



LUMINAIRE TESTING LABORATORY, INC.



SUSTAINING
MEMBER

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

LTL NUMBER: 06731

DATE: 05-31-2002

PREPARED FOR: ALM ARCHITECTURAL LIGHTING

CATALOG NUMBER: ZB-24G-332-OCT-ELB-120V

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

LAMPS: THREE PHILIPS F32T8/TL841 RATED AT 2850 LUMENS EACH.

BALLASTS: ONE ADVANCE REL-2P32-SC AND ONE ADVANCE REL-1P32-SC

MOUNTING: RECESSED

LUMEN TO CANDELA RATIO USED = 9.18

TOTAL INPUT WATTS = 86.0 AT 120.0 VOLTS

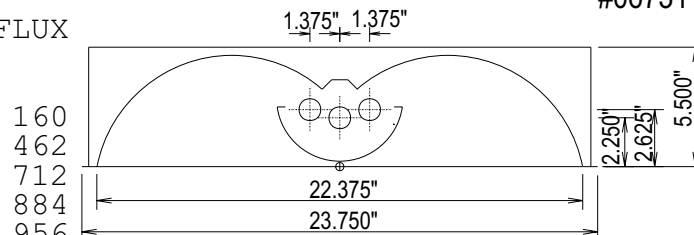
THE 0 DEGREE PLANE IS PARALLEL WITH THE LAMPS.

#06731

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0	1688	1688	1688	1688	1688
5	1672	1680	1683	1683	1687
15	1604	1617	1637	1653	1662
25	1476	1500	1547	1585	1604
35	1296	1339	1415	1486	1517
45	1067	1131	1248	1344	1387
55	801	890	1039	1159	1209
65	524	634	800	911	946
75	274	368	449	442	463
85	60	73	90	96	99
90	0	0	0	0	0

FLUX



ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	1335	15.6	24.8
0- 40	2219	25.9	41.2
0- 60	4091	47.8	76.0
0- 90	5384	63.0	100.0
90-180	0	0.0	0.0
0-180	5384	63.0	100.0

TOTAL LUMINAIRE EFFICIENCY: 63.0%

TOTAL REFLECTANCE OF PAINT: 89.0%

CIE TYPE: DIRECT

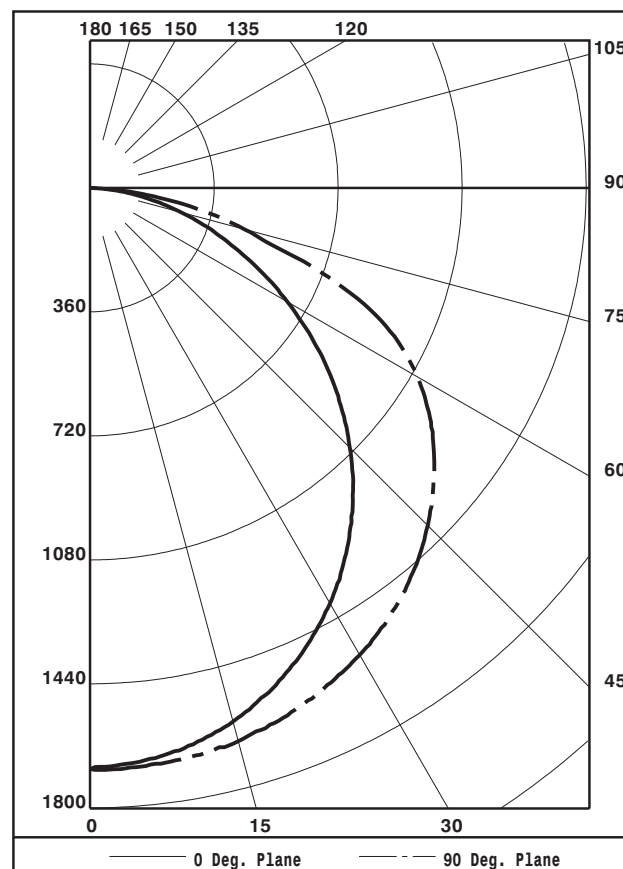
PLANE: 0-DEG 90-DEG

SPACING CRITERIA: 1.2 1.4

LUMINOUS LENGTH: 47.000 22.375

LUMINANCE IN CANDELA PER SQUARE METER

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
0	2488.	2488.	2488.
45	2224.	2601.	2891.
55	2058.	2670.	3107.
65	1827.	2790.	3299.
75	1560.	2557.	2636.
85	1015.	1522.	1674.



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	75	75	75	75	73	73	73	73	70	70	70	67	67	67	64	64	64	63
1	69	66	63	61	67	64	62	60	62	60	58	59	58	56	57	56	54	53
2	63	57	53	50	61	56	52	49	54	51	48	52	49	47	50	48	46	44
3	57	51	46	42	56	50	45	41	48	44	40	46	43	40	44	42	39	38
4	52	45	39	35	51	44	39	35	42	38	34	41	37	34	39	36	33	32
5	47	39	34	29	46	39	33	29	37	32	29	36	32	28	35	31	28	27
6	44	35	29	25	42	34	29	25	33	28	25	32	28	25	31	27	24	23
7	40	31	26	22	39	31	25	22	30	25	21	29	25	21	28	24	21	20
8	37	28	22	19	36	28	22	19	27	22	18	26	22	18	25	21	18	17
9	34	25	20	16	33	25	20	16	24	19	16	23	19	16	23	19	16	15
10	31	23	18	14	31	22	17	14	22	17	14	21	17	14	21	17	14	13

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0	1688	1688	1688	1688	1688
5	1672	1680	1683	1683	1687
10	1645	1656	1665	1673	1678
15	1604	1617	1637	1653	1662
20	1547	1566	1597	1623	1637
25	1476	1500	1547	1585	1604
30	1393	1424	1485	1539	1565
35	1296	1339	1415	1486	1517
40	1187	1239	1335	1420	1457
45	1067	1131	1248	1344	1387
50	941	1015	1152	1257	1304
55	801	890	1039	1159	1209
60	661	764	924	1048	1098
65	524	634	800	911	946
70	393	499	655	705	710
75	274	368	449	442	463
80	160	227	236	269	278
85	60	73	90	96	99
90	0	0	0	0	0

ZONAL LUMEN SUMMARY

0- 5	40.
5- 10	120.
10- 15	196.
15- 20	266.
20- 25	329.
25- 30	383.
30- 35	426.
35- 40	458.
40- 45	476.
45- 50	480.
50- 55	470.
55- 60	446.
60- 65	408.
65- 70	350.
70- 75	263.
75- 80	170.
80- 85	85.
85- 90	17.

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 2850.

100. FC. ROOM		REFLECTANCES 80/50/20 LUMINAIRES 0 DEG PLANE				LUMINAIRES 90 DEG PLANE			
W	L	8.5	10.0	13.0	16.0	8.5	10.0	13.0	16.0
20	20	59	67	79	88	52	58	72	85
20	30	54	60	68	77	46	50	56	68
20	40	53	56	62	69	44	47	50	57
20	60	53	56	59	64	43	45	46	51
30	20	59	65	75	85	54	59	70	83
30	30	54	57	64	73	48	51	55	66
30	40	52	54	58	65	45	47	49	55
30	60	52	53	55	60	44	45	45	49
30	80	52	53	53	58	44	45	43	46
40	20	60	65	73	83	57	61	71	82
40	30	55	57	62	71	50	53	56	66
40	40	53	54	56	63	47	48	49	54
40	60	52	53	53	57	46	46	45	48
40	80	53	53	52	55	46	46	43	46
40	100	54	54	52	54	47	46	43	45
60	30	56	59	62	69	53	55	57	66
60	40	54	55	56	61	50	50	50	54
60	60	53	53	52	55	48	47	45	48
60	80	53	53	50	53	47	47	44	45
60	100	54	53	51	52	48	47	43	44
100	40	58	58	58	62	55	55	54	58
100	60	56	56	53	56	52	51	49	51
100	80	56	55	52	53	51	50	46	48
100	100	56	55	51	52	51	50	46	45

THIS TABLE WAS CALCULATED ACCORDING TO IESNA LM-42-72. THE VCP CALCULATION PROCEDURE IS MOST ACCURATE FOR LUMINAIRES THAT EXHIBIT THE FOLLOWING CHARACTERISTICS. 1). LUMINAIRE IS RELATIVELY CONSISTANT IN LUMINANCE 2). LUMINAIRE HAS WELL-DEFINED LUMINOUS EDGES AND 3). LUMINAIRE UTILIZES FLUORESCENT LAMPS. CAUTION SHOULD BE USED WHEN APPLYING VCP VALUES BASED ON LUMINAIRES THAT DO NOT CONFORM TO THE ABOVE CONDITIONS.