

OFG and OFGR Over-the-Top Foam Generators

Description

Over-the-Top Foam Generators are air aspirated discharge devices that are installed on the outside wall of liquid storage tanks above the level of the stored product. They produce and inject foam onto the liquid surface.

SKUM manufactures two types of Over-the-Top Foam Generators, depending on the storage tank construction type. SKUM can supply the OFG and OFGR models to a range of performance specifications and multiple build options. OFG and OFGR foam generators produce foam with expansion ratios of up to 4:1, depending on the foam concentrate type and capacity requirements.

The OFG standard models consist of a stainless steel body with a removable back cover, brass nozzle, gas stop, and hot-dipped galvanized slip-on inlet and outlet flanges. A stainless steel FIH (foam inlet head) foam pourer with a carbon steel weld-on flange is designed for use with the OFG and is available as part of a package or sold separately. The FIH directs the foam from the OFG foam generator down the side of the tank to reduce the submergence of the foam and agitation of the fuel surface.

The OFGR standard models consist of a stainless steel body with a weld-on back cover, brass nozzle, and hot-dipped galvanized slip-on inlet flange. The body of the OFGR includes the foam pourer that can be mounted to the top flange of the fuel storage tank. The OFGR T models have a removable back cover for access during testing.

A separate test plug is available for use with the OFG and OFGR T models. This plug enables testing without discharging foam into the storage tank.

Both the OFG and OFGR models are available in two standard sizes; DIN 50 and DIN 100, with a PN16 or ANSI Class 150 flanged foam or water inlet connection.

Features

- The size and capacity are designed to meet the requirements of EN 13565-2:2009 and NFPA 11:2015
- FM Approved
- Stainless steel body construction with a brass nozzle
- Factory calibrated to the customer specified flow and pressure within the working range
- Epoxy painted red RAL 3002
- Test plug available



Approvals and Listings

- KFSD (Kuwait)
- FM Approval – FM 5130

Note: The SKUM OFG and OFGR foam generators are only FM Approved in conjunction with the specific foam concentrates and equipment shown in the Approval Guide (www.ApprovalGuide.com).



Application

The OFG and OFGR foam generators are defined by NFPA 11 as Type II discharge outlets for delivering foam onto the surface of a flammable liquid. They are commonly used with bladder tanks, balanced pressure pump proportioning systems, line proportioners, or foam trucks. The generators can be used with SKUM low-expansion foam agents that are determined to be suitable for the hazard being protected.

The OFG can be used to protect various types of flammable liquid storage tanks including open-top floating roof tanks and cone roof tanks with or without internal floaters. Additional applications include most types of open tanks involving flammable liquid products.

The OFGR is designed to protect floating roof, flammable liquid storage tanks. The tanks must be open-top constructions with either a double deck or pontoon type floating roof.

To select the appropriate performance characteristics, refer to NFPA 11, EN 13565-2, and specific local regulations.

Ordering Information

When ordering, specify the following information:

- Part number
- Capacity: flow and pressure

| Part No. | Description | Approvals |
|-----------|--|-----------|
| 141305143 | OFG-50 T, stainless steel nozzle and gas plug, stainless steel flanges | FM |
| 141305145 | OFG-50 T, stainless steel nozzle and gas plug, galvanized flanges | FM |
| 141305148 | OFG-50 T, galvanized flanges | FM |
| 141305136 | OFG-50 T, stainless steel flanges | FM |
| 141210205 | FIH-100 ANSI | - |
| 141210106 | FIH-100 DIN | - |
| 141210809 | FIH-100 mounting kit | - |
| 141305172 | OFG-100 T, galvanized flanges | FM |
| 141305160 | OFG-100 T, stainless steel flanges | FM |
| 141305167 | OFG-100 T, stainless steel nozzle and gas plug, stainless steel flanges | FM |
| 141305169 | OFG-100 T, stainless steel nozzle and gas plug, galvanized flanges | FM |
| 141215104 | FIH-150 DIN/ANSI | - |
| 141215808 | FIH-150 mounting kit | - |
| 141005368 | OFGR-50 T, galvanized flange | FM |
| 141005382 | OFGR-50 T, stainless steel flange | FM |
| 141006396 | OFGR-50 T, stainless steel nozzle and gas plug, stainless steel flanges | FM |
| 141005405 | OFGR-50 T, stainless steel nozzle and gas plug, galvanized flanges | FM |
| 141010426 | OFGR-100 T, galvanized flange | FM |
| 141010440 | OFGR-100 T, stainless steel flange | FM |
| 141010454 | OFGR-100 T, stainless steel nozzle and gas plug, stainless steel flanges | FM |
| 141010461 | OFGR-100 T, stainless steel nozzle and gas plug, galvanized flanges | FM |
| 141325801 | OFG-50 / OFGR-50 test plug | - |
| 141325802 | OFG-100 / OFGR-100 test plug | - |



FIGURE 1
OVER-THE-TOP FOAM GENERATOR INSTALLATION

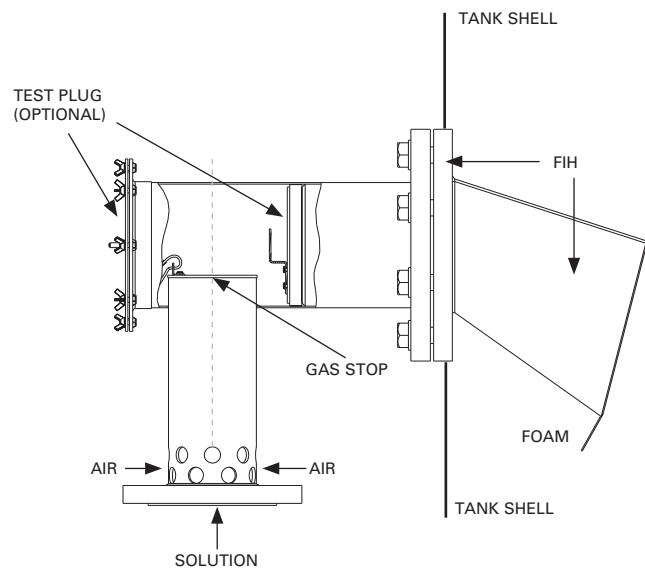


FIGURE 2
OVER-THE-TOP FOAM GENERATOR

OFG and FIH Specifications

FM Approved flow and pressure ranges vary by foam concentrate. Consult the FM Approval Guide for specific agent ranges. The flow rate of the OFG foam generator is determined by the orifice size and the inlet pressure. To determine flow rates for specific applications and correct orifice sizing, consult Johnson Controls Technical Services.

| | | OFG-50 and FIH-100 | OFG-100 and FIH-150 |
|----------------------------------|---------------|--|--|
| Typical solution capacity | | 100 Lpm to 700 Lpm (26 gpm to 185 gpm) | 700 Lpm to 3,000 Lpm (185 gpm to 793 gpm) |
| Working pressure range | | 4 bar to 16 bar (58 psi to 232 psi) | 4 bar to 16 bar (58 psi to 232 psi) |
| Metric K-factor range | | 61 to 365 | 180 to 1,575 |
| Weight | | 20 kg (44 lb) | 32 kg (71 lb) |
| Connections | OFG | 50 DIN PN16 and 2 in. ANSI Class 150 | 100 DIN PN16 and 4 in. ANSI Class 150 |
| | FIH | To fit 100 DIN PN16 | To fit 150 DIN PN16 and 6 in. ANSI Class 150 |
| Expansion ratio | | Up to 4:1 | |
| Material – OFG | Body | Stainless steel | |
| | Nozzle | Brass or stainless steel | |
| | Flange | Galvanized steel or stainless steel | |
| Material – FIH | Body | Stainless steel | |
| | Flange | Carbon steel | |

| Model OFG FM Approved performance parameters | | FM Approved orifice size range mm (in.) | | Metric K-factor range | | FM Approved pressure range* bar (psi) | | FM Approved flow range Lpm (gpm) | |
|--|------------------------------------|---|------------|--------------------------|---------|---|--------------|-------------------------------------|-------------------|
| Model | FM Approved foam concentrate | | | | | Minimum | Maximum | Minimum | Maximum |
| OFG-50 | AFFF 3% UG | 5.5 (0.2) | 10.1 (0.4) | 58.9 | 198.7 | 8.0 (116.0) | 10.0 (145.0) | 166.7 (44.0) | 628.4 (166.0) |
| | | 5.5 (0.2) | | 58.9 | | 5.0 (72.5) | 10.0 (145.0) | 131.8 (34.8) | 186.3 (49.2) |
| OFG-50 | AR-AFFF 3x3 UG | 5.5 (0.2) | 13.4 (0.5) | 58.9 | 349.8 | 4.0 (58.0) | 10.0 (145.0) | 117.9 (31.1) | 1,106.1 (292.2) |
| OFG-100 | AFFF 3% UG | 8.5 (0.3) | 24.9 (1.0) | 174.8 | 1,499.9 | 8.0 (116.0) | 8.0 (116.0) | 494.4 (130.6) | 4,242.3 (1,120.7) |
| | | 8.5 (0.3) | | 174.8 | | 6.0 (87.0) | 10.0 (145.0) | 428.1 (113.1) | 552.7 (146.0) |
| OFG-100 | AR-AFFF 3x3 UG | 8.5 (0.3) | 24.9 (1.0) | 174.8 | 1,499.9 | 4.0 (58.0) | 8.0 (116.0) | 349.6 (92.4) | 4,242.3 (1,120.7) |
| | | 8.5 (0.3) | | 174.8 | | 4.0 (58.0) | 10.0 (145.0) | 349.6 (92.4) | 552.7 (146.0) |

Note: *The pressure required to achieve the required flow depends on the orifice size selection. Contact Johnson Controls Technical Services for assistance with orifice sizing.

OFGR and OFGR T Specifications

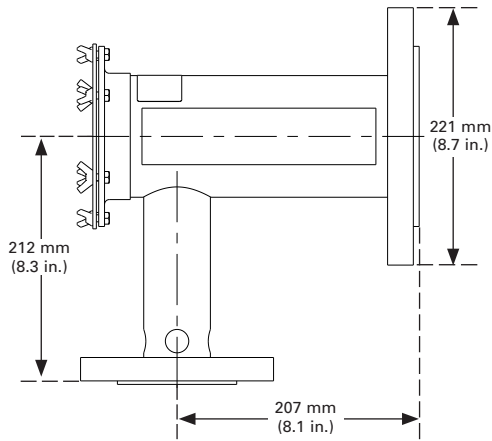
FM Approved flow and pressure ranges vary by foam concentrate type. Consult the FM Approval Guide for specific agent ranges. The flow rate of the OFGR foam generator is determined by the orifice size and the inlet pressure. To determine flow rates for specific applications and proper orifice sizing, consult Johnson Controls Technical Services.

| | | OFGR-50 T | OFGR-100 T |
|----------------------------------|---------------|--|---|
| Typical solution capacity | | 100 Lpm to 700 Lpm (26 gpm to 185 gpm) | 700 Lpm to 3,000 Lpm (185 gpm to 793 gpm) |
| Working pressure range | | 4 bar to 16 bar (58 psi to 232 psi) | 4 bar to 16 bar (58 psi to 232 psi) |
| Metric K-factor range | | 25 to 336 | 175 to 1,570 |
| Weight | OFGR | 13 kg (29 lb) | 21 kg (46 lb) |
| | OFGR T | 14 kg (31 lb) | 22 kg (49 lb) |
| Connection | | 50 DIN PN16 and 2 in. ANSI Class 150 | 100 DIN PN16 and 4 in. ANSI Class 150 |
| Expansion ratio | | Up to 4:1 | |
| Material | Body | Stainless steel | |
| | Nozzle | Brass or stainless steel | |
| | Flange | Galvanized steel or stainless steel | |

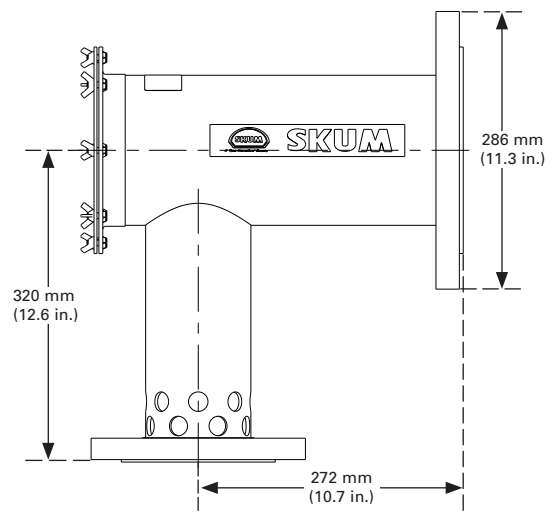
| Model OFGR FM Approved performance parameters | | FM Approved orifice size range mm (in.) | | Metric K-factor range | | FM Approved pressure range* bar (psi) | | FM Approved flow range Lpm (gpm) | |
|---|------------------------------|---|------------|-----------------------|---------|---------------------------------------|--------------|----------------------------------|-------------------|
| Model | FM Approved foam concentrate | | | | | Minimum | Maximum | Minimum | Maximum |
| OFGR-50 | AFFF 3% UG | 3.6 (0.1) | 10.1 (0.4) | 25.2 | 198.7 | 7.0 (101.5) | 10.0 (145.0) | 66.8 (17.6) | 628.4 (166.0) |
| | | 3.6 (0.1) | | 25.2 | | 4.0 (58.0) | 10.0 (145.0) | 50.5 (13.3) | 79.8 (21.1) |
| OFGR-50 | AR-AFFF 3x3 UG | 3.6 (0.1) | 13.4 (0.5) | 25.2 | 349.8 | 4.0 (58.0) | 10.0 (145.0) | 50.5 (13.3) | 1,106.1 (292.2) |
| OFGR-100 | AFFF 3% UG | 8.5 (0.3) | 17.5 (0.7) | 174.8 | 740.9 | 6.9 (100.1) | 6.9 (100.1) | 459.1 (121.3) | 1,946.1 (514.1) |
| | | 8.5 (0.3) | | 174.8 | | 4.0 (58.0) | 10.0 (145.0) | 349.6 (92.2) | 552.7 (146.0) |
| OFGR-100 | AR-AFFF 3x3 UG | 8.5 (0.3) | 24.9 (1.0) | 174.8 | 1,499.9 | 4.0 (58.0) | 7.0 (101.5) | 349.6 (92.2) | 3,968.3 (1,048.3) |
| | | 8.5 (0.3) | | 174.8 | | 4.0 (58.0) | 10.0 (145.0) | 349.6 (92.2) | 552.7 (146.0) |

Note: * The pressure required to achieve the required flow depends on the orifice size selection. Contact Johnson Controls Technical Services for assistance with orifice sizing.

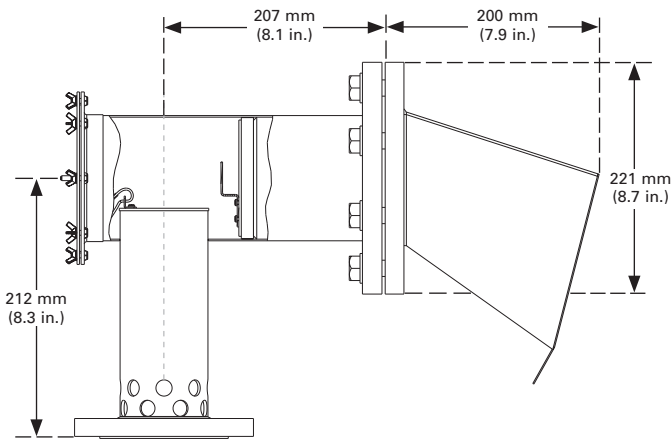
OFG and FIH Dimensions



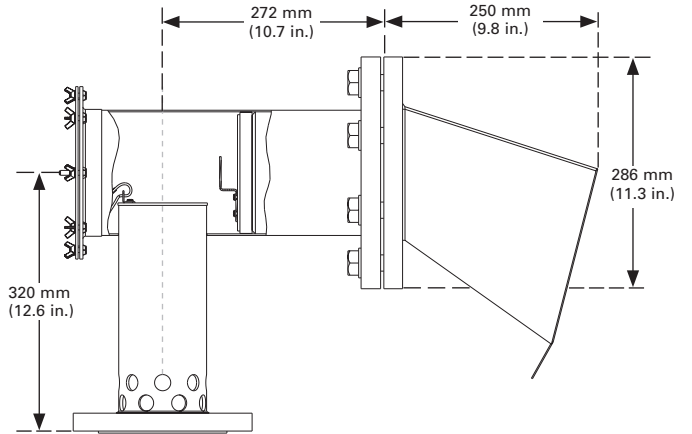
OFG-50



OFG-100



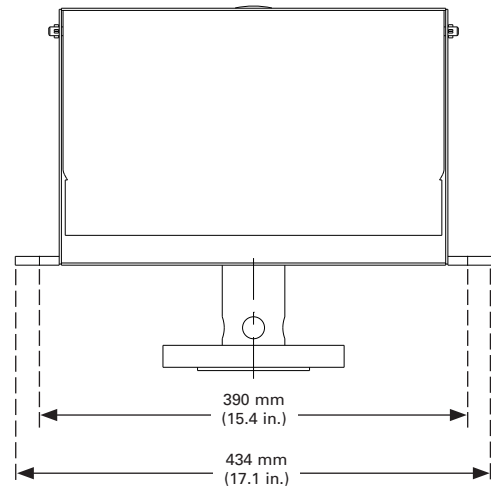
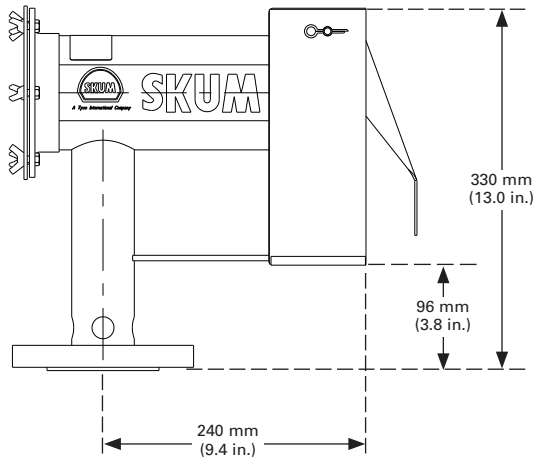
FIH-100



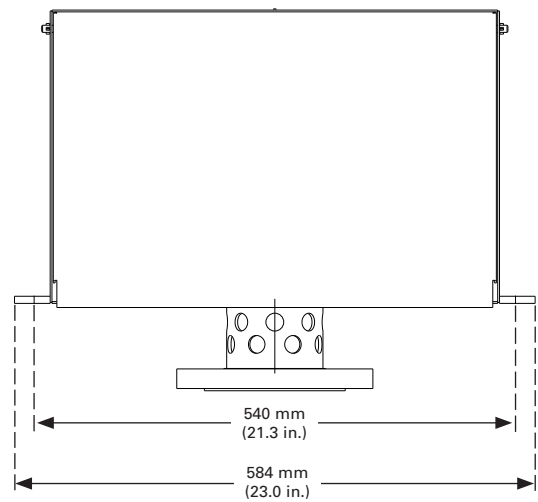
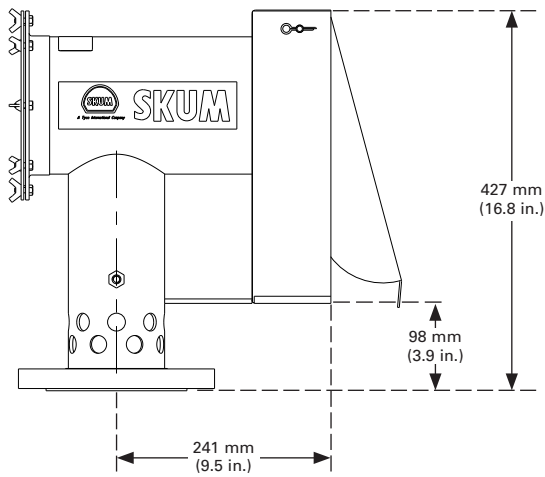
FIH-150

**FIGURE 3
OFG AND FIH DIMENSIONS**

OFGR Dimensions



OFGR-50



OFGR-100

**FIGURE 4
OFGR DIMENSIONS**

Note: The converted values in this document are provided for dimensional reference only and do not reflect an actual measurement.

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