



LUMINAIRE TESTING LABORATORY, INC.



SUSTAINING
MEMBER

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

LTL NUMBER: 05730

DATE: 04-03-2001

PREPARED FOR: ALM ARCHITECTURAL LIGHTING

CATALOG NUMBER: ZB-22G-324-T5-HO-ELB-120V

LUMINAIRE: FORMED STEEL HOUSING, FORMED WHITE ENAMEL STEEL REFLECTORS,
FORMED WHITE ENAMEL PERFORATED STEEL SHIELD WITH TRANSLUCENT
WHITE ACRYLIC INSERT BELOW LAMPS.

LAMPS: THREE SYLVANIA FP24/835/HO RATED AT 1760 LUMENS EACH.

BALLASTS: ONE SYLVANIA QT1X39-24/120PHO AND

ONE SYLVANIA QT2X39-24/120PHO

MOUNTING: RECESSED

LUMEN TO CANDELA RATIO USED = 9.17

TOTAL INPUT WATTS = 75.7 AT 120.0 VOLTS

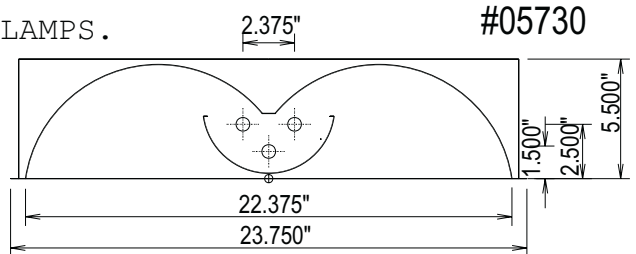
THE 0 DEGREE PLANE IS PARALLEL WITH THE LAMPS.

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0	980	980	980	980	980
5	973	977	979	981	979
15	932	940	950	962	963
25	856	870	897	921	932
35	746	771	820	861	877
45	609	647	716	772	794
55	453	505	590	661	689
65	293	347	442	508	523
75	151	184	226	242	252
85	33	39	47	49	51
90	0	0	0	0	0

FLUX

93
269
414
511
548
520
419
226
52



ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	776	14.7	25.4
0- 40	1287	24.4	42.2
0- 60	2355	44.6	77.2
0- 90	3052	57.8	100.0
90-180	0	0.0	0.0
0-180	3052	57.8	100.0

TOTAL LUMINAIRE EFFICIENCY: 57.8%

TOTAL REFLECTANCE OF PAINT: 90.7%

CIE TYPE: DIRECT

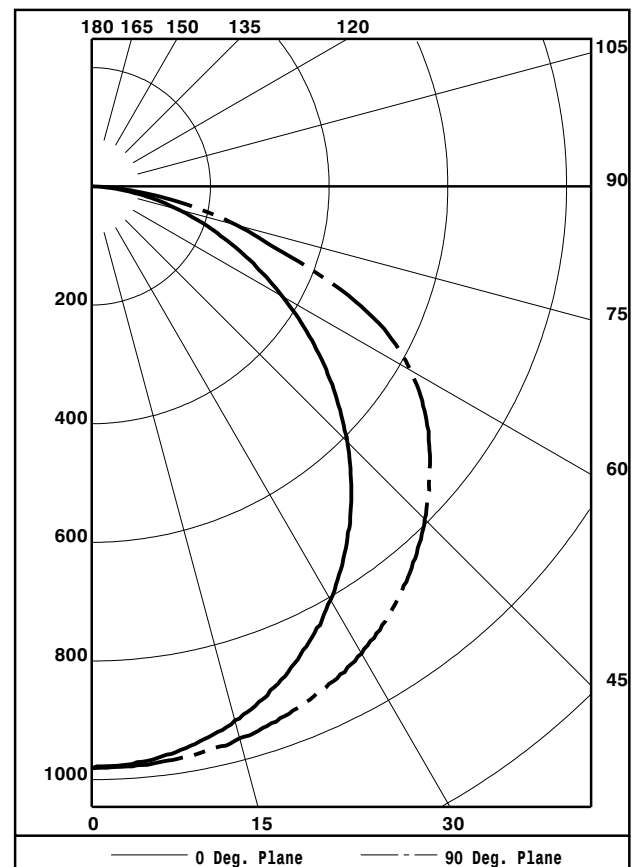
PLANE: 0-DEG 90-DEG

SPACING CRITERIA: 1.2 1.4

LUMINOUS LENGTH: 23.000 22.375

LUMINANCE IN CANDELA PER SQUARE METER

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
0	2951.	2951.	2951.
45	2594.	3050.	3382.
55	2379.	3098.	3618.
65	2088.	3150.	3727.
75	1757.	2630.	2932.
85	1140.	1624.	1762.



TESTED BY HERSCHEL SCHRECK

CHECKED BY MIKE GRATHER

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



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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD
EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	69	69	69	69	67	67	67	67	64	64	64	61	61	61	59	59	59	58
1	63	61	58	56	62	59	57	55	57	55	53	55	53	52	52	51	50	49
2	58	53	49	46	56	52	48	45	50	47	44	48	46	43	46	44	42	41
3	53	47	42	39	51	46	42	38	44	41	38	43	39	37	41	38	36	35
4	48	41	36	33	47	41	36	32	39	35	32	38	34	31	37	34	31	30
5	44	36	31	27	43	36	31	27	35	30	27	33	30	27	32	29	26	25
6	40	32	27	24	39	32	27	23	31	26	23	30	26	23	29	25	23	22
7	37	29	24	20	36	29	24	20	28	23	20	27	23	20	26	23	20	19
8	34	26	21	17	33	26	21	17	25	20	17	24	20	17	23	20	17	16
9	31	23	18	15	30	23	18	15	22	18	15	22	18	15	21	17	15	14
10	29	21	16	13	28	21	16	13	20	16	13	20	16	13	19	16	13	12

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0	980	980	980	980	980
5	973	977	979	981	979
10	957	963	968	974	974
15	932	940	950	962	963
20	898	909	926	944	950
25	856	870	897	921	932
30	805	825	861	896	909
35	746	771	820	861	877
40	681	712	770	819	839
45	609	647	716	772	794
50	532	580	657	720	743
55	453	505	590	661	689
60	370	426	518	594	621
65	293	347	442	508	523
70	220	266	349	375	371
75	151	184	226	242	252
80	89	102	126	142	145
85	33	39	47	49	51
90	0	0	0	0	0

ZONAL LUMEN SUMMARY

0- 5	23.
5- 10	70.
10- 15	114.
15- 20	155.
20- 25	191.
25- 30	223.
30- 35	247.
35- 40	265.
40- 45	273.
45- 50	274.
50- 55	268.
55- 60	252.
60- 65	228.
65- 70	191.
70- 75	138.
75- 80	88.
80- 85	43.
85- 90	9.

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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VISUAL COMFORT PROBABILITY TABLE

RATED LUMENS PER LAMP 1760.

100. FC. REFLECTANCES 80/50/20		LUMINAIRE 0 DEG PLANE				LUMINAIRE 90 DEG PLANE			
ROOM									
W	L	8.5	10.0	13.0	16.0	8.5	10.0	13.0	16.0
20	20	57	64	76	86	50	55	68	82
20	30	53	57	65	75	44	48	53	65
20	40	53	55	60	66	43	44	47	54
20	60	52	54	57	62	42	43	44	48
30	20	57	62	72	83	52	57	67	80
30	30	53	55	61	71	46	48	52	63
30	40	52	53	56	62	44	45	46	52
30	60	51	52	53	57	43	43	42	46
30	80	52	52	52	55	43	43	41	44
40	20	59	63	71	81	55	59	68	79
40	30	54	56	60	68	49	51	53	62
40	40	52	53	55	60	46	46	47	52
40	60	52	52	51	55	45	45	43	46
40	80	52	52	51	53	45	44	42	43
40	100	53	53	51	53	45	45	42	43
60	30	55	57	59	66	51	53	54	63
60	40	53	54	54	58	48	48	48	52
60	60	52	52	51	53	46	46	43	46
60	80	52	52	50	51	46	45	42	43
60	100	53	52	50	51	47	45	42	42
100	40	57	57	56	60	53	53	52	55
100	60	56	55	52	54	51	50	47	49
100	80	55	54	51	52	50	49	45	46
100	100	55	54	51	51	50	48	44	44