



# GA Series

## Clean Agent Fire Suppression Systems

3M™ Novec™ 1230 Fire Protection  
Fluid or HFC-227ea

### **FIREBOY** automatic fire suppression system benefits:

- ▶ Often detects and suppresses a fire before you know
- ▶ Automatic or manual operation
- ▶ Peace of mind

### **3M™ NOVEC™ 1230 FIRE PROTECTION FLUID**

- ▶ Class B fire coverage from 600 - 4,000 ft.<sup>3</sup> for engine rooms, machinery spaces, and other enclosed spaces for Class B fires
- ▶ Factory Mutual / USCG / CE / RINA / BV approved
- ▶ Low Global Warming Potential (GWP <1)
- ▶ Low toxicity in properly designed system
- ▶ No damage to sensitive equipment
- ▶ Not targeted for emission reduction or phase-out
- ▶ 3M™ Blue Sky™ warranty - 20 year protection against environmental regulation



### **HFC-227ea CLEAN AGENT**

- ▶ Class B fire coverage from 600 - 3,000 ft.<sup>3</sup> for engine rooms, machinery spaces, and other enclosed spaces for Class B fires
- ▶ Factory Mutual / USCG / CE / RINA / BV approved
- ▶ Low toxicity in properly designed system
- ▶ No damage to sensitive equipment

# SAFETY

**FIREBOY® - XINTEX®**  
A Darley Company



[FIREBOY-XINTEX.COM](http://FIREBOY-XINTEX.COM)

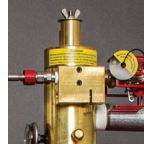
Grand Rapids, Michigan / Poole, England





## GA PRE-ENGINEERED SERIES ADVANTAGES

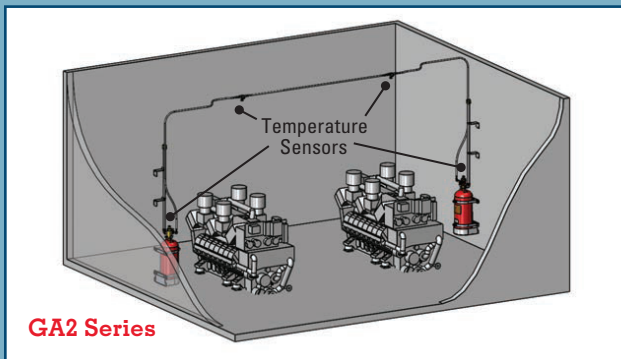
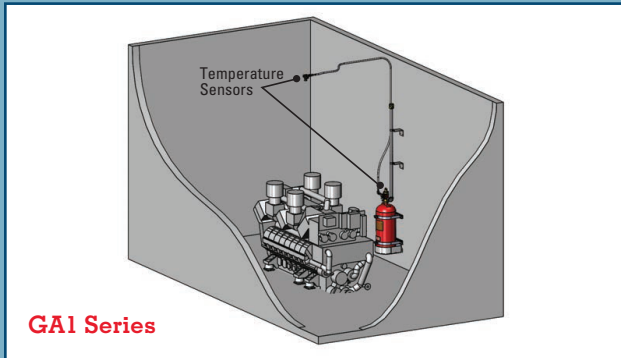
- ▶ Simplified installation compared to engineered systems
- ▶ System can be installed inside or outside the protected space
- ▶ Cylinder can be mounted close to the floor (2 in. minimum) with piped nozzle within 24 in. of ceiling
- ▶ Near-simultaneous release of both cylinders
- ▶ Less costly than engineered systems
- ▶ System approvals available electronically and eliminates traditional on-site inspections
- ▶ All system components backed by the Fireboy-Xintex 3 year limited warranty against leaks and defects in materials and workmanship
- ▶ Heavy-duty bracket required for USCG approval



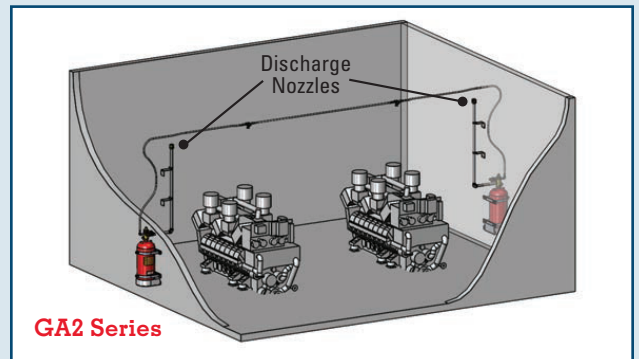
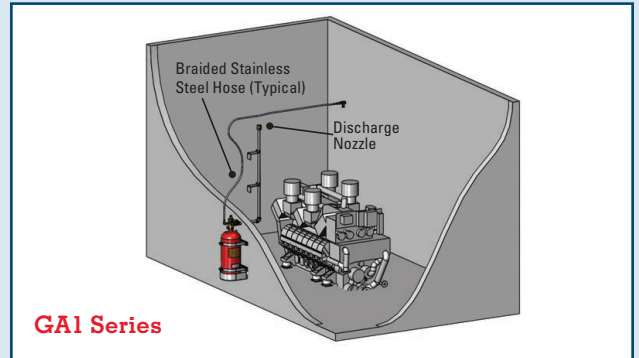
- ▶ Patented safety lockout design prevents costly accidental discharge and injury during installation or service

## GA1 & GA2 APPROVED INSTALLATIONS

### CYLINDERS LOCATED INSIDE OF THE PROTECTED SPACE



### CYLINDERS LOCATED OUTSIDE OF THE PROTECTED SPACE



APPROVED INSTALLATIONS FOR USCG INSPECTED VESSELS UP TO 2,000 ft<sup>3</sup> ONLY



## GA SERIES SYSTEM COMPONENTS



### GA LINK FEATURES

- ▶ Quick disconnect with double check valve for ease of installation (fig. A)
- ▶ Pressure gauge located at each sensor block
- ▶ Connections with up to 3 hoses and 2 sensors
- ▶ Stainless steel braided hose (40 ft. maximum length)
- ▶ GA1 - 1 or 2 sensors on ceiling
- ▶ GA2 - 2 sensors on ceiling

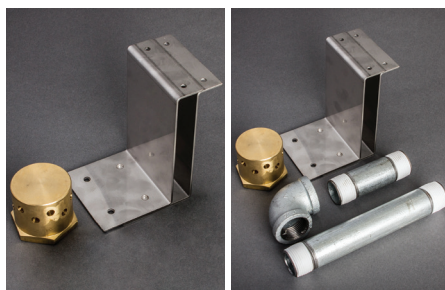


### HEAVY-DUTY EXTINGUISHER BRACKET

- ▶ Shelf design for ease of installation and maintenance
- ▶ Required for USCG approval
- ▶ 2 or 3 clamps depending on cylinder size



**WARNING:** Diesel engines also require the installation of a Fireboy Engine Shutdown System.



### PIPE KITS INCLUDE:

- ▶ Pipe mounting brackets & nozzles
- ▶ Optional pipe kit available with included piping for installation
- ▶ Available in black, galvanized or stainless steel



### MANUAL DISCHARGE PULL CABLE WITH OPTIONAL PULL CABLE ANGLE ADAPTER



### MANUAL PULL STATIONS FOR INSPECTED VESSELS SURFACE OR FLUSH MOUNT AVAILABLE



### ESC SERIES ENGINE SHUTDOWN WITH HELM DISPLAY



### ENGINE SHUTDOWN HELM DISPLAY



### HIGH-TEMP DISCHARGE PULL CABLE



### HORN STROBE FOR INSPECTED VESSELS



# ON BOARD, ON GUARD!



## THE FIREBOY ADVANTAGE

### TOTAL FLOODING, CLEAN AGENT FIRE EXTINGUISHER SYSTEMS

U.S. Coast Guard studies show that approximately 90% of marine fires start in the engine compartment, and that only one in ten of those fires is successfully extinguished with dry-chemical portable fire extinguishers. Dry-chemical fire extinguishers also leave behind a powder that can damage the engine and other electronic equipment.

Since the introduction of Halon systems in the early 1970's, Fireboy has designed safe and effective clean agent engine room fire

protection with no water or powdery residue. All systems are heat-activated to automatically discharge the clean agent with no operator required. With a Fireboy system, the fire extinguishing agent is released much faster than any crew response, resulting in a faster fire-out time and less damage.

## CONSTANT PROTECTION, NO HARMFUL RESIDUE

- ▶ Automatic discharge at 175° F (79° C), or optional 155° F (68° C), for constant engine room protection
- ▶ Many marine insurance providers offer discounts to boaters who install a fixed extinguisher system (contact your insurer for details)
- ▶ Total discharge of agent in less than 10 seconds
- ▶ 3M™ Novec™ 1230 fire protection fluid and HFC-227ea leave no harmful residue
- ▶ 3-year limited warranty
- ▶ All steel refillable cylinders (except systems discharged in a fire)
- ▶ Helm display LED and simple color-coded pressure gauge on cylinder "charged/discharged" status indicator
- ▶ Fireboy-Xintex offers products with coverage from 25 ft.<sup>3</sup> to 17,500 ft.<sup>3</sup> in order to provide maximum protection
- ▶ Integrated shelf bracket mounting system (required for USCG approval) (see photo on page 3)
- ▶ Patented Safety lockout design to minimize accidental discharge
- ▶ Premium quality pressure gauge ensures reliable performance
- ▶ Factory Mutual / USCG / CE / RINA / BV approved
- ▶ 3M™ Novec™ 1230 fire protection fluid and HFC-227ea approved for marine use worldwide (EPA SNAP European)
- ▶ Approved Class B fire in engine rooms, machinery spaces, and other similar industrial applications

Download the 3M™ Novec™ and HFC-227ea worksheets:  
<http://www.fireboy-xintex.com/ga-fire-extinguisher>

**FIREBOY®-XINTEX®**  
A Darley Company



Fireboy-Xintex  
is ISO 9001  
Certified QMS

#### Approvals & Certifications

All Fireboy GA models are approved by Factory Mutual,  
U.S.C.G., RINA (ISO 9094 (2015)) and are CE certified (BV)

**FIREBOY-XINTEX.COM**



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P/N 17080 09/17

## GA SERIES MODEL SELECTION CHART CLEAN AGENT HFC-227ea

HFC-227ea (Heptafluoropropane) is a clean agent and leaves no residue when used. Specifications are for one (1) cylinder. Double the agent amount and shipping weight for GA2 two (2) cylinder system.

### GA1 MODEL SELECTION CHART / 600 - 1,500 FT.<sup>3</sup> / SINGLE CYLINDER SYSTEM

GA1 MODEL NUMBER	VOLUME PROTECTED		DIAMETER		TOTAL HEIGHT		AGENT WEIGHT		SHIPPING WEIGHT		SYSTEM PRESSURE
	ft <sup>3</sup>	m <sup>3</sup>	in	mm	in	mm	lbs	kgs	lbs	kgs	psi (@70° F)
GA10600227-B	600	17.0	10	254	27.1	689	25.9	11.8	64	29.0	360
GA10650227-B	650	18.4	10	254	27.1	689	28.1	12.8	66	29.9	360
GA10700227-B	700	19.8	10	254	27.1	689	30.2	13.7	68	30.8	360
GA10750227-B	750	21.2	10	254	27.1	689	32.4	14.7	70	31.8	360
GA10800227-B	800	22.6	10	254	27.1	689	34.5	15.6	73	33.1	360
GA10850227-B	850	24.0	10	254	27.1	689	36.7	16.7	75	34.0	360
GA10900227-B	900	25.5	10	254	27.1	689	38.9	17.7	77	34.9	360
GA10950227-B	950	26.9	10	254	27.1	689	41.0	18.7	79	35.8	360
GA11000227-B	1,000	28.3	10	254	27.1	689	43.2	19.6	81	36.7	360
GA11050227-B	1,050	29.7	10	254	27.1	689	45.3	20.5	83	37.7	360
GA11100227-B	1,100	31.1	10	254	27.1	689	47.5	21.6	86	39.0	360
GA11150227-B	1,150	33.0	10	254	33.3	846	49.7	22.6	88	39.9	360
GA11200227-B	1,200	34.0	10	254	33.3	846	51.8	23.6	90	40.8	360
GA11250227-B	1,250	35.4	10	254	33.3	846	54.0	24.5	92	41.7	360
GA11300227-B	1,300	36.8	10	254	33.3	846	56.1	25.4	94	42.6	360
GA11350227-B	1,350	38.2	10	254	33.3	846	58.3	26.5	96	43.6	360
GA11400227-B	1,400	39.6	10	254	33.3	846	60.5	27.5	99	44.9	360
GA11450227-B	1,450	41.0	10	254	33.3	846	62.6	28.5	101	45.8	360
GA11500227-B	1,500	42.5	10	254	33.3	846	64.8	29.5	103	46.7	360

### GA2 MODEL SELECTION CHART / 1,200 - 3,000 FT.<sup>3</sup> / TWO CYLINDER SYSTEM

GA2 MODEL NUMBER	VOLUME PROTECTED		DIAMETER		TOTAL HEIGHT		AGENT WEIGHT		SHIPPING WEIGHT		SYSTEM PRESSURE
	ft <sup>3</sup>	m <sup>3</sup>	in	mm	in	mm	lbs	kgs	lbs	kgs	psi (@70° F)
GA21200227-B	1,200	34.0	10	254	27.1	689	25.9	11.8	64	29.0	360
GA21300227-B	1,300	36.8	10	254	27.1	689	28.1	12.8	66	29.9	360
GA21400227-B	1,400	39.6	10	254	27.1	689	30.2	13.7	68	30.8	360
GA21500227-B	1,500	42.5	10	254	27.1	689	32.4	14.7	70	31.8	360
GA21600227-B	1,600	45.3	10	254	27.1	689	34.5	15.6	73	33.1	360
GA21700227-B	1,700	48.1	10	254	27.1	689	36.7	16.7	75	34.0	360
GA21800227-B	1,800	51.0	10	254	27.1	689	38.9	17.7	77	34.9	360
GA21900227-B	1,900	53.8	10	254	27.1	689	41.0	18.7	79	35.8	360
GA22000227-B	2,000	56.6	10	254	27.1	689	43.2	19.6	81	36.7	360
GA22100227-B	2,100	59.5	10	254	27.1	689	45.3	20.5	83	37.7	360
GA22200227-B	2,200	62.3	10	254	27.1	689	47.5	21.6	86	39.0	360
GA22300227-B	2,300	65.1	10	254	33.3	846	49.7	22.6	88	39.9	360
GA22400227-B	2,400	68.0	10	254	33.3	846	51.8	23.6	90	40.8	360
GA22500227-B	2,500	70.8	10	254	33.3	846	54.0	24.5	92	41.7	360
GA22600227-B	2,600	73.6	10	254	33.3	846	56.1	25.4	94	42.6	360
GA22700227-B	2,700	76.5	10	254	33.3	846	58.3	26.5	96	43.6	360
GA22800227-B	2,800	79.3	10	254	33.3	846	60.5	27.5	99	44.9	360
GA22900227-B	2,900	82.0	10	254	33.3	846	62.6	28.5	101	45.8	360
GA23000227-B	3,000	85.0	10	254	33.3	846	64.8	29.5	103	46.7	360

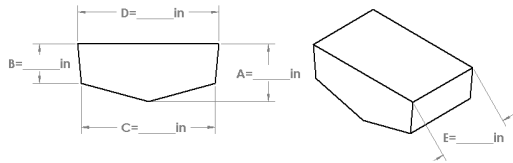
# TYPICAL WORKSHEET

## GA1 & GA2 HFC-227ea GROSS ENGINE ROOM VOLUME WORKSHEET

Fireboy-Xintex will certify the volume of the engine room from manufacturer CAD drawing including volume calculations, or from a completed Engine Room Volume Worksheet

$$\frac{\text{in.}}{A} + \frac{\text{in.}}{B} = \frac{\text{in.}}{2} = \frac{\text{in.}}{C} \times \frac{\text{in.}}{C} = \frac{\text{in.}^2}{C}$$

$$\frac{\text{in.}}{D} - \frac{\text{in.}}{C} = \frac{\text{in.}}{2} = \frac{\text{in.}}{B} \times \frac{\text{in.}}{B} = + \frac{\text{in.}^2}{B}$$



Additional Volume(s) +  $\frac{\text{in.}^3}{1728}$

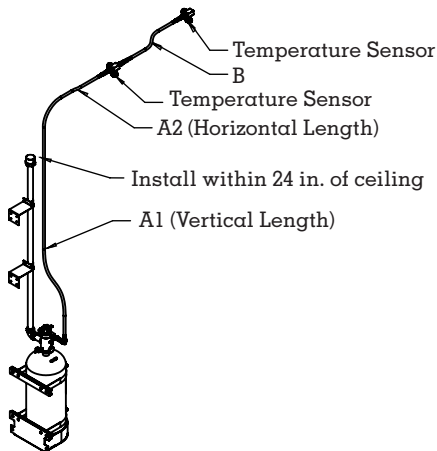
Gross Engine Room Volume =  $\frac{\text{in.}^3}{1728}$  ft.<sup>3</sup>

GA1 Maximum Protected Volume = 1,500 cu. ft.

GA2 Maximum Protected Volume = 3,000 cu. ft.

## PLEASE REFER TO THE DIAGRAM BELOW TO DETERMINE GA LINK DIMENSIONS

Temperature Sensors should be located on the ceiling of the protected space, above potential fire hazards.



### GA1 WORKSHEET

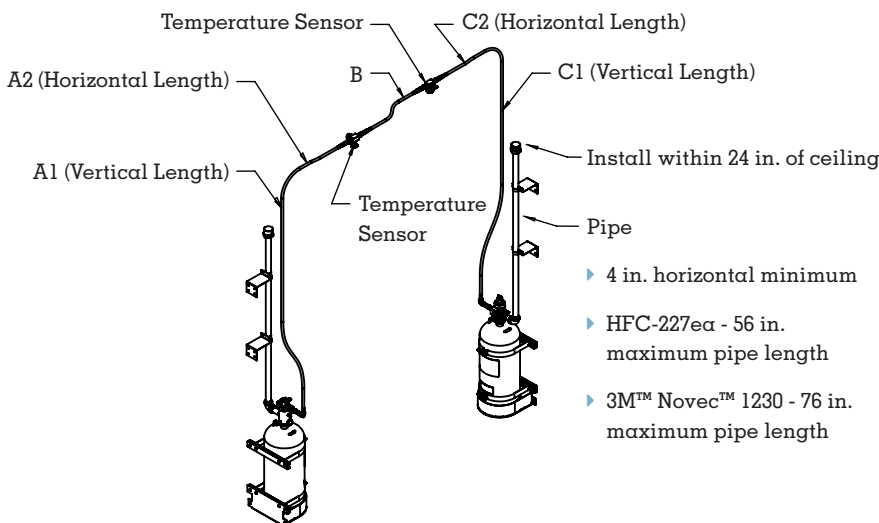
Maximum Length not to exceed 20 ft.

A1 =  $\frac{\text{ft.}}{1}$

A2 =  $\frac{\text{ft.}}{1}$

A = A1 + A2 =  $\frac{\text{ft.}}{1}$

B =  $\frac{\text{ft.}}{1}$



### GA2 WORKSHEET

Maximum Length not to exceed 40 ft.

A1 =  $\frac{\text{ft.}}{1}$

A2 =  $\frac{\text{ft.}}{1}$

B =  $\frac{\text{ft.}}{1}$

C1 =  $\frac{\text{ft.}}{1}$

C2 =  $\frac{\text{ft.}}{1}$

A = A1 + A2 =  $\frac{\text{ft.}}{1}$

B =  $\frac{\text{ft.}}{1}$

C = C1 + C2 =  $\frac{\text{ft.}}{1}$

Download the complete 3M™ Novec™ and HFC-227ea worksheets at: <http://www.fireboy-xintex.com/ga-fire-extinguisher>

## GA SERIES MODEL SELECTION CHART 3M™ NOVEC™ 1230 FIRE PROTECTION FLUID SYSTEM

3M™ Novec™ 1230 Fire Protection Fluid is an advanced, “next-generation” Halon and CO<sub>2</sub> replacement, offering a number of important advantages over other clean agents and CO<sub>2</sub> in marine applications.

With zero ozone depletion potential, short atmospheric lifetime and a global warming potential of <1, Novec 1230 fluid has proven to be the first chemical Halon replacement to offer a viable, long-term, sustainable solution for marine fire protection. Double the agent amount and shipping weight for GA2 two (2) cylinder system.

PROPERTIES	NOVEC 1230	HFC-125	HFC-227ea	HFC-23
Ozone Depletion Potential (ODP) <sup>1</sup>	0.0	0.0	0.0	0.0
Global Warming Potential–IPCC <sup>2</sup>	1	3500	3220	14800
Atmospheric Lifetime (Years)	0.014 (5 days)	29	34.2	270

<sup>1</sup> World Meteorological Organization (WMO) 1998, Model-Derived Method

<sup>2</sup> Intergovernmental Panel on Climate Change. (IPCC) 2007 Method, 100 Year ITH, CO<sub>2</sub> = 1

### GA1 MODEL SELECTION CHART / 600 - 2,000 FT<sup>3</sup> / SINGLE CYLINDER SYSTEM

GA1 MODEL NUMBER	VOLUME PROTECTED		DIAMETER		TOTAL HEIGHT		AGENT WEIGHT		SHIPPING WEIGHT		SYSTEM PRESSURE
	ft <sup>3</sup>	m <sup>3</sup>	in	mm	in	mm	lbs	kgs	lbs	kgs	
GA10600NVC-B	600	17.0	10	254	27.1	689	32.2	14.6	70	31.8	360
GA10650NVC-B	650	18.4	10	254	27.1	689	34.9	15.8	73	33.1	360
GA10700NVC-B	700	19.8	10	254	27.1	689	37.6	17.1	76	34.5	360
GA10750NVC-B	750	21.2	10	254	27.1	689	40.3	18.3	78	35.4	360
GA10800NVC-B	800	22.6	10	254	27.1	689	43.0	19.5	81	36.7	360
GA10850NVC-B	850	24.0	10	254	27.1	689	45.7	20.7	84	38.1	360
GA10900NVC-B	900	25.5	10	254	33.3	846	48.4	22.0	91	41.3	360
GA10950NVC-B	950	26.9	10	254	33.3	846	51.0	23.1	94	42.6	360
GA11000NVC-B	1,000	28.3	10	254	33.3	846	53.7	24.4	97	44.0	360
GA11050NVC-B	1,050	29.7	10	254	33.3	846	56.4	25.6	99	44.9	360
GA11100NVC-B	1,100	31.1	10	254	33.3	846	59.1	26.8	102	46.3	360
GA11150NVC-B	1,150	33.0	10	254	33.3	846	61.8	28.0	105	47.6	360
GA11200NVC-B	1,200	34.0	10	254	33.3	846	64.5	29.3	108	49.0	360
GA11250NVC-B	1,250	35.4	10	254	38.1	968	67.2	30.5	117	53.1	360
GA11300NVC-B	1,300	36.8	10	254	38.1	968	69.8	31.7	120	54.4	360
GA11350NVC-B	1,350	38.2	10	254	38.1	968	72.5	32.9	123	55.8	360
GA11400NVC-B	1,400	39.6	10	254	38.1	968	75.2	34.1	125	56.7	360
GA11450NVC-B	1,450	41.0	10	254	38.1	968	77.9	35.3	128	58.1	360
GA11500NVC-B	1,500	42.5	10	254	38.1	968	80.6	36.6	131	59.4	360
GA11550NVC-B	1,550	43.9	10	254	47.3	1202	83.3	37.8	141	64.0	360
GA11600NVC-B	1,600	45.3	10	254	47.3	1202	86.0	39.0	144	65.3	360
GA11650NVC-B	1,650	46.7	10	254	47.3	1202	88.7	40.2	147	66.7	360
GA11700NVC-B	1,700	48.1	10	254	47.3	1202	91.3	41.4	149	67.6	360
GA11750NVC-B	1,750	49.6	10	254	47.3	1202	94.0	42.6	152	69.0	360
GA11800NVC-B	1,800	51.0	10	254	47.3	1202	96.7	43.9	155	70.3	360
GA11850NVC-B	1,850	52.4	10	254	47.3	1202	99.4	45.1	157	71.2	360
GA11900NVC-B	1,900	53.8	10	254	47.3	1202	102.1	46.3	160	72.6	360
GA11950NVC-B	1,950	55.2	10	254	47.3	1202	104.8	48.5	163	73.9	360
GA12000NVC-B	2,000	56.6	10	254	47.3	1202	107.5	48.8	166	75.3	360

## GA2 MODEL SELECTION CHART / 1,200 - 4,000 FT<sup>3</sup> / TWO CYLINDER SYSTEM

GA2 MODEL NUMBER	VOLUME PROTECTED		DIAMETER		TOTAL HEIGHT		AGENT WEIGHT		SHIPPING WEIGHT		SYSTEM PRESSURE
	ft <sup>3</sup>	m <sup>3</sup>	in	mm	in	mm	lbs	kgs	lbs	kgs	psi (@70° F)
GA21200NVC-B	1,200	34.0	10	254	27.1	689	32.2	14.6	70	31.8	360
GA21300NVC-B	1,300	36.8	10	254	27.1	689	34.9	15.8	73	33.1	360
GA21400NVC-B	1,400	39.6	10	254	27.1	689	37.6	17.1	76	34.5	360
GA21500NVC-B	1,500	42.5	10	254	27.1	689	40.3	18.3	78	35.4	360
GA21600NVC-B	1,600	45.3	10	254	27.1	689	43.0	19.5	81	36.7	360
GA21700NVC-B	1,700	48.1	10	254	27.1	689	45.7	20.7	84	38.1	360
GA21800NVC-B	1,800	51.0	10	254	33.3	846	48.4	22.0	91	41.3	360
GA21900NVC-B	1,900	53.8	10	254	33.3	846	51.0	23.1	94	42.6	360
GA22000NVC-B	2,000	56.6	10	254	33.3	846	53.7	24.4	97	44.0	360
GA22100NVC-B	2,100	59.5	10	254	33.3	846	56.4	25.6	99	44.9	360
GA22200NVC-B	2,200	62.3	10	254	33.3	846	59.1	26.8	102	46.3	360
GA22300NVC-B	2,300	65.1	10	254	33.3	846	61.8	28.0	105	47.6	360
GA22400NVC-B	2,400	68.0	10	254	33.3	846	64.5	29.3	108	49.0	360
GA22500NVC-B	2,500	70.8	10	254	38.1	968	67.2	30.5	117	53.1	360
GA22600NVC-B	2,600	73.6	10	254	38.1	968	69.8	31.7	120	54.4	360
GA22700NVC-B	2,700	76.5	10	254	38.1	968	72.5	32.9	123	55.8	360
GA22800NVC-B	2,800	79.3	10	254	38.1	968	75.2	34.1	125	56.7	360
GA22900NVC-B	2,900	82.0	10	254	38.1	968	77.9	35.3	128	58.1	360
GA23000NVC-B	3,000	85.0	10	254	38.1	968	80.6	36.6	131	59.4	360
GA23100NVC-B	3,100	87.8	10	254	47.3	1,202	83.3	37.8	141	64.0	360
GA23200NVC-B	3,200	90.6	10	254	47.3	1,202	86.0	39.0	144	65.3	360
GA23300NVC-B	3,300	93.4	10	254	47.3	1,202	88.7	40.2	147	66.7	360
GA23400NVC-B	3,400	96.3	10	254	47.3	1,202	91.3	41.4	149	67.6	360
GA23500NVC-B	3,500	99.1	10	254	47.3	1,202	94.0	42.6	152	69.0	360
GA23600NVC-B	3,600	101.9	10	254	47.3	1,202	96.7	43.9	155	70.3	360
GA23700NVC-B	3,700	104.8	10	254	47.3	1,202	99.4	45.1	157	71.2	360
GA23800NVC-B	3,800	107.6	10	254	47.3	1,202	102.1	46.3	160	72.6	360
GA23900NVC-B	3,900	110.4	10	254	47.3	1,202	104.8	48.5	163	73.9	360
GA24000NVC-B	4,000	113.2	10	254	47.3	1,202	107.5	48.8	166	75.3	360

### GA1 & GA2 NOVEC 1230 GROSS ENGINE ROOM VOLUME WORKSHEET (TYPICAL)

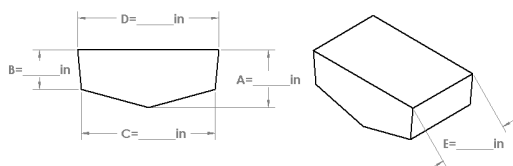
Fireboy-Xintex will certify the volume of the engine room from manufacturer CAD drawing including volume calculations, or from a completed Engine Room Volume Worksheet

$$\frac{\text{A}}{\text{D}} \text{ in.} + \frac{\text{B}}{\text{C}} \text{ in.} = \frac{\text{in.}}{2} = \frac{\text{in.}}{\text{C}} \times \frac{\text{in.}}{\text{B}} = \frac{\text{in.}^2}{\text{in.}^2}$$

$$\frac{\text{in.}}{\text{D}} - \frac{\text{in.}}{\text{C}} = \frac{\text{in.}}{2} = \frac{\text{in.}}{\text{B}} \times \frac{\text{in.}}{\text{C}} = + \frac{\text{in.}^2}{\text{in.}^2}$$

$$\frac{\text{in.}^2}{\text{in.}^2} \times \frac{\text{in.}}{\text{E}} \text{ in.} = \frac{\text{in.}^3}{\text{in.}^3}$$

$$\text{Additional Volume(s)} + \frac{\text{in.}^3}{1728} = \frac{\text{in.}^3}{\text{ft.}^3}$$



$$\text{Gross Engine Room Volume} = \frac{\text{in.}^3}{1728} = \text{ft.}^3$$

GA1 Maximum Protected Volume = **2,000 cu. ft.**

GA2 Maximum Protected Volume = **4,000 cu. ft.**

Download the complete 3M™ Novec™ and HFC-227ea worksheets at: <http://www.fireboy-xintex.com/ga-fire-extinguisher>