	204	315	388	414	388	315	204
80	60	146	249	338	375	338	249	146	60	146	249	338	375	338	249	146
85	21	100	210	309	347	309	210	100	21	100	210	309	347	309	210	100
90	6	74	196	301	339	301	196	74	6	74	196	301	339	301	196	74
95	7	59	195	295	330	295	195	59	7	59	195	295	330	295	195	59
100	7	40	162	258	293	258	162	40	7	40	162	258	293	258	162	40
105	5	22	118	206	239	206	118	22	5	22	118	206	239	206	118	22
110	4	7	78	152	180	152	78	7	4	7	78	152	180	152	78	7
115	3	2	42	103	128	103	42	2	3	2	42	103	128	103	42	2
120	2	2	18	58	80	58	18	2	2	2	18	58	80	58	18	2
125	1	1	4	28	39	28	4	1	1	1	4	28	39	28	4	1
130	1	1	1	10	17	10	1	1	1	1	1	10	17	10	1	1
135	1	1	1	1	4	1	1	1	1	1	1	1	4	1	1	1
140	1	1	1	2	2	2	1	1	1	1	1	2	2	2	1	1
145	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
150	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
155	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
160	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
165	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
170	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
175	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
180	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Zonal Lumen Tabulation (5 degree zones)

Zone	Lumens	Zone	Lumens	Zone	Lumens	Zone	Lumens
0-5	25.1	45-50	280.4	90-95	100.8	135-140	0.4
5-10	74.2	50-55	272.7	95-100	90.9	140-145	0.4
10-15	119.9	55-60	258.4	100-105	72.3	145-150	0.3
15-20	159.7	60-65	235.7	105-110	51.9	150-155	0.3
20-25	193.1	65-70	205.5	110-115	34.2	155-160	0.2
25-30	221.3	70-75	172.1	115-120	20.0	160-165	0.2
30-35	244.9	75-80	140.9	120-125	9.6	165-170	0.1
35-40	265.3	80-85	118.7	125-130	3.7	170-175	0.1
40-45	277.6	85-90	104.7	130-135	1.3	175-180	0.0



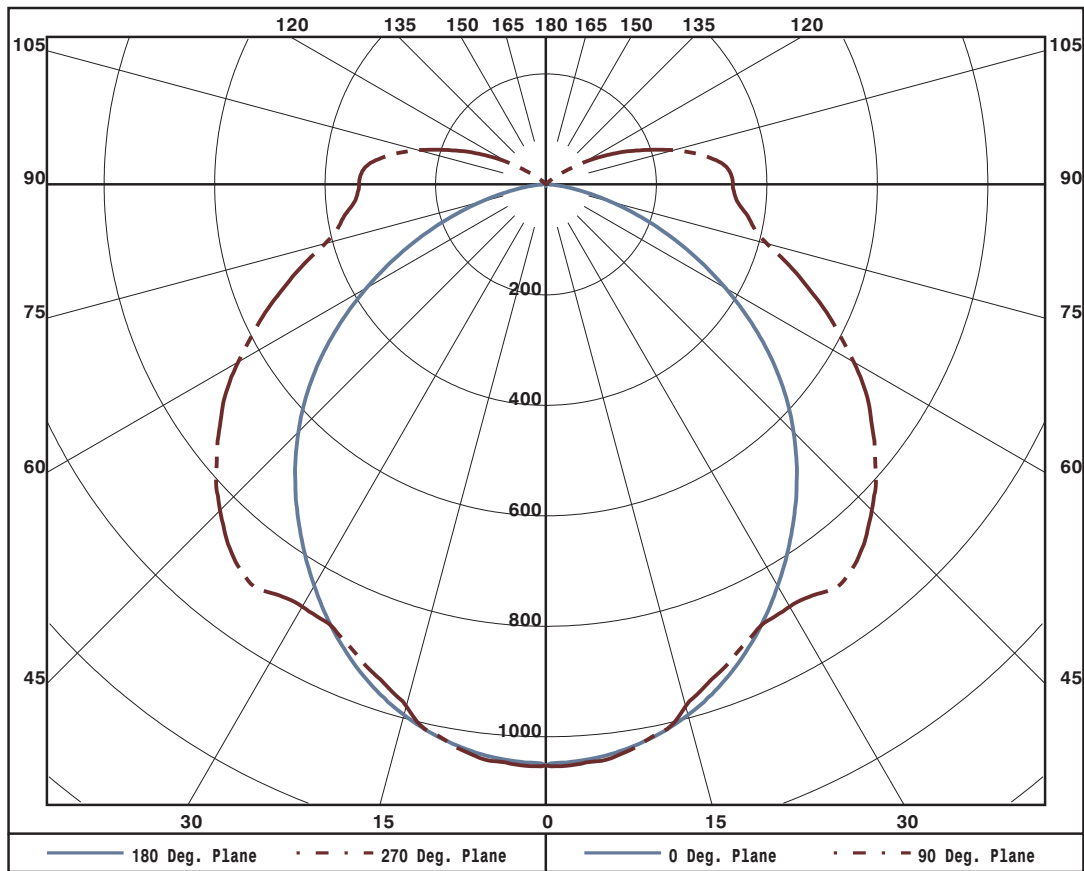
Coefficients of Utilization - Zonal Cavity Method												
Effective Floor Cavity Reflectance 20%												
Ceiling Cavity Reflectance	90				80				70			
Wall Reflectance	70	50	30	10	70	50	30	10	70	50	30	10
Room Cavity Ratio (RCR)												
0	0.796	0.796	0.796	0.796	0.768	0.768	0.768	0.768	0.743	0.743	0.743	0.743
1	0.715	0.673	0.637	0.604	0.688	0.651	0.617	0.588	0.662	0.629	0.599	0.571
2	0.646	0.58	0.525	0.48	0.621	0.56	0.511	0.469	0.596	0.542	0.496	0.458
3	0.587	0.505	0.442	0.393	0.563	0.488	0.431	0.385	0.54	0.473	0.419	0.377
4	0.536	0.444	0.378	0.329	0.514	0.43	0.369	0.323	0.493	0.417	0.36	0.316
5	0.492	0.395	0.328	0.28	0.471	0.383	0.321	0.275	0.452	0.371	0.314	0.271
6	0.453	0.354	0.289	0.243	0.434	0.343	0.282	0.239	0.417	0.333	0.276	0.235
7	0.419	0.319	0.256	0.213	0.402	0.31	0.251	0.21	0.386	0.302	0.246	0.206
8	0.389	0.29	0.23	0.189	0.374	0.283	0.225	0.186	0.359	0.275	0.221	0.183
9	0.363	0.266	0.207	0.169	0.349	0.259	0.204	0.166	0.336	0.252	0.2	0.164
10	0.339	0.244	0.189	0.152	0.327	0.238	0.185	0.15	0.315	0.232	0.182	0.148

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	0.695	0.695	0.695	0.695	0.651	0.651	0.651	0.61	0.61	0.61	0.591
1	0.615	0.588	0.563	0.541	0.55	0.53	0.512	0.515	0.5	0.485	0.466
2	0.551	0.507	0.469	0.437	0.475	0.444	0.417	0.445	0.42	0.397	0.379
3	0.498	0.443	0.398	0.361	0.415	0.378	0.346	0.39	0.359	0.332	0.314
4	0.454	0.391	0.343	0.305	0.368	0.327	0.293	0.346	0.311	0.282	0.265
5	0.417	0.349	0.3	0.261	0.329	0.286	0.252	0.31	0.273	0.243	0.227
6	0.385	0.315	0.265	0.227	0.297	0.253	0.22	0.28	0.242	0.213	0.197
7	0.357	0.285	0.236	0.2	0.27	0.226	0.194	0.255	0.217	0.188	0.174
8	0.333	0.261	0.212	0.178	0.247	0.204	0.173	0.234	0.196	0.168	0.154
9	0.312	0.239	0.193	0.16	0.228	0.186	0.155	0.216	0.179	0.151	0.138
10	0.293	0.221	0.176	0.145	0.211	0.17	0.141	0.201	0.164	0.137	0.125

Average Luminance Table (cd/m²)

	0	45	90
0	5090	5090	5090
45	4339	5293	5405
55	3895	4817	5017
65	3150	4285	4462
75	2102	3514	3866
85	897	3129	4142

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.





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LTL NUMBER: 17607

DATE: 12-15-2009

PREPARED FOR: SIMKAR LIGHTING

CATALOG NUMBER: PGS24RPM4232T8EU1

LUMINAIRE: MOLDED PLASTIC HOUSING, FORMED SPECULAR ALUMINUM REFLECTOR,
CLEAR LINEAR PRISMATIC PLASTIC LENS.

LAMP: TWO 32 WATT T8 LINEAR FLUORESCENT LAMPS RATED AT 2850 LUMENS
EACH.

LAMP CATALOG NUMBER: PHILIPS F32T8/TL850PLUS/ALTO

BALLAST: ONE ADVANCE "CENTIUM" ICN-2P32-N

MOUNTING: SURFACE/PENDANT

ELECTRICAL VALUES: 120.0VAC, 0.4464A, 53.39W

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	810	810	810	810	810	810	810	810	810	810	810	810	810	810	810	810	
5	808	824	841	840	843	840	841	824	808	824	841	840	843	840	841	824	80.2
15	780	820	916	967	995	967	916	820	780	820	916	967	995	967	916	820	256.1
25	720	830	1004	1121	1154	1121	1004	830	720	830	1004	1121	1154	1121	1004	830	448.2
35	637	791	1024	1205	1269	1205	1024	791	637	791	1024	1205	1269	1205	1024	791	622.2
45	538	728	1034	1143	1143	1143	1034	728	538	728	1034	1143	1143	1143	1034	728	718.9
55	406	635	836	833	832	833	836	635	406	635	836	833	832	833	836	635	652.5
65	251	488	538	565	603	565	538	488	251	488	538	565	603	565	538	488	504.4
75	104	238	375	500	545	500	375	238	104	238	375	500	545	500	375	238	380.4
85	19	125	265	371	413	371	265	125	19	125	265	371	413	371	265	125	266.0
90	7	84	199	314	356	314	199	84	7	84	199	314	356	314	199	84	
95	8	56	173	278	313	278	173	56	8	56	173	278	313	278	173	56	181.3
105	7	22	96	167	195	167	96	22	7	22	96	167	195	167	96	22	103.2
115	3	3	38	78	93	78	38	3	3	3	38	78	93	78	38	3	42.5
125	1	1	3	26	38	26	3	1	1	1	3	26	38	26	3	1	12.3
135	1	1	1	2	3	2	1	1	1	1	1	2	3	2	1	1	1.5
145	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1	1	0.8
155	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1	1	0.6
165	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.3
175	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.1
180	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

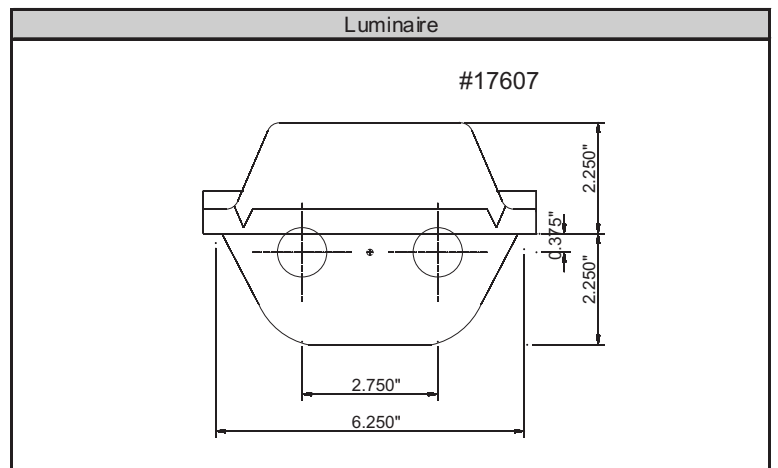
Zonal Lumen Summary

Zone	Lumens	% of Lamp	% of Luminaire
0-30	784.6	13.8%	18.4%
0-40	1406.8	24.7%	32.9%
0-60	2778.1	48.7%	65.0%
0-90	3928.9	68.9%	92.0%
90-180	342.4	6.0%	8.0%
0-180	4271.4	74.9%	100.0%

Total luminaire efficiency: 74.9%

CIE Type: Direct

Spacing Criterion: 0 deg: 1.25 90 deg: 2.00
180 deg: 1.25 270 deg: 2.00



Approved By: MG

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



LUMINAIRE TESTING LABORATORY, INC.

SUSTAINING
MEMBER
of the
IESNA

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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	810	810	810	810	810	810	810	810	810	810	810	810	810	810	810	810
5	808	824	841	840	843	840	841	824	808	824	841	840	843	840	841	824
10	798	828	859	903	923	903	859	828	798	828	859	903	923	903	859	828
15	780	820	916	967	995	967	916	820	780	820	916	967	995	967	916	820
20	755	829	950	1057	1095	1057	950	829	755	829	950	1057	1095	1057	950	829
25	720	830	1004	1121	1154	1121	1004	830	720	830	1004	1121	1154	1121	1004	830
30	680	804	1030	1144	1206	1144	1030	804	680	804	1030	1144	1206	1144	1030	804
35	637	791	1024	1205	1269	1205	1024	791	637	791	1024	1205	1269	1205	1024	791
40	591	772	1043	1211	1261	1211	1043	772	591	772	1043	1211	1261	1211	1043	772
45	538	728	1034	1143	1143	1143	1034	728	538	728	1034	1143	1143	1143	1034	728
50	475	682	987	985	979	985	987	682	475	682	987	985	979	985	987	682
55	406	635	836	833	832	833	836	635	406	635	836	833	832	833	836	635
60	331	586	680	676	675	676	680	586	331	586	680	676	675	676	680	586
65	251	488	538	565	603	565	538	488	251	488	538	565	603	565	538	488
70	173	355	414	548	603	548	414	355	173	355	414	548	603	548	414	355
75	104	238	375	500	545	500	375	238	104	238	375	500	545	500	375	238
80	50	161	333	434	479	434	333	161	50	161	333	434	479	434	333	161
85	19	125	265	371	413	371	265	125	19	125	265	371	413	371	265	125
90	7	84	199	314	356	314	199	84	7	84	199	314	356	314	199	84
95	8	56	173	278	313	278	173	56	8	56	173	278	313	278	173	56
100	8	34	140	229	260	229	140	34	8	34	140	229	260	229	140	34
105	7	22	96	167	195	167	96	22	7	22	96	167	195	167	96	22
110	5	9	64	111	130	111	64	9	5	9	64	111	130	111	64	9
115	3	3	38	78	93	78	38	3	3	3	38	78	93	78	38	3
120	2	2	16	51	65	51	16	2	2	2	16	51	65	51	16	2
125	1	1	3	26	38	26	3	1	1	1	3	26	38	26	3	1
130	0	1	1	9	16	9	1	1	0	1	1	9	16	9	1	1
135	1	1	1	2	3	2	1	1	1	1	1	2	3	2	1	1
140	1	1	1	2	2	2	1	1	1	1	1	2	2	2	1	1
145	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1	1
150	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1	1
155	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1	1
160	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
165	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
170	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
175	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
180	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Zonal Lumen Tabulation (5 degree zones)

Zone	Lumens	Zone	Lumens	Zone	Lumens	Zone	Lumens
0-5	19.8	45-50	360.3	90-95	99.1	135-140	0.5
5-10	60.5	50-55	342.2	95-100	82.2	140-145	0.4
10-15	104.5	55-60	310.2	100-105	61.9	145-150	0.3
15-20	151.6	60-65	270.4	105-110	41.2	150-155	0.3
20-25	201.2	65-70	234.1	110-115	26.2	155-160	0.2
25-30	247.0	70-75	204.8	115-120	16.2	160-165	0.2
30-35	291.0	75-80	175.7	120-125	8.7	165-170	0.1
35-40	331.2	80-85	147.2	125-130	3.5	170-175	0.1
40-45	358.5	85-90	118.7	130-135	1.1	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	0.907	0.907	0.907	0.907	0.878	0.878	0.878	0.878	0.85	0.85	0.85	0.85
1	0.812	0.764	0.722	0.684	0.783	0.74	0.701	0.667	0.756	0.717	0.682	0.65
2	0.733	0.655	0.592	0.539	0.705	0.635	0.577	0.528	0.679	0.615	0.562	0.517
3	0.664	0.568	0.495	0.438	0.638	0.551	0.483	0.43	0.613	0.534	0.472	0.422
4	0.604	0.498	0.421	0.363	0.58	0.483	0.412	0.357	0.558	0.469	0.403	0.352
5	0.553	0.44	0.363	0.307	0.531	0.428	0.356	0.303	0.51	0.416	0.348	0.298
6	0.508	0.393	0.317	0.264	0.488	0.382	0.311	0.26	0.469	0.371	0.305	0.256
7	0.469	0.353	0.28	0.229	0.45	0.344	0.275	0.226	0.433	0.335	0.269	0.223
8	0.434	0.32	0.249	0.201	0.418	0.311	0.245	0.199	0.402	0.303	0.24	0.196
9	0.404	0.291	0.223	0.178	0.389	0.284	0.22	0.176	0.374	0.277	0.216	0.174
10	0.377	0.267	0.202	0.16	0.363	0.26	0.199	0.158	0.35	0.254	0.195	0.156

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	0.799	0.799	0.799	0.799	0.752	0.752	0.752	0.709	0.709	0.709	0.689
1	0.705	0.673	0.645	0.618	0.633	0.61	0.588	0.596	0.578	0.56	0.54
2	0.63	0.578	0.534	0.496	0.544	0.507	0.475	0.512	0.482	0.456	0.435
3	0.568	0.502	0.45	0.406	0.473	0.429	0.392	0.446	0.409	0.377	0.357
4	0.516	0.442	0.385	0.34	0.417	0.368	0.329	0.393	0.352	0.318	0.298
5	0.472	0.392	0.334	0.289	0.371	0.32	0.28	0.351	0.307	0.272	0.253
6	0.434	0.351	0.293	0.249	0.333	0.281	0.242	0.315	0.27	0.235	0.218
7	0.402	0.317	0.259	0.217	0.301	0.25	0.211	0.286	0.24	0.206	0.189
8	0.373	0.288	0.232	0.191	0.274	0.223	0.187	0.261	0.216	0.182	0.166
9	0.348	0.264	0.209	0.17	0.251	0.202	0.166	0.239	0.195	0.162	0.147
10	0.327	0.242	0.189	0.152	0.231	0.183	0.149	0.221	0.177	0.145	0.131

Average Luminance Table (cd/m²)

	0	45	90
0	3922	3922	3922
45	3680	7469	7403
55	3381	6642	5826
65	2775	4920	4756
75	1786	4183	5096
85	793	3951	4926

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.

