

# EFU Fluorescent Factory Sealed Luminaires

## Explosionproof, Dust-Ignitionproof

UNILETS® for use with Threaded Metal Conduit Suitable for use in Wet Locations

### NEC/CEC:

Class I, Division 1 and 2, Groups C, D  
Class II, Division 1 and 2, Groups E, F, G  
Class III

### Applications

- Classified areas such as inside paint spray booths, in pharmaceutical firms, paint-manufacturing plants, printing plants or any location where ignitable dust, fumes, gases, paint residue, paint powder or corrosive atmospheres may be present.

### Features

- Factory sealed unit – no external seals required. Installation is easy.
- A wide range of ballasts and voltages are available for both domestic and export applications.
- Three hubs on each end of fixture provide for straight-down mounting or at 45° to either side. Two close-up plugs furnished for each end of fixture.
- Explosionproof, impact-resistant and heat-resistant glass tubes protect lamps.
- Reflectors can easily be removed for replacement or cleaning using only a screwdriver.
- Appleton EFU fixtures are supplied with Class P ballasts, equipped with an automatic thermally activated protective device. They offer protection against excessive voltage, internal ballast short circuiting, inadequate lamp maintenance and improper fixture application.
- Non-sparking exterior surfaces for safer operation.

### Standard Materials

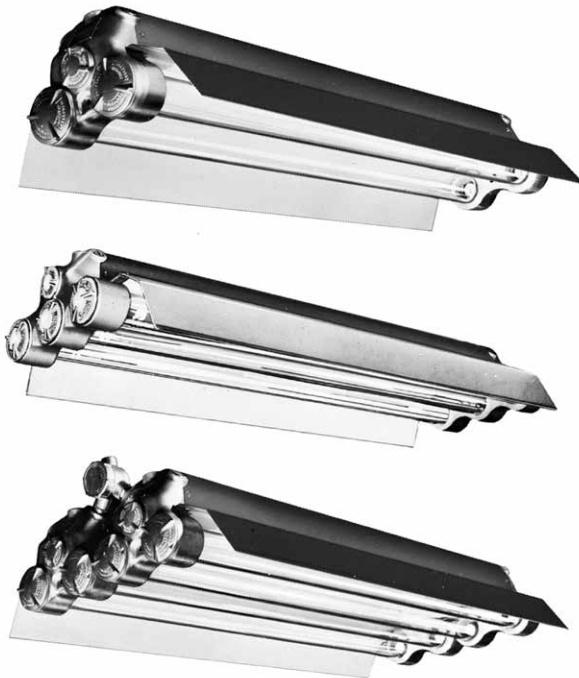
- Hood, housings and reflectors: copperfree (4/10 of 1% max.) aluminum
- Hood and housings: gray epoxy finish
- Reflectors: white baked enamel inside and gray epoxy outside

### Options

- Emergency battery pack. Suffix -EL.
- Fusing: ARS, AH and AVH fixtures supplied as standard with Class P ballasts with built-in protective device. Additional external fusing available at extra cost. Suffix -F.

### NEC/CEC Certifications and Compliances

- UL Standard: UL 1598, UL 844
- UL Listed: E10794
- CSA Standard: C22.2 No. 250, C22.2 No. 137
- CSA Certified: 65182



Explosionproof caps easily removed (shown with caps removed) for easy access. Allows quick wiring or relamping.

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Class III

	Lamp	Volts	Hub Size (Inches)	Temperature Rating	Supply Wire °C (°F)	Catalog Number ②
<b>Two Lamps</b>						
	<b>32 W</b>					
	Rapid Start	120-277 V, 50/60 Hz	3/4	T-6	60 (140)	ARS232-BU ①
	T8 Bi-Pin					
	1.22 m (4') 265MA	347 V, 60 Hz	3/4	T-6	60 (140)	ARS232-347 ③①
	<b>40 W</b>					
	Rapid Start	120-277 V, 50/60 Hz	3/4	T-6	60 (140)	ARS240-BU ①
	T12 Bi-Pin					
	1.22 m (4') 430MA	347 V, 60 Hz	3/4	T-6	60 (140)	ARS240-347 ③①
	<b>60 W</b>					
	Rapid Start High Output	120-277 V, 50/60 Hz	3/4	T-6	60 (140)	AH260-BU
T-12 Recessed Double Contact						
1.22 m (4') 800MA	347 V, 60 Hz	3/4	T-6	60 (140)	AH260-347 ③	
<b>110 W</b>						
Rapid Start VHO-SHO	120 V, 60 Hz	3/4	T-6	60 (140)	AVH210-118	
T-12 Recessed Double Contact	277 V, 60 Hz	3/4	T-6	60 (140)	AVH210-277	
1.22 m (4') 1500MA	347 V, 60 Hz	3/4	T-6	60 (140)	AVH210-347 ③	
<b>Three Lamps</b>						
	<b>32 W</b>					
	Rapid Start	120-277 V, 50/60 Hz	3/4	T-6	60 (140)	ARS332-BU ①
	T8 Bi-Pin					
	1.22 m (4') 265MA	347 V, 60 Hz	3/4	T-6	60 (140)	ARS332-347 ③①
	<b>40 W</b>					
	Rapid Start	120-277 V, 50/60 Hz	3/4	T-6	60 (140)	ARS340-BU
	T12 Bi-Pin					
	1.22 m (4') 430MA	347 V, 60 Hz	3/4	T-6	60 (140)	ARS340-347 ③
	<b>60 W</b>					
	Rapid Start High Output	120-277 V, 50/60 Hz	3/4	T-6	60 (140)	AH360-BU
T-12 Recessed Double Contact						
1.22 m (4') 800MA	347 V, 60 Hz	3/4	T-6	60 (140)	AH360-347 ③	
<b>Four Lamps</b>						
	<b>32 W</b>					
	Rapid Start	120-277 V, 50/60 Hz	3/4	T-6	60 (140)	ARS432-BU ①
	T8 Bi-Pin					
	1.22 m (4') 265MA	347 V, 60 Hz	3/4	T-6	60 (140)	ARS432-347 ③①
	<b>40 W</b>					
	Rapid Start	120-277 V, 50/60 Hz	3/4	T-6	60 (140)	ARS440-BU
	T12 Bi-Pin					
	1.22 m (4') 430MA	347 V, 60 Hz	3/4	T-6	60 (140)	ARS440-347 ③
	<b>60 W</b>					
	Rapid Start High Output	120-277 V, 50/60 Hz	3/4	T-6	60 (140)	AH460-BU
T-12 Recessed Double Contact						
1.22 m (4') 800MA	347 V, 60 Hz	3/4	T-6	60 (140)	AH460-347 ③	
<b>110 W</b>						
Rapid Start Very High Output	120 V, 60 Hz	3/4	T-6	60 (140)	AVH410-118	
T-12 Recessed Double Contact	277 V, 60 Hz	3/4	T-6	60 (140)	AVH410-277	
1.22 m (4') 1500MA	347 V, 60 Hz	3/4	T-6	60 (140)	AVH410-347 ③	
<b>Protector for two-lamp fluorescent fixture</b>						
	Fits two lamp 1.22 m (4') fixtures only (ARS, AH and AVH series) UV stabilized polycarbonate					EFP248
	Wire guard— use 1 piece for 2 lamp fixtures, 2 pieces for 4 lamp fixtures (not available for 3 lamp fixtures)					ARSGUSS

NOTE: In paint spray areas, solvents and thinners may "cloud" the polycarbonate. Light transmission characteristics may be reduced.

① For Emergency Battery Pack, add suffix **-EL**.

② Fluorescent lamps are not included. Supplied with automatic resetting dual protected "Class P" ballast. For additional external fusing, add suffix **-F**.

③ Certified to meet the Canadian Electrical Code (CEC) only.

# EFU Fluorescent Factory Sealed Luminaires

## Explosionproof, Dust-Ignitionproof

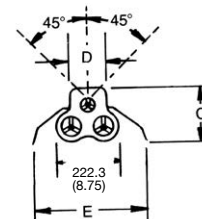
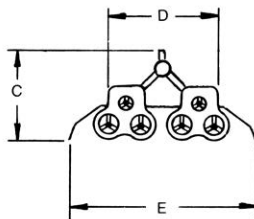
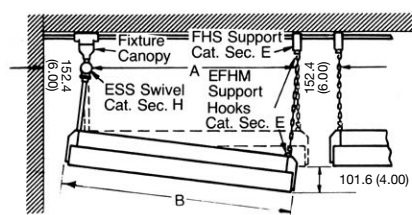
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**NEC/CEC:**

Class I, Division 1 and 2, Groups C, D  
 Class II, Division 1 and 2, Groups E, F, G  
 Class III

Lamps	Hz	Voltage	Operating Amps	Input Watts	Starting Temperature °C (°F)	Catalog Number
<b>32 W Rapid Start T-8 Bi-Pin 48" 265 mA</b>						
2	50/60	120-277	.52-.22	62-60	-18 (0)	ARS232-BU
2	60	347	.20	59	-18 (0)	ARS232-347 ①
3	50/60	120-277	.78-.33	93-93	-18 (0)	ARS332-BU
3	60	347	.30	86	-18 (0)	ARS332-347 ①
4	50/60	120-277	1.03-.43	124-120	-18 (0)	ARS432-BU
4	60	347	.40	118	-18 (0)	ARS432-347 ①
<b>40 W Rapid Start T-12 Bi-Pin 48" 430 mA</b>						
2	50/60	120-277	.70-.35	84-42	10 (50)	ARS240-BU
2	60	347	.30	96	10 (50)	ARS240-347 ①
3	50/60	120-277	.99-.45	114	10 (50)	ARS340-BU
3	60	347	.50	140	10 (50)	ARS340-347 ①
4	50/60	120-277	1.40-.70	168-84	10 (50)	ARS440-BU
4	60	347	.60	192	10 (50)	ARS440-347 ①
<b>60 W Rapid Start High Output T-12 Bi-Pin 48" 800 mA</b>						
2	50/60	120-277	1.05-.55	122-86	-29 (-20)	AH260-BU
2	60	347	.50	145	-29 (-20)	AH260-347 ①
3	50/60	120-277	1.54-.66	182	-29 (-20)	AH360-BU
3	60	347	.90	256	-29 (-20)	AH360-347 ①
4	50/60	120-277	2.10-1.10	244-172	-29 (-20)	AH460-BU
4	60	347	1.00	290	-29 (-20)	AH460-347 ①
<b>110 W Rapid Start VHO-SHO T-12 Bi-Pin 48" 1500 mA</b>						
2	60	120	2.60	300	-29 (-20)	AVH210-118
2	60	277	.98	250	-29 (-20)	AVH210-277
2	60	347	.90	250	-29 (-20)	AVH210-347 ①
4	60	120	5.20	600	-29 (-20)	AVH410-118
4	60	277	1.96	500	-29 (-20)	AVH410-277
4	60	347	1.80	500	-29 (-20)	AVH410-347 ①

**Dimensions in Millimeters (Inches)**



No. of Lamps	A	B	C	D	E
2	1184.4 (46.63)	1332.0 (52.44)	222.3 (8.75)	139.7 (5.50)	381.0 (15.00)
3	1184.4 (46.63)	1332.0 (52.44)	222.3 (8.75)	139.7 (5.50)	489.0 (19.25)
4	1184.4 (46.63)	1332.0 (52.44)	290.6 (11.44)	355.6 (14.00)	596.9 (23.50)

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\* Data is based on F32 TB Rapid Start Lamps. For other lamps use the following multipliers: 60 W Cool White – 1.50; and 110 W VHO – 2.19. Candlepower distribution curves and other coefficients of utilization tables are available on request.

### NEC/CEC:

Class I, Division 1 and 2, Groups C, D  
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Class III

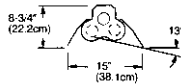
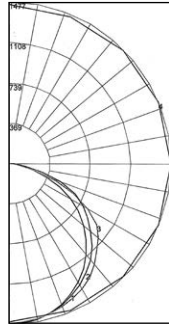
### Photometric Data

**Total Luminaire Efficiency = 78.6%**

Zone	Lumens	CIE Type – Direct			
		Plane	Spacing Criteria		
0-10	139.50	0-180	1.28		
10-20	402.70	90-270	1.36		
20-30	620.06	Diagonal	1.44		
30-40	767.75				
40-50	821.07				
50-60	776.93				
60-70	597.35				
70-80	299.18				
80-90	57.43				
90-100	0.00				
100-110	0.00				
110-120	0.00				
120-130	0.00				
130-140	0.00				
140-150	0.00				
150-160	0.00				
160-170	0.00				
170-180	0.00				

Zonal Lumen Summary				
Zone	Lumens	% Lamp	% Fixture	
0-30	1162.26	20.4	25.9	
0-40	1930.01	33.9	43.1	
0-60	3528.01	61.9	78.7	
0-90	4481.97	78.6	100.0	
90-120	0.00	0.0	0.0	
90-130	0.00	0.0	0.0	
90-150	0.00	0.0	0.0	
90-180	0.00	0.0	0.0	
0-180	4481.97	78.6	100.0	



REPORT NUMBER: **ARS232**

Lamps: Two 32 W Explosionproof Fluorescent with Reflector \*

### Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

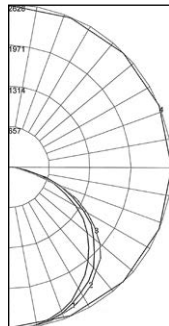
% Ceiling Rcc	% Walls	Rw	80				70				50				30				10				0
			70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10				
0	94	94	94	94	91	91	91	91	87	87	87	84	84	84	80	80	80	79	0				
1	86	82	78	75	83	80	77	74	77	74	72	74	72	70	71	69	68	66	0				
2	78	71	66	61	76	70	65	60	67	63	59	64	61	58	62	59	56	55	0				
3	71	62	56	51	69	61	55	50	59	53	49	56	52	48	54	51	47	46	0				
4	65	55	48	43	63	54	47	42	52	46	42	50	45	41	48	44	41	39	0				
5	59	49	42	36	58	48	41	36	46	40	36	45	40	35	43	39	35	33	0				
6	55	44	37	32	53	43	36	32	42	36	31	40	35	31	39	34	31	29	0				
7	51	40	33	28	49	39	32	28	38	32	28	37	31	27	36	31	27	25	0				
8	47	36	29	25	46	36	29	25	35	29	24	34	28	24	33	28	24	23	0				
9	44	33	27	22	43	33	26	22	32	26	22	31	26	22	30	25	22	20	0				
10	41	31	24	20	40	30	24	20	29	24	20	29	23	20	28	23	20	18	0				

**Total Luminaire Efficiency = 96.8%**

Zone	Lumens	CIE Type – Direct			
		Plane	Spacing Criteria		
0-10	249.94	0-180	1.26		
10-20	726.14	90-270	1.38		
20-30	1122.12	Diagonal	1.46		
30-40	1392.92				
40-50	1496.9				
50-60	1397.8				
60-70	1087.36				
70-80	557.01				
80-90	103.54				
90-100	0.00				
100-110	0.00				
110-120	0.00				
120-130	0.00				
130-140	0.00				
140-150	0.00				
150-160	0.00				
160-170	0.00				
170-180	0.00				

Zonal Lumen Summary				
Zone	Lumens	% Lamp	% Fixture	
0-30	2098.20	25.0	25.8	
0-40	3491.12	41.6	42.9	
0-60	6385.81	76.0	78.5	
0-90	8133.73	96.8	100.0	
90-120	0.00	0.0	0.0	
90-130	0.00	0.0	0.0	
90-150	0.00	0.0	0.0	
90-180	0.00	0.0	0.0	
0-180	8133.73	96.8	100.0	



REPORT NUMBER: **ARS332**

Lamps: Three 32 W Explosionproof Fluorescent with Reflector \*

### Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

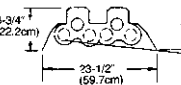
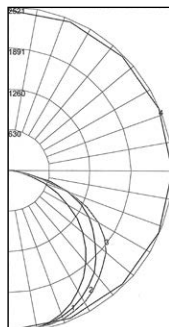
% Ceiling Rcc	% Walls	Rw	80				70				50				30				10				0
			70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10				
0	115	115	115	115	113	113	113	113	108	108	108	103	103	103	99	99	99	97	0				
1	105	101	97	93	103	99	95	91	94	91	88	91	88	86	87	85	83	81	0				
2	96	87	81	75	93	86	80	74	82	77	73	79	75	71	76	72	69	67	0				
3	87	77	69	62	84	75	68	62	72	66	60	69	64	59	67	62	58	56	0				
4	79	68	59	52	77	66	58	52	64	57	51	62	55	50	59	54	50	48	0				
5	73	60	51	45	71	59	51	45	57	50	44	55	49	44	53	48	43	41	0				
6	67	54	45	39	65	53	45	39	51	44	38	50	43	38	48	42	38	36	0				
7	62	49	40	34	60	49	40	34	47	39	34	45	38	34	44	38	33	31	0				
8	58	44	36	30	56	44	36	30	42	35	30	41	35	30	40	34	30	28	0				
9	54	41	33	27	53	40	32	27	39	32	27	38	31	27	37	31	27	25	0				
10	50	38	30	25	49	37	30	25	36	29	24	35	29	24	34	28	24	22	0				

**Total Luminaire Efficiency = 70.9%**

Zone	Lumens	CIE Type – Direct			
		Plane	Spacing Criteria		
0-10	237.58	0-180	1.28		
10-20	692.75	90-270	1.42		
20-30	1081.02	Diagonal	1.48		
30-40	1352.75				
40-50	1467.39				
50-60	1408.53				
60-70	1130.45				
70-80	598.78				
80-90	117.42				
90-100	0.00				
100-110	0.00				
110-120	0.00				
120-130	0.00				
130-140	0.00				
140-150	0.00				
150-160	0.00				
160-170	0.00				
170-180	0.00				

Zonal Lumen Summary				
Zone	Lumens	% Lamp	% Fixture	
0-30	2011.34	17.6	24.9	
0-40	3364.10	29.5	41.6	
0-60	6240.02	54.7	77.2	
0-90	8086.66	70.9	100.0	
90-120	0.00	0.0	0.0	
90-130	0.00	0.0	0.0	
90-150	0.00	0.0	0.0	
90-180	0.00	0.0	0.0	
0-180	8086.66	70.9	100.0	



REPORT NUMBER: **ARS432**

Lamps: Four 32 W Explosionproof Fluorescent with Reflector \*

### Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

% Ceiling Rcc	% Walls	Rw	80				70				50				30				10				0
			70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10				
0	84	84	84	84	82	82	82	82	79	79	79	75	75	75	72	72	72	71	0				
1	77	74	70	68	75	72	69	67	69	67	64	66	64	62	64	62	61	59	0				
2	70	64	59	55	68	62	58	54	60	56	53	57	54	51	55	53	50	49	0				
3	63	56	50	45	62	54	49	44	52	48	44	50	46	43	48	45	42	41	0				
4	58	49	43	38	56	48	42	37	46	41	37	45	40	36	43	39	36	34	0				
5	53	44	37	32	51	43	37	32	41	36	32	40	35	31	38	34	31	29	0				
6	49	39	33	28	47	38	32	28	37	32	27	36	31	27	35	30	27	25	0				
7	45	35	29	24	44	35	29	24	34	28	24	33	28	24	32	27	24	22	0				
8	42	32	26	22	41	32	26	22	31	25	21	30	25	21	29	24	21	20	0				
9	39	29	23																				