

DESCRIPTION

Designed to retain the aesthetics of a commercial wraparound, the FWS ensures an unbreakable, maintenance-free, one-time installation. Ideally suited for high abuse areas that must maintain a clean, well-lit appearance, Fail-Safe's FWS comes as ceiling- or wall-mounted, one to four lamp units to provide general ambient illumination. Specifically designed for use in public access areas where vandalism may occur and for areas that must maintain a clean, well-lit appearance. Ideal for schools, dormitories, hallways, locker rooms, shower facilities, and restrooms.

SPECIFICATION FEATURES

Fasteners

Captive, stainless steel tamperproof, T20 TORX®-head screws prevent unauthorized access.

Housing

Die-formed 16 ga. CRS with welded and ground ends and internal weld bands for added strength.

Finish

High gloss, electrostatically applied, white powder coat finish, average minimum reflectance 92%.

Gasket

Concealed, polyurethane end gaskets inhibit the entrance of environmental contaminants.

Lens

Nominal 0.156, UV stabilized, clear K12, impact-resistant, prismatic polycarbonate refractor for high efficiency, low surface brightness and maximum strength.

Lamps

By others.

Lens Retention

Double wall lens channel captivates lens to prevent unauthorized fixture penetration.

Ballast

Electronic Class P, CBM/ETL ballast.

Labels

UL/cUL listed for wet locations, under covered ceiling.

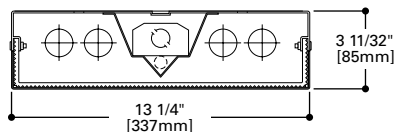
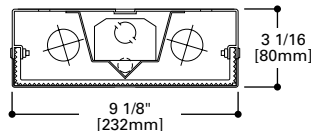


FWS

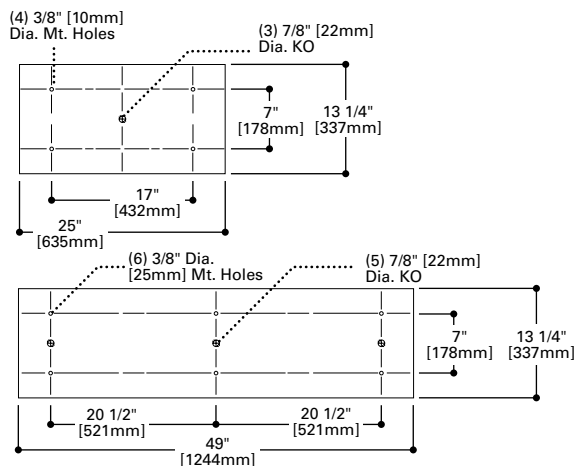
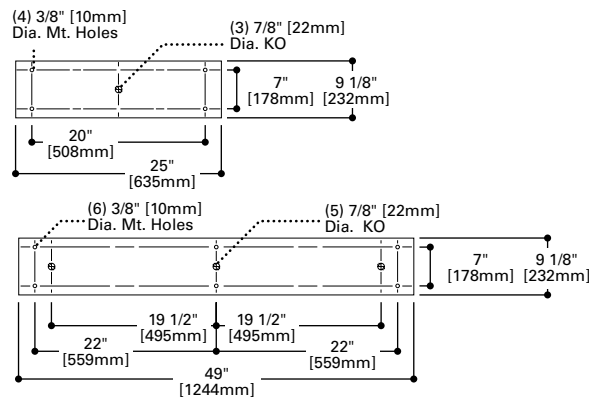
2' and 4' Length
T5
T8
Fluorescent
Vandal Resistant

SURFACE MOUNT
SURFACE
2 & 4 Lamp

SIDE DIMENSIONS



MOUNTING DIMENSIONS



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ENERGY DATA

For Energy Management related technical data to support the performance of this fixture series, refer to the ordering information for input wattage.

ORDERING INFORMATION

SAMPLE NUMBER: FWS-432-UNV-EB81-GLR

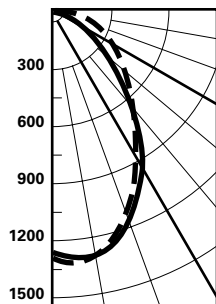
Product Family	Lamp Type	Voltage ²	Ballast	Options	Accessories (order separately)
FWS					
FWS =High Abuse Surface Luminaire	2' Fixture ^{5, 6} 214 =(2) 14WT5 Lamps 224 =(2) 24W T5HO Lamps 217 =(2) 17W T8 Lamps 417 =(4) 17W T8 Lamps 240BX =(2)40W Biaxial Lamps 440BX =(4) 40W Biaxial Lamps 4' Fixture 228 =(2) 28W T5 Lamps 232 =(2) 32W T8 Lamps 254 =(2) 54W T5HO Lamps 428 =(4) 28W T5 Lamps 432 =(4) 32W T8 Lamps	120 =120V 277 =277V 347 =347V UNV =120V-277V Electronic Ballast ¹ EB81 =(1) Ballast for use with T8 Lamp EB82 =(2) Ballasts for use with T8 Lamp EBX1 =(1) Ballast for use with Biaxial Lamp EBX2 =(2) Ballasts for use with Biaxial Lamp EB51 =(1) Ballast for use with T5 Lamp EB52 =(2) Ballasts for use with T5 Lamp	EL4 =EM Pack, T8, Biax EL5 =EM Pack, T5, T5HO ELR =End Lens Retention FNL =Fluorescent Night Light (5, 7 or 9W) ³ FNL13 =Fluorescent Night Light (13Watt - lamp by others) ³ GLR =Fuse and Holder OPL =Opal Diffuser SPS =Security Push Button On/Off Switch ⁴ SHN =Stainless Steel Housing, Brushed	VRSD =T20 Center Pin Tamperproof TORX ® - head screwdriver	

Notes:

¹ For specific electronic ballast, specify brand and catalog number.² Products also available in non-US voltages and 50Hz for international markets. Consult your Cooper Lighting Representative for availability and ordering information.³ Specify voltage.⁴ 120V only.⁵ 2' unit not available with EM Pack.⁶ 2' unit not available with (2) T5 or T5HO ballasts.

PHOTOMETRICS

Candlepower Distribution



Test No. 1824
FWS-240
 Lamp=(2) F40T12RS/
 WW
 Lumens=3200
 Spacing Criteria
 $\perp=1.1$ $\parallel=1.1$
 Efficiency=40.2%

\perp
 \parallel

Candlepower

Deg.	\perp	\parallel
0	1291	1291
5	1293	1296
15	1207	1213
25	1061	1073
35	777	829
45	476	414
55	375	192
65	299	77
75	260	50
85	181	16
90	141	0

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Luminaire
0-30	961	15.0	37.4
0-40	1460	22.8	56.8
0-60	2008	31.4	78.1
0-90	2425	37.9	94.3
90-180	146	2.3	5.7
0-180	2571	40.2	100.0

Coefficient of Utilization

rc	80%				70%			50%		30%		10%		0%
	70	50	30	10	50	30	10	50	10	50	10	50	10	0
RCR														
0	47	47	47	47	46	46	46	43	43	47	47	39	39	38
1	44	42	40	39	41	39	38	39	36	37	35	35	34	33
2	40	37	35	33	36	34	32	35	31	33	30	32	29	28
3	37	34	31	29	33	30	28	31	27	30	27	29	26	25
4	35	31	27	25	30	27	25	29	24	27	24	26	23	22
5	32	28	24	22	27	24	22	26	21	25	21	24	21	20
6	30	25	22	20	25	22	20	24	19	23	19	22	19	18
7	28	23	20	18	23	20	18	22	17	21	17	20	17	16
8	26	21	18	16	21	18	16	20	15	19	15	19	15	14
9	24	19	16	14	19	16	14	18	14	18	14	17	13	13
10	23	18	15	13	17	14	13	17	12	16	12	16	12	11

rc=Ceiling reflectance, rw=Wall reflectance, RCR=Room cavity ratio

CU Data Based on 20% Effective Floor Cavity Reflectance.