

● **PROJECT INFORMATION**

Project:

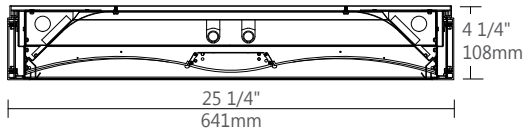
Type:

Notes:

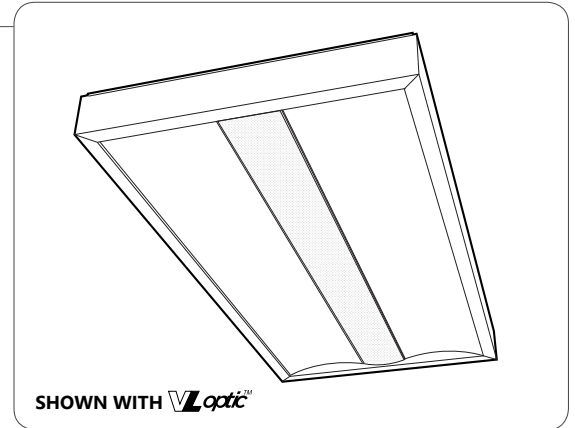
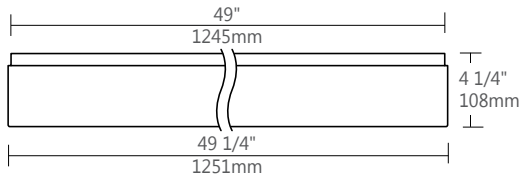
Approved by:  Date:

● **DIMENSIONS**

SECTION VIEW



SIDE VIEW



● **ORDERING CODE**

1	2	3	4	5	6	7	8	9	10	11	12	13	14
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● **PRODUCT SPECIFICATIONS**

1 PRODUCT ID	2 SIZE	3 CENTER OPTIC	4 LAMP	5 LAMP CONFIGURATION	6 FINISH
WA wave	24 2'X4'	VL vl optic	T5 T5 T5HO T5HO T8 T8	1 1 lamp 2 2 lamps 3 3 lamps	W white BLK black C custom

7 VOLTAGE	8 BALLAST	9 CIRCUITS	10 MOUNTING/SUSPENSION	11 BATTERY (OPTIONAL)
120 120V 277 277V 347 347V <sup>(1)</sup> UNV universal	D dimming E instant start <sup>(2)</sup> ERS program start BI bi-level dimming +M master +S satelite	1 1 regular 2 2 regular 2A/B 2 alternating +E(#) emergency section +NL(#) night light section +GTD(#) generator transfer device	SM surface mount	B# battery pack

(1) Please consult factory (2) Available with T8 lamp only

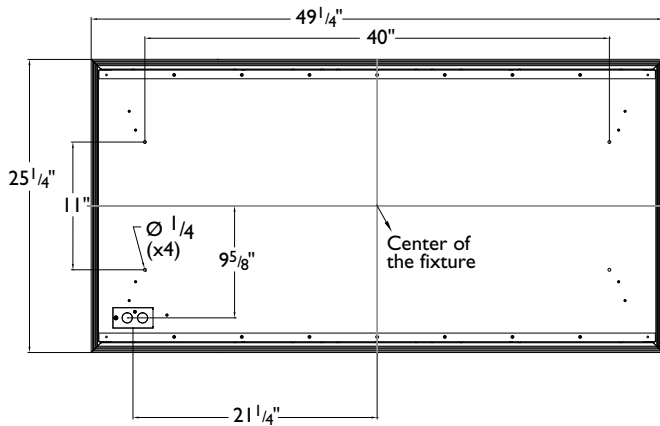
12 OTHER (OPTIONAL)	13 IC CONTROLS (OPTIONAL)	14 CUSTOM (OPTIONAL)
F fuse FW(#) flex whip (6' std)	DS# daylight sensor OS# occupancy sensor DS+OS# daylight+occupancy sensor DOS# daylight&occupancy sensor <small>See integrated controls guide for further details</small>	C custom  <small>Please specify</small>

**SPECIFY BALLAST NAME (if needed)**

**SPECIFY BATTERY NAME (if needed)**

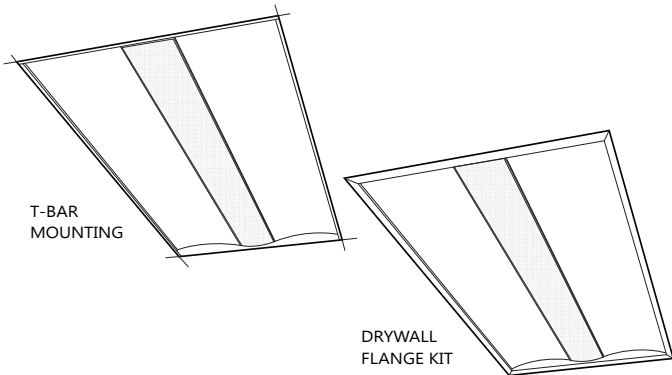
● **CEILING SYSTEM**

**MOUNTING HOLES POSITION**



**RECESSED OPTION**

For more details see recessed specification sheets available at: [www.axislighting.com](http://www.axislighting.com)



**i** Installation sheets for all mounting options are available at: [www.axislighting.com](http://www.axislighting.com)

● **CONSTRUCTION**

<b>Housing</b>	Die formed cold rolled sheet steel (20 gauge)
<b>Central Lens Housing Reflectors</b>	Extruded aluminum (0.060" nominal)
<b>Interior Brackets</b>	Die formed cold rolled sheet steel (22 gauge)
<b>Surface Mount Kit</b>	Extruded aluminum (0.070" nominal)

● **WEIGHT**

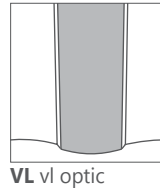
<b>Surface Mount</b>	40.7 lbs / 18.5 kg
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● **OPTICAL SYSTEM**

WAVE optical system includes two side lenses and one center lens. Center lens has an extruded aluminum frame and can be opened to replace the lamps. Side lenses are 0.08" PMMA satin blend.

There are three available options for center lens:

**VL<sup>opti</sup>**: PMMA Precision formed microconical structure (VL Optic) 92 percent transmissive that cuts off glare above 55 degrees.



● **FINISH**

**Highly reflective, matte powder coat white paint** for high efficiency. Matte texture to diffuse glare and lamp image on the surface within the optical chamber exterior. Custom finishes are also available.

● **ELECTRICAL**

<b>Ballast</b>	Electronic IS, Electronic Rapid Start, Dimming (0-10V, Line, EcoSystem, DALI), BI-level dimming With preinstalled ballast disconnect as per NEC & CEC
<b>Emergency</b>	Emergency battery pack or emergency circuit
<b>Voltage</b>	120V, 277V, 347V, UNV

● **STANDARD AND END MOUNT POWER FEED**

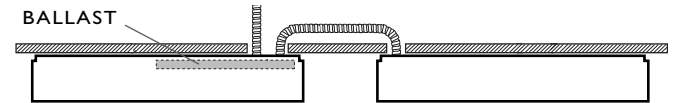
Knockouts for BX cable connection are provided both on the top and on the ends of the luminaire. This allows for an end mount power feed solution if it is required.



(BX CABLE BY OTHER)

● **MASTER / SATELLITE CONFIGURATION**

Master / Satellite configuration allows the satellite luminaire to share a ballast and power supply with the master luminaire.



(BX CABLE BY OTHER)

**i** Check Master/Satellite Installation Guide file DIA-PO-WA.MS.INST for details.

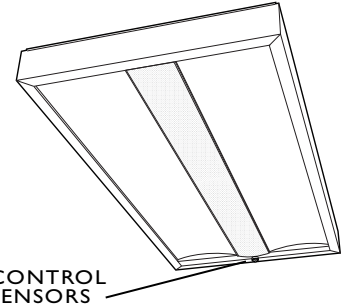
● **APPROVALS**

Certified to UL and CUL standards Suitable for damp locations.

● **INTEGRATED CONTROL OPTIONS**

WAVE LED luminaires allow the use of integrated controls such as Daylight sensors (DS), occupancy sensors (OS), individual daylight sensors and occupancy sensors (DS+OS), and combination daylight/occupancy sensors (DOS). These options can be seamlessly integrated into our luminaires. The control system could be used to optimize the lighting of the space by reducing energy consumption through daylight harvesting and occupancy, thereby improving the overall interior environment and allowing for LEED credits.

- Consult factory for other options.
- Refer to IC brochure for more information.



SENSORS	BRAND	Model	TYPE	CODE	COMPATIBLE DIMMING BALLAST
Daylight Sensor (DS)	Lutron	EC-DIR-WH	Daylight	LD	EcoSystem
	Wattstopper	FD-301	Daylight	WD	0-10V
	Philips	Luxsense	Daylight	PL	0-10V
Occupancy Sensor (OS)	Wattstopper	FS-205	PIR Occupancy	WP1	Programmed Rapid Start
		FS-355	PIR Occupancy	WP2	Programmed Rapid Start
		FS-155	PIR Occupancy	WP3	Programmed Rapid Start
		FS-505	Ultrasonic Occupancy	WU1	Programmed Rapid Start
		FS-505C	Ultrasonic Occupancy	WU2	Programmed Rapid Start
		FM-105	High Frequency Occupancy	WH	Programmed Rapid Start
Daylight & Occupancy Sensors (DOS)	Philips	Actilume	Daylight & PIR Occupancy	PA	DALI or 0-10V

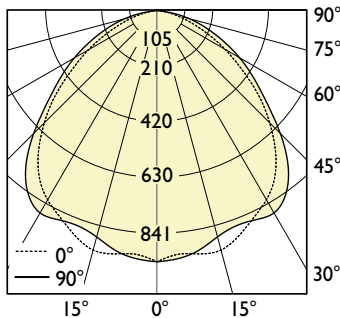
● **PHOTOMETRIC DATA**

**I T5**



with **VLoqic™**

**PHOTOMETRIC CURVE**



**Test Lamp: 1xF28T5**  
 IES FILE: WA24-VL-T5-I

**Efficiency: 87.5%**

**i** All IES files are available for download at [www.axislighting.com](http://www.axislighting.com)

**CANDELA DISTRIBUTION**

Vertical Angle	Horizontal Angles					Zonal Lumens
	0	22.5	45	67.5	90	
0	945	945	945	945	945	
5	920	935	925	946	936	50
15	933	911	906	873	882	216
25	861	853	835	862	869	361
35	773	759	800	846	846	482
45	604	635	667	662	661	513
55	398	415	449	443	449	421
65	221	243	250	275	284	288
75	92	105	123	136	143	157
85	18	23	24	22	19	48
90	2	2	2	2	2	

**LUMINANCE DATA (CD/M<sup>2</sup>)**

Vertical Angle	Horizontal Angles		
	0	45	90
45	1079	1093	1092
55	848	849	860
65	605	581	669
75	368	386	458
85	145	122	102

**COEFFICIENTS OF UTILIZATION (%)**

Ceiling	80			70				50			
	70	50	30	10	70	50	30	10	50	30	10
Wall	70	50	30	10	70	50	30	10	50	30	10
0	104	104	104	104	102	102	102	102	97	97	97
1	96	92	89	86	94	90	87	84	86	84	82
2	88	81	75	71	86	79	74	70	76	72	68
3	80	72	65	59	78	70	64	59	68	62	58
4	74	64	56	51	72	63	56	50	60	54	50
5	68	57	49	44	66	56	49	44	54	48	43
6	63	51	44	38	61	51	43	38	49	43	38
7	58	47	39	34	57	46	39	34	45	38	34
8	54	43	35	30	53	42	35	30	41	35	30
9	51	39	32	27	49	39	32	27	38	31	27
10	47	36	29	25	46	36	29	25	35	29	25

Based on floor reflectance of 20

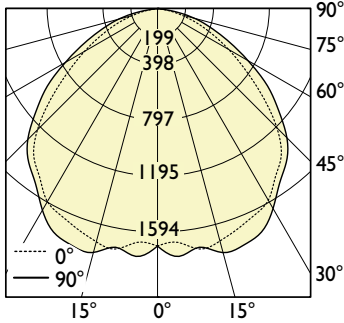
**PHOTOMETRIC DATA**

**2 T5**



with **VL<sub>optix</sub>**

**PHOTOMETRIC CURVE**



**Test Lamp: 2xF28T5**  
 IES FILE: WA24-VL-T5-2

**Efficiency: 86.0%**

**CANDELA DISTRIBUTION**

Vertical Angle	Horizontal Angles					Zonal Lumens
	0	22.5	45	67.5	90	
0	1685	1685	1685	1685	1685	
5	1665	1754	1732	1756	1765	93
15	1709	1732	1742	1773	1793	414
25	1621	1665	1728	1768	1750	724
35	1461	1531	1541	1516	1513	926
45	1203	1229	1267	1293	1302	983
55	770	831	875	947	955	844
65	437	468	545	560	572	585
75	187	212	247	278	291	321
85	37	46	48	45	45	97
90	3	4	4	4	3	

**COEFFICIENTS OF UTILIZATION (%)**

Ceiling	80				70				50			
	70	50	30	10	70	50	30	10	50	30	10	
Wall												
0	103	103	103	103	100	100	100	100	96	96	96	
1	94	91	87	84	92	89	85	83	85	82	80	
2	86	79	74	69	84	78	73	68	75	71	67	
3	79	70	63	58	77	69	63	58	66	61	57	
4	72	62	55	49	70	61	54	49	59	53	48	
5	67	56	48	43	65	55	48	42	53	47	42	
6	62	50	43	37	60	49	42	37	48	42	37	
7	57	46	38	33	56	45	38	33	44	37	33	
8	53	42	34	29	52	41	34	29	40	34	29	
9	50	38	31	26	48	38	31	26	37	31	26	
10	46	35	28	24	45	35	28	24	34	28	24	

Based on floor reflectance of 20

**LUMINANCE DATA (CD/M<sup>2</sup>)**

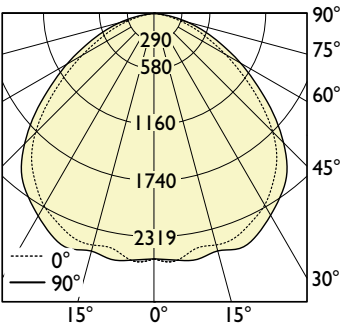
Vertical Angle	Horizontal Angles		
	0	45	90
45	2150	2076	2150
55	1641	1656	1828
65	1198	1267	1350
75	750	775	934
85	291	245	235

**3 T5**



with **VL<sub>optix</sub>**

**PHOTOMETRIC CURVE**



**Test Lamp: 3xF28T5**  
 IES FILE: WA24-VL-T5-3

**Efficiency: 83.2%**

**CANDELA DISTRIBUTION**

Vertical Angle	Horizontal Angles					Zonal Lumens
	0	22.5	45	67.5	90	
0	2557	2557	2557	2557	2557	
5	2589	2609	2596	2595	2580	139
15	2498	2515	2527	2530	2562	601
25	2400	2396	2497	2548	2545	1048
35	2159	2204	2271	2284	2308	1359
45	1752	1802	1877	1906	1911	1455
55	1143	1198	1262	1335	1320	1223
65	629	680	754	791	795	833
75	264	298	344	384	388	447
85	48	66	66	62	60	135
90	5	6	5	4	3	

**COEFFICIENTS OF UTILIZATION (%)**

Ceiling	80				70				50			
	70	50	30	10	70	50	30	10	50	30	10	
Wall												
0	99	99	99	99	97	97	97	97	92	92	92	
1	91	88	84	81	89	86	83	80	82	80	78	
2	83	77	72	67	81	75	71	66	72	68	65	
3	76	68	62	56	74	67	61	56	64	59	55	
4	70	60	53	48	68	59	53	48	57	52	47	
5	64	54	47	42	63	53	46	41	51	45	41	
6	60	49	42	36	58	48	41	36	47	40	36	
7	55	44	37	32	54	44	37	32	42	36	32	
8	51	40	33	29	50	40	33	29	39	33	28	
9	48	37	30	26	47	37	30	26	36	30	26	
10	45	34	28	23	44	34	28	23	33	27	23	

Based on floor reflectance of 20

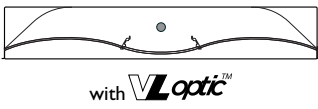
**LUMINANCE DATA (CD/M<sup>2</sup>)**

Vertical Angle	Horizontal Angles		
	0	45	90
45	3130	3074	3154
55	2435	2389	2525
65	1724	1754	1875
75	1060	1079	1243
85	385	332	317

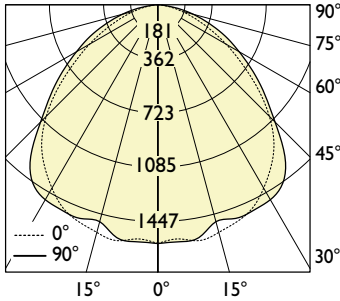
**i** All IES files are available for download at: [www.axislighting.com](http://www.axislighting.com)

● **PHOTOMETRIC DATA**

**1 T5HO**



**PHOTOMETRIC CURVE**



**Test Lamp: 1xF54T5HO**  
 IES FILE: WA24-VL-T5HO-1

**Efficiency: 87.4%**

**CANDELA DISTRIBUTION**

Vertical Angle	Horizontal Angles					Zonal Lumens
	0	22.5	45	67.5	90	
0	1593	1593	1593	1593	1593	
5	1568	1627	1621	1606	1588	86
15	1573	1598	1540	1505	1498	371
25	1496	1474	1445	1507	1513	626
35	1318	1316	1405	1448	1454	834
45	1053	1102	1137	1132	1107	881
55	686	718	761	756	776	722
65	382	410	434	479	498	495
75	164	181	215	234	245	273
85	33	38	41	38	34	83
90	4	3	4	3	3	

**COEFFICIENTS OF UTILIZATION (%)**

Ceiling	80			70			50				
	70	50	30	10	70	50	30	10	50	30	10
Wall	70	50	30	10	70	50	30	10	50	30	10
0	104	104	104	104	102	102	102	102	97	97	97
1	96	92	89	86	94	90	87	84	86	84	82
2	88	81	75	71	85	79	74	70	76	72	68
3	80	72	65	59	78	70	64	59	68	62	58
4	74	64	56	51	72	63	56	50	60	54	50
5	68	57	49	44	66	56	49	44	54	48	43
6	63	51	44	38	61	51	43	38	49	43	38
7	58	47	39	34	57	46	39	34	45	38	34
8	54	43	35	30	53	42	35	30	41	35	30
9	51	39	32	27	49	39	32	27	38	31	27
10	47	36	29	25	46	36	29	25	35	29	25

Based on floor reflectance of 20

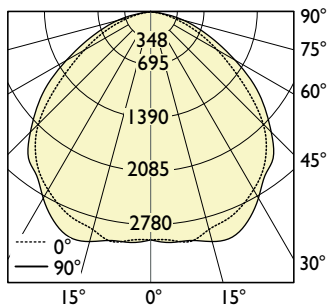
**LUMINANCE DATA (CD/M<sup>2</sup>)**

Vertical Angle	Horizontal Angles		
	0	45	90
45	1881	1862	1827
55	1461	1441	1484
65	1046	1009	1175
75	658	675	786
85	261	207	180

**2 T5HO**



**PHOTOMETRIC CURVE**



**Test Lamp: 2xF54T5HO**  
 IES FILE: WA24-VL-T5HO-2

**Efficiency: 86.0%**

**CANDELA DISTRIBUTION**

Vertical Angle	Horizontal Angles					Zonal Lumens
	0	22.5	45	67.5	90	
0	2975	2975	2975	2975	2975	
5	2991	2986	3010	3000	3022	161
15	2943	2927	2983	3074	3104	713
25	2806	2859	3005	3039	3012	1247
35	2550	2645	2655	2618	2608	1593
45	2089	2108	2203	2249	2234	1698
55	1335	1430	1506	1638	1651	1457
65	763	808	930	966	980	1008
75	323	356	428	486	491	553
85	62	80	79	77	83	167
90	6	7	8	7	6	

**COEFFICIENTS OF UTILIZATION (%)**

Ceiling	80			70			50				
	70	50	30	10	70	50	30	10	50	30	10
Wall	70	50	30	10	70	50	30	10	50	30	10
0	103	103	103	103	100	100	100	100	96	96	96
1	94	91	87	84	92	89	86	83	85	82	80
2	86	80	74	69	84	78	73	68	75	71	67
3	79	70	63	58	77	69	63	58	66	61	57
4	72	62	55	49	70	61	54	49	59	53	48
5	67	56	48	43	65	55	48	43	53	47	42
6	62	50	43	37	60	50	42	37	48	42	37
7	57	46	38	33	56	45	38	33	44	37	33
8	53	42	34	29	52	41	34	29	40	34	29
9	50	38	31	26	48	38	31	26	37	31	26
10	46	35	28	24	45	35	28	24	34	28	24

Based on floor reflectance of 20

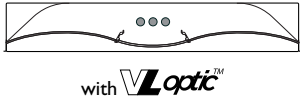
**LUMINANCE DATA (CD/M<sup>2</sup>)**

Vertical Angle	Horizontal Angles		
	0	45	90
45	3732	3608	3689
55	2844	2852	3159
65	2092	2164	2312
75	1298	1345	1574
85	490	402	434

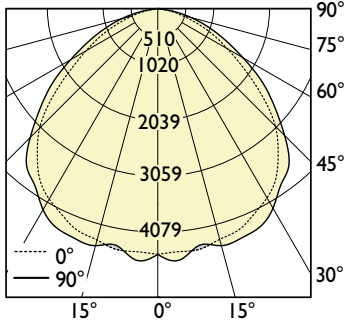
**i** All IES files are available for download at: [www.axislighting.com](http://www.axislighting.com)

**PHOTOMETRIC DATA**

**3 T5HO**



**PHOTOMETRIC CURVE**



Test Lamp: 3x F54T5HO  
 IES FILE: WA24-VL-T5HO-3

**Efficiency: 83.2%**

**CANDELA DISTRIBUTION**

Vertical Angle	Horizontal Angles					Zonal Lumens
	0	22.5	45	67.5	90	
0	4466	4466	4466	4466	4466	
5	4435	4378	4391	4521	4589	239
15	4343	4371	4377	4396	4461	1042
25	4130	4134	4304	4366	4385	1803
35	3755	3815	3925	3944	3909	2345
45	3033	3116	3256	3302	3272	2508
55	1943	2089	2188	2297	2329	2108
65	1114	1165	1284	1346	1372	1429
75	459	514	604	666	664	771
85	84	108	115	105	104	233
90	9	9	9	8	6	

**COEFFICIENTS OF UTILIZATION (%)**

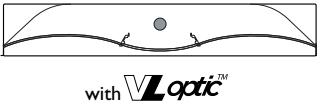
Ceiling	80				70				50			
	70	50	30	10	70	50	30	10	50	30	10	
Wall	70	50	30	10	70	50	30	10	50	30	10	
0	99	99	99	99	97	97	97	97	93	93	93	
1	91	88	84	81	89	86	83	80	82	80	78	
2	84	77	72	67	81	76	71	66	73	68	65	
3	76	68	62	56	74	67	61	56	64	59	55	
4	70	61	54	48	68	59	53	48	57	52	47	
5	65	54	47	42	63	53	46	41	52	46	41	
6	60	49	42	36	58	48	41	36	47	40	36	
7	55	44	37	32	54	44	37	32	42	36	32	
8	52	40	33	29	50	40	33	29	39	33	28	
9	48	37	30	26	47	37	30	26	36	30	26	
10	45	34	28	23	44	34	28	23	33	27	23	

Based on floor reflectance of 20

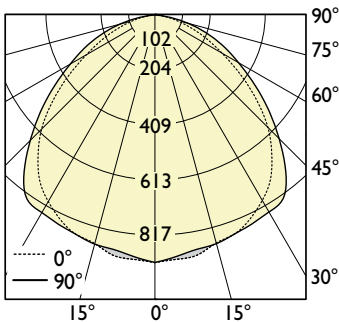
**LUMINANCE DATA (CD/M<sup>2</sup>)**

Vertical Angle	Horizontal Angles		
	0	45	90
45	5418	5333	5402
55	4139	4143	4456
65	3054	2986	3239
75	1842	1896	2128
85	670	584	547

**1 T8**



**PHOTOMETRIC CURVE**



Test Lamp: 1x F32T8  
 IES FILE: WA24-VL-T8-1

**Efficiency: 86.5%**

**CANDELA DISTRIBUTION**

Vertical Angle	Horizontal Angles					Zonal Lumens
	0	22.5	45	67.5	90	
0	919	919	919	919	919	
5	911	909	909	903	901	49
15	877	888	873	878	880	210
25	837	839	837	845	856	357
35	750	752	787	818	833	472
45	597	619	655	662	657	505
55	395	410	446	449	456	420
65	219	236	254	280	290	288
75	93	105	124	137	143	159
85	19	22	24	22	21	48
90	2	2	2	2	2	

**COEFFICIENTS OF UTILIZATION (%)**

Ceiling	80				70				50			
	70	50	30	10	70	50	30	10	50	30	10	
Wall	70	50	30	10	70	50	30	10	50	30	10	
0	103	103	103	103	101	101	101	101	96	96	96	
1	95	91	88	85	93	89	86	83	85	83	81	
2	87	80	74	70	84	78	73	69	75	71	67	
3	79	71	64	59	77	69	63	58	67	61	57	
4	73	63	55	50	71	62	55	50	60	54	49	
5	67	56	49	43	65	55	48	43	53	47	42	
6	62	51	43	38	60	50	43	38	48	42	37	
7	57	46	39	33	56	45	38	33	44	38	33	
8	53	42	35	30	52	41	34	30	40	34	29	
9	50	39	32	27	49	38	31	27	37	31	27	
10	47	36	29	24	46	35	29	24	34	28	24	

Based on floor reflectance of 20

**LUMINANCE DATA (CD/M<sup>2</sup>)**

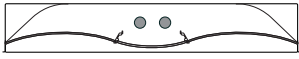
Vertical Angle	Horizontal Angles		
	0	45	90
45	1067	1073	1084
55	841	844	873
65	601	590	685
75	375	391	460
85	148	121	108

**i** All IES files are available for download at: [www.axislighting.com](http://www.axislighting.com)



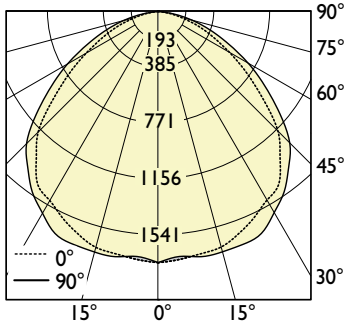
**PHOTOMETRIC DATA**

**2 T8**



with **VL<sub>opti</sub>**

**PHOTOMETRIC CURVE**



**Test Lamp: 2xF32T8**  
 IES FILE: WA24-VL-T8-2

**Efficiency: 83.6%**

**CANDELA DISTRIBUTION**

Vertical Angle	Horizontal Angles					Zonal Lumens
	0	22.5	45	67.5	90	
0	1734	1734	1734	1734	1734	
5	1718	1725	1721	1700	1698	92
15	1684	1670	1698	1710	1718	404
25	1571	1618	1657	1680	1691	696
35	1455	1469	1503	1499	1520	901
45	1174	1195	1247	1291	1288	965
55	758	806	858	907	906	823
65	427	461	522	544	548	568
75	184	203	237	266	265	307
85	36	42	45	42	41	92
90	3	4	4	4	3	

**COEFFICIENTS OF UTILIZATION (%)**

Ceiling	80				70				50			
	70	50	30	10	70	50	30	10	50	30	10	
Wall	70	50	30	10	70	50	30	10	50	30	10	
0	100	100	100	100	97	97	97	97	93	93	93	
1	92	88	85	82	90	86	83	80	83	80	78	
2	84	77	72	67	82	76	71	67	73	69	65	
3	77	68	62	57	75	67	61	56	64	59	55	
4	70	61	54	48	68	60	53	48	57	52	47	
5	65	54	47	42	63	53	47	41	52	46	41	
6	60	49	42	36	58	48	41	36	47	40	36	
7	56	44	37	32	54	44	37	32	42	36	32	
8	52	41	33	29	50	40	33	29	39	33	28	
9	48	37	30	26	47	37	30	26	36	30	26	
10	45	34	28	23	44	34	28	23	33	27	23	

Based on floor reflectance of 20

**LUMINANCE DATA (CD/M<sup>2</sup>)**

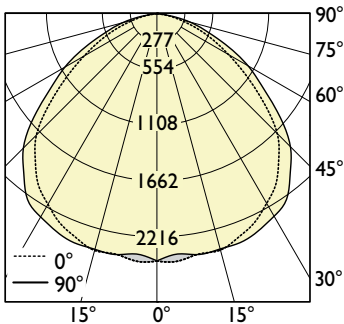
Vertical Angle	Horizontal Angles		
	0	45	90
45	2098	2042	2127
55	1616	1624	1734
65	1169	1215	1294
75	738	744	851
85	286	228	215

**3 T8**



with **VL<sub>opti</sub>**

**PHOTOMETRIC CURVE**



**Test Lamp: 3xF32T8**  
 IES FILE: WA24-VL-T8-3

**Efficiency: 80.2%**

**CANDELA DISTRIBUTION**

Vertical Angle	Horizontal Angles					Zonal Lumens
	0	22.5	45	67.5	90	
0	2453	2453	2453	2453	2453	
5	2463	2493	2490	2478	2393	133
15	2428	2410	2393	2385	2417	573
25	2290	2277	2343	2397	2380	989
35	2064	2098	2176	2218	2248	1298
45	1698	1745	1810	1864	1881	1401
55	1107	1168	1247	1292	1300	1195
65	628	669	736	792	804	819
75	263	293	339	370	384	440
85	50	60	65	60	61	132
90	6	5	6	5	4	

**COEFFICIENTS OF UTILIZATION (%)**

Ceiling	80				70				50			
	70	50	30	10	70	50	30	10	50	30	10	
Wall	70	50	30	10	70	50	30	10	50	30	10	
0	96	96	96	96	93	93	93	93	89	89	89	
1	88	85	81	78	86	83	80	77	79	77	75	
2	80	74	69	65	78	73	68	64	70	66	62	
3	74	65	59	54	72	64	58	54	62	57	53	
4	67	58	51	46	66	57	51	46	55	50	45	
5	62	52	45	40	60	51	45	40	49	44	39	
6	57	47	40	35	56	46	40	35	45	39	34	
7	53	43	36	31	52	42	35	31	41	35	30	
8	50	39	32	27	48	38	32	27	37	31	27	
9	46	36	29	25	45	35	29	25	34	28	24	
10	43	33	26	22	42	32	26	22	32	26	22	

Based on floor reflectance of 20

**LUMINANCE DATA (CD/M<sup>2</sup>)**

Vertical Angle	Horizontal Angles		
	0	45	90
45	3034	2964	3106
55	2358	2360	2487
65	1721	1712	1897
75	1056	1065	1231
85	400	330	320

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