

## DESCRIPTION

The Fail-Safe FRS-4 high abuse, rough service fluorescent luminaire is available with four lamps and has a built-in reflector, snap-in wireway and wraparound polycarbonate diffuser. Stem mounting is available on 4' fixture. Fixture is serviceable without the use of tools. U.L. listed for damp locations.

The FRS-4 is ideal for use in schools, corridors, dormitories and commercial high traffic areas.

Catalog #		Type
Project		
Comments		Date
Prepared by		

## SPECIFICATION FEATURES

### A ... Construction

Housing is 20 gauge cold rolled steel. Removable reflector/wireway cover 20 gauge cold rolled steel. Endcaps are 18 gauge cold rolled steel with knockouts in the ends. Fixture can be entered without tools.

### B ... Electrical

Ballasts are CBM/ETL Class "P" and positively secured on both ends. Pressure lock lampholders assure good lamp/holder connection.

### C ... Finish

Electrostatically applied baked white polyester powder coat finish. Minimum reflectance 90%. Multistage cleaning cycle, iron phosphate coating with rust inhibitor. Conveyorized application and curing time accurately controlled at an elevated temperature.

### D ... Lens

Prismatic polycarbonate .125 refractor provides high efficiency while maintaining low surface brightness. Wraparound design ensures superior strength and resistance to vandalism and the elements.

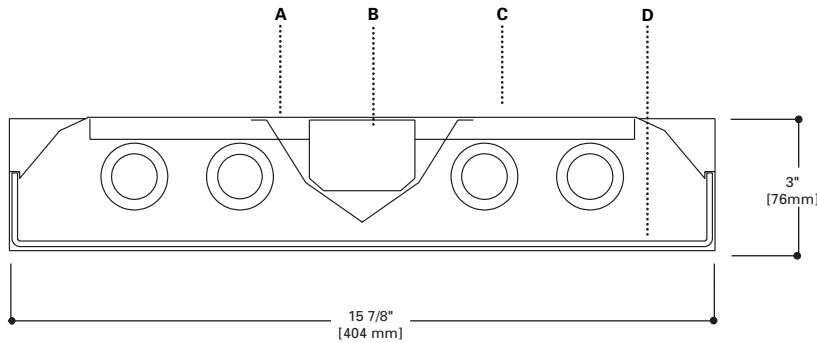
### Labels

U.L. listed, C.S.A. certified. Standard damp label.

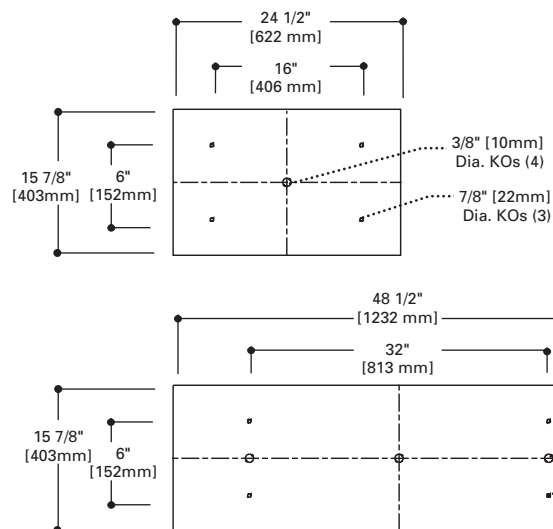


**FRS**  
417  
420  
432  
440

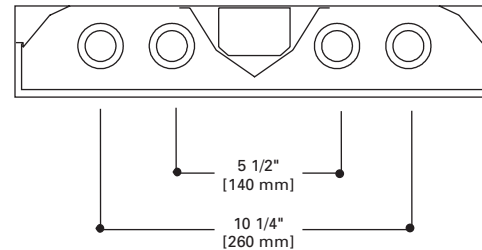
2' Length  
4' Length  
**FLUORESCENT**  
**SURFACE MOUNT**  
**ROUGH SERVICE**  
**LUMINAIRE**  
4 Lamps



## MOUNTING DATA



## LAMP CONFIGURATION



## ENERGY DATA

### STD Ballasts & STD Lamps

420 (106 Watts)

### ES Ballasts & STD Lamps

417 (90 Watts)

432 (142 Watts)

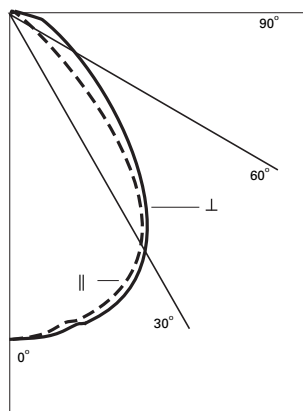
440 (172 Watts)

### ES Ballasts & ES Lamps

440 (152 Watts)

### Electronic Ballasts

Consult Cooper Lighting Representative.



**Coefficients of Utilization**

rc	Effective floor cavity reflectance																							
	80%				70%				50%				30%				10%				0%			
rw	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
<b>RCR</b>																								
0	68	68	68	68	67	67	67	67	63	63	63	60	60	60	57	57	57	56	56	56	56	56	56	56
1	63	61	58	56	61	59	57	55	56	55	53	54	52	51	51	50	49	48	48	48	48	48	48	48
2	58	54	51	48	57	53	50	47	50	48	46	48	46	44	46	44	43	42	42	42	42	42	42	42
3	54	49	45	41	52	48	44	41	46	42	40	44	41	39	42	40	38	37	37	37	37	37	37	37
4	50	44	39	36	49	43	39	36	41	38	35	40	37	34	38	36	33	32	32	32	32	32	32	32
5	46	39	35	31	45	39	34	31	37	33	31	36	33	30	35	32	29	28	28	28	28	28	28	28
6	43	36	31	28	42	35	31	28	34	30	27	33	29	27	32	29	26	25	25	25	25	25	25	25
7	40	33	28	25	39	32	28	24	31	27	24	30	26	24	29	26	23	22	22	22	22	22	22	22
8	37	29	25	22	36	29	25	21	28	24	21	27	24	21	26	23	21	20	20	20	20	20	20	20
9	34	27	22	19	33	26	22	19	25	21	19	24	21	18	24	21	18	17	17	17	17	17	17	17
10	32	24	20	17	31	24	20	17	23	19	17	22	19	16	22	19	16	15	15	15	15	15	15	15

**Candlepower**

Angle	Along ll	45°	Across ll
0	2852	2852	2852
10	2655	2862	2870
20	2739	2766	2807
30	2242	2318	2365
40	1645	1665	1799
50	999	1057	1203
60	502	536	760
70	233	329	553
80	180	253	453
90	0	104	253
100	0	59	149
110	0	40	95
120	0	32	67
130	0	29	50
140	0	29	40
150	0	28	35
160	0	25	28
170	0	3	8
180	0	0	0

**FRS-432-120**

(4) F32T8/735/RS Lamps  
2850 Lumens each

Efficiency: 58%

Plane: 0° 90°  
Spacing Criteria: 1.2 1.2

Report # 8038.0

**Zonal Lumen Summary**

Zone	Lumens	%Lamp	%Fixture
0- 30	2235	19.6	33.8
0- 40	3509	30.8	53.1
0- 60	5347	46.9	81.0
0- 90	6336	55.6	95.9
90-180	268	2.3	4.1
0-180	6603	57.9	100.0

**ORDERING INFORMATION**

SAMPLE NUMBER: FRS-440-120

Product Family	Lamp Type	Voltage <sup>2</sup>	Ballast	Options
<b>FRS</b>				
FRS=Fluorescent Rough Service	2' 417=(4) 17W T8 Lamps 420 <sup>1</sup> =(4) 20W T12 Lamps 440BX=(4) 40W Biaxial Lamps  4' 432=(4) 32W T8 Lamps 440=(4) 40W T12 Lamps	120=120V 277=277V 347=347V	LE3 = Energy Saving ballast for T12 lamps LEOC8=Energy Saving ballast for T8 lamp  <b>Electronic Ballast</b> EB81=(1) Ballast for T8 lamps EB82=(2) Ballast for T8 lamps EB21=(1) Ballast for T12 lamps EB22=(2) Ballast for T12 lamps EBX1=(1) Ballast for use with biaxial lamps EBX2=(2) Ballast for use with biaxial lamps	GLR=Single Fuse TRC=Tamper Resistant EBP=Emergency Battery Pack RIF=Radio Interference Filter FNL= Fluorescent Night Light (lamp provided by others)

**NOTES:**

For additional options consult Cooper Lighting Representative. Specifications and Dimensions subject to change without notice.

<sup>1</sup>Electronic ballast not available, magnetic only.

<sup>2</sup>Products also available in non-US voltages and 50Hz for international markets. Consult your Cooper Lighting Representative for availability and ordering information.

**SHIPPING INFORMATION**

Catalog Number	Weight
FRS-417	20 lbs.
FRS-420	20 lbs.
FRS-432	29 lbs.
FRS-440	29 lbs.