



ICC-ES Evaluation Report ESR-4873

Reissued August 2023

This report is subject to renewal August 2024.

DIVISION: 10 00 00—SPECIALTIES
Section: 10 31 00—Manufactured Fireplaces

REPORT HOLDER:

EARTHCORE INDUSTRIES, LLC

EVALUATION SUBJECT:

ISOKERN MODELS M3600 (VF-36), M4200 (VF-42) AND M4600 (VF-46) UNVENTED GAS APPLIANCE ENCLOSURES; ISOKERN MODELS IBV-36 (80B36) AND IBV-46 (80B46) VENTED GAS-FIRED FIREPLACES; ISOKERN MAXIMUS LINEAR SERIES GAS-FIRED FIREPLACE MODELS 82L48, 82L72, 82L96, 82L120, 82L48ST, 82L72ST, 82L96ST AND 82L120ST; MAXIMUS DIRECT VENT GAS-FIRED FIREPLACE MODELS MDV 80D46 and MDV 82D48

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2021, 2018, 2015, 2012, 2009 and 2006 *International Building Code*® (IBC)
- 2021, 2018, 2015, 2012, 2009 and 2006 *International Residential Code*® (IRC)
- 2021, 2018, 2015, 2012, 2009 and 2006 *International Mechanical Code*® (IMC)
- 2021, 2018, 2015, 2012, 2009 and 2006 *International Fuel Gas Code*® (IFGC)

For evaluation for compliance with the codes adopted by Los Angeles Department of Building and Safety (LADBS), see [ESR-4873 LABC and LARC Supplement](#).

Properties evaluated:

- Fire resistance
- Seismic resistance

2.0 USES

The Isokern gas-fired fireplaces and unvented gas appliance enclosures are constructed in the field using prefabricated cementitious blocks.

3.0 DESCRIPTION

3.1 Models M3600 (VF-36), M4200 (VF-42), and M4600 (VF-46) Unvented Gas Appliance Enclosures:

The enclosures are modular refractory units designed for field assembly. The units consist of interlocking precast parts that are fitted together in the field using a premixed Earthcore mortar, supplied with the units, to form the unvented gas appliance enclosures. The refractory parts are manufactured using a proprietary mixture of volcanic pumice aggregate and aluminate cement. The enclosures are manufactured with medium-density material. High-temperature refractory firebricks are provided to line the interior of the enclosure. The enclosures are available in sizes noted in Table 2. See Figure 1 for dimensions and weights.

The enclosures, evaluated as complying with ANSI Z21.91, are for use with unvented decorative gas logs listed and labeled as complying with ANSI Z21.11.2, and having a maximum heat input of 40,000 Btu/h (11 700 W). The gas logs must be factory-equipped with a listed oxygen-depletion safety shutoff system (ODS) and must comply with 2021, 2018, 2015, 2012, 2009 and 2006 IFGC Section 621.6 and 2021, 2018, 2015, 2012, 2009 and 2006 IRC Section G2445.6. The enclosure must only be installed within a room that has a primary source of heat and use of the units is prohibited in locations defined in IRC Section G2406.2 and IFGC Sections 303.3 and 621.4. Combustion air must be provided in accordance with IRC Section M1701 and IFGC Section 621.5. The room in which the units are installed must have a free-air volume equal to or greater than 50 cubic feet per 1000 Btu/h (4.8 m³/kW) of the aggregate input rating of all appliances within the room.

The base, sides, rear and top of the enclosure consist of preformed refractory components that interlock together to form the enclosure. Assembly of the enclosure is as described in Section 4.3 of this report, except that a 1/2-inch-wide (12.7 mm) mortar joint is used; and 1 1/8-inch-thick (28.6 mm) (minimum) refractory enclosure, conforming to ASTM C1261, is used to line the hearth, side walls and back wall. The unit must be anchored in accordance with IRC Section M1307.2 and IFGC Section 301.12.

3.2 Models IBV-36 (80B36) and IBV-46 (80B46) Vented Gas-Fired Fireplaces:

3.2.1 General: Vented gas-fired fireplace models IBV-36 (80B36) and IBV-46 (80B46), with dimensions and weights as described in Figure 2, comply with ANSI Z21.50 and are for connection to listed Type B gas vents as described in Section 3.2.2. The fireplaces are available in sizes noted in Table 2.

3.2.2 Gas Vent: The gas vent used with vented gas-fired fireplaces consists of nominally 10-inch-diameter (254 mm), Type B gas vents listed and labeled as complying with UL 441 that comply with IMC Chapter 8, IRC Chapter 24 and IFGC Chapter 5.

3.3 Maximus Linear Series, Open Front and Glass Front, Gas-Fired Fireplace Models 82L48, 82L72, 82L96, 82L120 and See-through Models 82L48ST, 82L72ST, 82L96ST, 82L120ST:

3.3.1 General: Maximus Linear Series, Open Front and Glass Front, vented gas-fired fireplace Models 82L48, 82L72, 82L96 and 82L120 and See-through Models 82L48ST, 82L72ST, 82L96ST and 82L120ST, with dimensions and weights as described in Figure 4 for Open Front fireplaces and Figure 6 for Glass Front fireplaces, comply with ANSI Z21.50 and are for connection to a listed Type B gas vent as described in Section 3.3.2 and Table 3. See Table 3 for Maximus Linear Series fireplace sizes, Figure 5 for typical rough framing dimensions for Open Front and See-through fireplaces, Figure 7 for typical rough framing dimensions for Glass Front fireplaces, and Figure 8 for termination system configurations.

3.3.2 Gas Vent: The gas vent system consists of a nominally 12-inch-diameter (305 mm), listed Type B gas vent complying with Chapter 8 of the IMC and Chapter 5 of the IFGC and Chapter 24 of the IRC. For the Maximus Linear Series, the flue gases are vented through the Type B gas vent terminating with a 12-inch-diameter (305 mm) mechanical fireplace damper (MFD), with Evervex ADC100 control, and an Enervex RS012 or Enervex RS014 exhaust fan listed in accordance with UL 378 and UL 705.

3.4 Maximus Direct Vent Gas-fired Fireplace Models MDV 80D46 and MDV 82D48:

3.4.1 General: Maximus direct vent gas-fired fireplace Models MDV 80D46 and MDV 82D48, with dimensions, framing dimensions and venting systems shown in Figure 3, comply with ANSI Z21.50 and are for connection to listed SV8 gas vents as described in Section 3.4.2 or to the fireplace manufacturer's gas vents as described in Section 3.4.3. The fireplaces are available in sizes noted in Table 2. Model MDV 80D46 weighs approximately 1660 lbs and Model MDV 82D48 weighs approximately 1700 lbs.

3.4.2 Gas Vent: The gas vent used with the Maximus Direct Vent gas-fired fireplace Models MDV 80D46 and MDV 82D48 consists of nominally 8-inch-diameter (204 mm) inner vent with an 11-inch- outer diameter (279 mm), Direct Vent SV8 gas vents listed and labeled as complying with UL 441 that comply with IMC Chapter 8, IRC Chapter 24 and IFGC Chapter 5.

3.4.3 EarthCore Industries, Inc. Isokern Gas Vent: The Maximus Direct Vent gas-fired fireplace Models MDV 80D46 and MDV 82D48 may be equipped with the fireplace manufacturer's gas vents, consisting of nominally 8-inch-diameter (204 mm) inner vent with an 11-inch-outer diameter (279 mm), Direct Vent gas vents, listed specifically for use with fireplace Models MDV 80D46 and MDV 82D48, when installed in accordance with the applicable provisions of IMC Chapter 8, IRC Chapter 24 and IFGC Chapter 5.

3.5 Grout and Mortar:

Grout used in construction of the fireplace unit is Quickcrete Concrete Mix #1001, 4000 psi concrete mix or equivalent. Mortar used with the fireplace unit is Earthcore mortar.

4.0 DESIGN AND INSTALLATION

4.1 General:

The fireplaces must be installed in accordance with this report, the manufacturer's instructions and the applicable code. A copy of the manufacturer's published instructions must be available at the jobsite at all times during installation. The fireplaces are not recognized for use with doors.

Except as specified in Section 3.1 for unvented gas appliance enclosures, combustion air must be provided in accordance with IBC Section 2111.14, IRC Section R1006.1, IRC Section G2407 or IFGC Section 304, as applicable, and the manufacturer's published installation instructions.

4.2 Design:

Installation is limited to Seismic Design Categories A and B, except that when installation is in accordance with Section 4.3 of this report, the fireplaces may be installed in Seismic Design Categories C, D, E and F, provided the seismic design factors are limited to the values noted in Table 1. The seismic design must be in accordance with Sections 15.3.2 (1) and 13.3, 13.4, 13.5 and 13.6 of ASCE 7. Fireplace systems used in Seismic Design Categories C, D, E, and F are limited to those incorporating listed and labeled Type B gas vents.

Structural design calculations and construction plans prepared by a licensed design professional are required to determine the requirements for the fireplace foundation and anchorage of the fireplace to the foundation.

When installation is on wood floor construction, the licensed design professional must determine the requirements for support and anchorage for the combined gravity and seismic loading. The applicability of the seismic design parameters in Table 1, for Seismic Design Categories C, D, E and F, must be verified with due consideration of the flexibility of anchorage and supports. In addition, the calculated long-term deflection of the wood members supporting the fireplace must not exceed the values shown in IBC Table 1604.3 for floor members. Under the IRC, an engineered design must be provided in accordance with IRC Section R301.1.3.

4.3 Installation:

4.3.1 General: A combustible or noncombustible foundation, adequate to support all required loads, is necessary and must be approved by the code official. Installation of a 3-inch-thick (76 mm) Earthcore base plate is required prior to installing the fireplace components on a combustible foundation. Installation of a 3-inch-thick (76 mm) Earthcore base plate is optional prior to installing the fireplace components on a noncombustible foundation. For Seismic Design Categories C, D, E and F, anchorage of the fireplace unit to the foundation or combustible supporting floor system must be designed as described in Section 4.2. Units are assembled on the noncombustible foundation or combustible supporting floor system by installing the base plate (when required) and fireplace components. Earthcore Mortar is mixed with water until smooth and without dry spots, and is then poured into the supplied Earthcore application bag and applied to one adjoining component face of each joint. A 1/2-inch-wide (12.7 mm) line of mortar is applied 1/2 inch (12.7 mm) from

all edges of the face with two longitudinal lines between. Mortar must be exposed at the joints when components are joined, and the excess must be smoothed out. The fireplace side walls and back wall are then lined with minimum 1¹/₈ inches (28.6 mm) thick refractory bricks in accordance with the fireplace manufacturer's installation instructions.

Clearances: For unvented gas appliance enclosure Models M3600 (VF-36), M4200 (VF-42) and M4600 (VF-46), the enclosure may be installed on combustible construction when installed as described in Section 4.3, and at zero clearance to combustible construction on sides, back and top. Minimum clearances are 15¹/₂ inches (394 mm) to side walls, 42 inches (1067 mm) to ceilings and 12 inches (305 mm) to combustible mantles. A noncombustible hearth extension is optional.

For vented gas-fired fireplace Models IBV-36 (80B36) and IBV-46 (80B46), minimum clearance from the fireplace opening to side walls is 8 inches (204 mm) and 1.5 inches (38 mm) from sides and rear of fireplace. Sheathing and trim must be kept at least 8 inches (204 mm) from the opening. Combustible mantles must be at least 12 inches (305 mm) above the opening. A noncombustible hearth extension is optional.

For the Maximus Linear Series Open Front Fireplace Models 82L48, 82L72, 82L96 and 82L120 and See-through Models 82L48ST, 82L72ST, 82L96ST and 82L120ST, minimum clearance from the fireplace opening to side walls is 8 inches (204 mm) and 1.5 inches (60 mm) from sides and rear of fireplace. Fireplaces must be installed with Isokern Base Plate when clearance to a combustible floor is 0-inches (0 mm). Sheathing and trim must be kept at least 8 inches (205 mm) from the opening and from opening top. Minimum clearance is 3 inches (76 mm) from firebox to insulation. Combustible mantles must be at least 12 inches (305 mm) above the opening. A noncombustible hearth extension is optional.

For the Maximus Linear Series Glass Front Fireplace Models 82L48, 82L72, 82L96 and 82L120, minimum clearance is 1.5 inches (60 mm) from sides and rear of fireplace to combustibles. Fireplaces must be installed with Isokern Base Plate when clearance to a combustible floor is 0-inches (0 mm). Minimum clearance is 0-inches (0 mm) from the glass front to combustible sheathing and trim. Minimum clearance is 3 inches (76 mm) from firebox to insulation. Combustible mantles must be at least 12 inches (305 mm) above the opening. A noncombustible hearth extension is optional.

For Maximus direct vent gas-fired fireplace Models MDV 80D46 and MDV 82D48, minimum clearance from the fireplace opening to side walls is 8 inches (204 mm) and 1.5 inches (38 mm) from sides and rear of fireplace. Sheathing and trim must be kept at least 8 inches (204 mm) from the opening. Combustible mantles must be at least 12 inches (305 mm) above the opening. A noncombustible hearth extension is optional.

4.3.2 Gas Vent Installation: Gas vents are installed through a 10-inch-diameter (254 mm) or 12-inch-diameter (305 mm) hole cut into the top plate of the fireplace enclosure, centered from each edge. The Isokern Anchor Plate/Downdraft Diverter component is placed over the hole using either a bed of Earthcore mortar, or an approved ceramic blanket gasket. The Anchor Plate/Downdraft Diverter hood component is then secured to the top plate using masonry screws. The Type B gas vent must be connected to the Anchor Plate/Downdraft Diverter component and installed in accordance with the vent manufacturer's instructions.

4.3.3 Unvented Gas Appliance Firebox Enclosures: Models M3600 (VF-36), M4200 (VF-42) and M4600 (VF-46) unvented gas appliance firebox enclosures must be installed in accordance with IFGC Section 621, IRC Section G2445 and the manufacturer's published installation instructions.

4.3.4 Vented Gas-fired Fireplaces: Models IBV-36 (80B36) and IBV-46 (80B46), Maximus Linear Series Models 82L48, 82L72, 82L96 and 82L120 and See-through Models 82L48ST, 82L72ST, 82L96ST and 82L120ST, and Maximus Models MDV 80D46 and MDV 82D48 vented gas fireplaces must be installed in accordance with IFGC Section 604, IRC Section G2434 and the manufacturer's published installation instructions.

5.0 CONDITION OF USE

The Isokern fireplaces, gas vent systems and unvented gas appliance enclosures described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1** The fireplaces, gas vent systems and unvented gas appliance enclosures must be installed in accordance with this report, the manufacturer's published installation instructions and the applicable code. In the event of a conflict between this report and the manufacturer's instructions, this report governs.
- 5.2** Structural design and calculations from a registered design professional must be provided to the code official to justify the supporting structure for all applicable loads, including gravity, wind and earthquake loading, and applicable load combinations in accordance with IBC Section 1605.
- 5.3** An analysis shall be provided to the code official establishing that the seismic conditions for the installation site do not exceed the specified seismic limitations.
- 5.4** Compliance with the fireplace air leakage provisions found in 2021, 2018 and 2015 *International Energy Conservation Code*[®] (IECC) Section R402.4.2; 2012 *International Energy Conservation Code*[®] (IECC) Section R402.4.2 and Table R402.4.1.1; 2021, 2018 and 2015 *International Energy Conservation Code*[®] (IECC) Section R402.4.2; 2012 IRC Section N1102.4.2 and Table N1102.4.1.1; 2009 IECC Section 402.4.3; and 2009 IRC Section N1102.4.3, are outside the scope of this report.
- 5.5** Under 2021 IRC Section R1001.13, fireplace accessories must comply with UL 907 as being listed and labeled fireplace accessories installed in accordance with the accessory manufacturer's installation instructions and the report holder's installation instructions.
- 5.6** The vented gas-fired fireplaces and unvented gas appliance enclosures are manufactured in Chesapeake, Virginia, under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Field-constructed Fireplace Systems Using Prefabricated Blocks (AC375), dated February 2012 (editorially revised July 2021).

7.0 IDENTIFICATION

- 7.1** The components of the fireplace and Type B gas vents are supplied to the jobsite on shrink-wrapped pallets bearing a label with the Earthcore Industries, LLC,

name and address; product name; address of the manufacturing plant and evaluation report number (ESR-4873). A permanent label must be attached to the fireplace, or unvented enclosure, bearing the Earthcore Industries, LLC, name; product name; manufacturing location; date of manufacture and serial number; clearances to combustibles; other information required by ANSI Z21.91 for the unvented gas appliance firebox enclosures or ANSI Z21.50 for the vented fireplaces; and the evaluation report number (ESR-4873).

7.2 The report holder’s contact information is the following:

EARTHCORE INDUSTRIES, LLC
6899 PHILLIPS INDUSTRIAL BOULEVARD
JACKSONVILLE, FLORIDA 32256
(904) 363-3417
www.earthcore.com
www.isokern.net

TABLE 1—SEISMIC DESIGN FACTORS FOR SEISMIC DESIGN CATEGORIES C, D, E AND F

FACTOR	VALUE
Amplification Factor, α_p	1.0
Component response modification factor, R_p	3.0
Z/h factor, where Z is the height in structure of point of attachment with respect to the base; and h is the average roof height of structure with respect to the base	0.65
Spectral response acceleration parameter, S_{Ds}	2.0
Weight, W_p (lbs)	See Figures 1, 2, 3 and 4
Fundamental period of fireplace unit, T_s	0.35

For SI: 1 foot = 305 mm; 1lb = 4.45 N.

TABLE 2—ISOKERN GAS APPLIANCE FIREBOX ENCLOSURE OR GAS-FIRED FIREPLACE DIMENSIONS

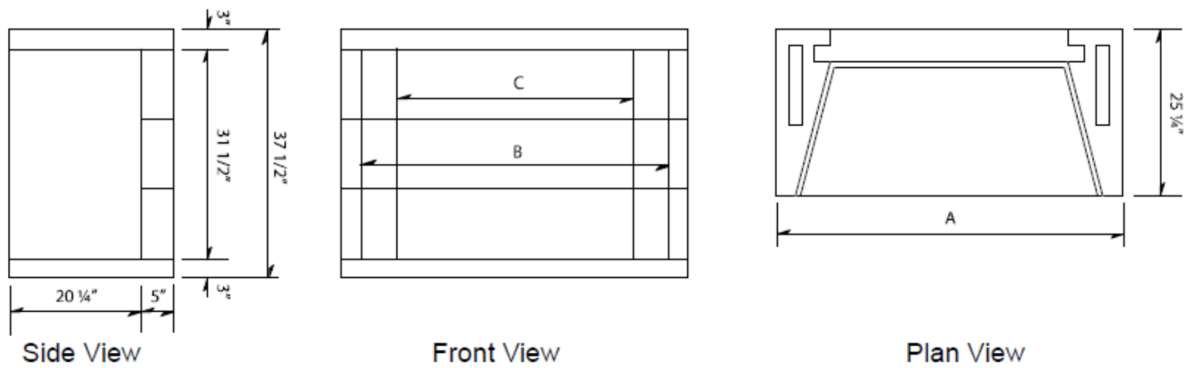
MODEL	OVERALL SIZE (inches)			FIREBOX OPENING SIZE (inches), Width x Height	HEARTH EXTENSION SIZE (inches), Width x Depth	TYPE B VENT SIZE (inches), I.D.	INSTALLED HEIGHT, FIREPLACE AND TYPE B GAS VENT SYSTEM (feet)	
	Width	Depth	Height				Minimum	Maximum
M3600 (VF-36)	43	25 ¹ / ₄	38	36 x 31 ¹ / ₂	N/A	N/A	N/A	N/A
M4200 (VF-42)	49	25 ¹ / ₄	38	43 x 31 ¹ / ₂	N/A	N/A	N/A	N/A
M4600 (VF-46)	53	25 ¹ / ₄	38	47 x 31 ¹ / ₂	N/A	N/A	N/A	N/A
IBV-36 (80B36)	43	25 ¹ / ₄	71	37 x 32	58 x 20	10	15	46
IBV-46 (80B46)	53	25 ¹ / ₄	71	47 x 32	68 x 20	10	15	46
MDV 80D46	53	25 1/4	63 1/4	42x27	N/A	8	10	47
MDV 80D48	53	28	69 ³ / ₄	43x33	N/A	8	10	47

For SI: 1 foot = 305 mm; 1lb = 4.45 N.

TABLE 3—MAXIMUS LINEAR SERIES GAS-FIRED FIREPLACE DIMENSIONS

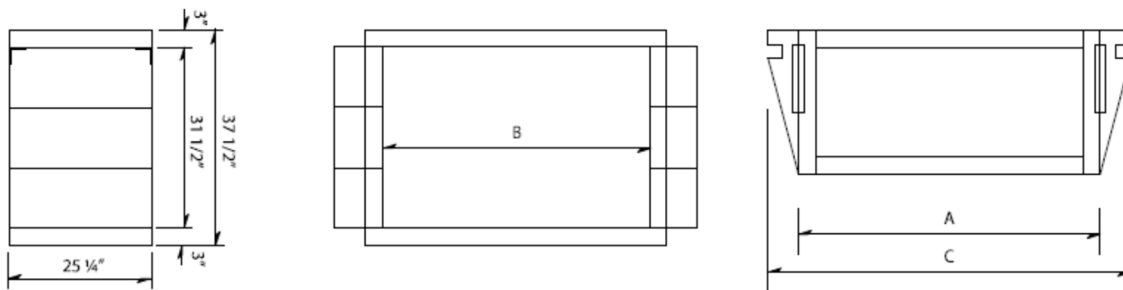
MODEL	OVERALL SIZE (inches)			FIREBOX OPENING SIZE (inches), Width x Height	TYPE B VENT SIZE (inches), I.D.	INSTALLED MINIMUM HEIGHT, FIREPLACE AND TYPE B VENT SYSTEM (feet)
	Width	Depth	Height			
82L48, 82L48ST	52 ³ / ₄	27 ¹⁵ / ₁₆	50 ⁷ / ₁₆	45 ³ / ₁₆ x 18 ⁷ / ₈	12	Vertical – 10 ft Horizontal – 4ft 90 deg offsets - 1
82L72, 82L72ST	85 ¹³ / ₁₆	27 ¹⁵ / ₁₆	50 ⁷ / ₁₆	78 ¹ / ₄ x 18 ⁷ / ₈	12	Vertical – 10 ft Horizontal – 4ft 90 deg offsets – 1
82L96, 82L96ST	108 ³ / ₁₆	27 ¹⁵ / ₁₆	50 ³ / ₈	100 ⁵ / ₈ x 18 ¹³ / ₁₆	12	Vertical – 10 ft Horizontal – 4ft 90 deg offsets – 1
82L120, 82L120ST	131 ³ / ₄	27 ¹⁵ / ₁₆	50 ³ / ₈	124 ¹ / ₈ x 18 ⁷ / ₈	12	Vertical – 10 ft Horizontal – 4ft 90 deg offsets - 1

For SI: 1 foot = 305 mm; 1lb = 4.45 N.



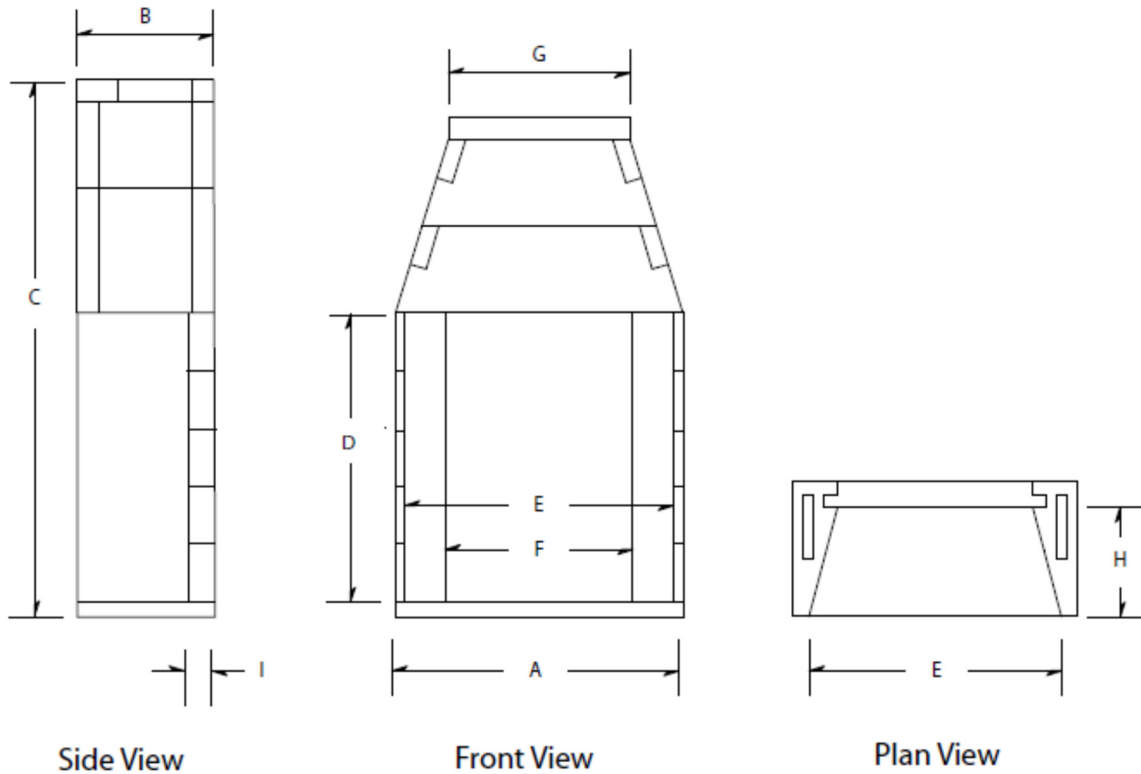
Model	A	B	C	MINIMUM FRAMING	WEIGHT
36"	43"	36 1/8"	27 1/4"	43"W x 37 1/2"H x 25 1/4"D	715 lbs
42"	49"	43 1/8"	33 1/4"	49"W x 37 1/2"H x 25 1/4"D	820 lbs
46"	53"	47 1/8"	37 1/4"	53"W x 37 1/2"H x 25 1/4"D	880 lbs

See -Thru Models



Model	A	B	C
36"	43"	37"	53"
42"	49"	43"	59"
46"	53"	47"	63"

FIGURE 1—UNVENTED GAS APPLIANCE ENCLOSURE DIMENSIONS MODELS M3600 (VF-36), M4200 (VF-42) AND M4600 (VF-46)



Model	A	B	C	D	E	F	G	H	I	Minimum Framing	Weight
36"	43"	25¼"	71 1/4"	31 1/2"	36 1/8"	27 1/4"	21½"	20¼"	5"	43"W x 71 1/4"H x 26 3/4"D	1500 lbs.
46"	53"	25¼"	71 1/4"	31 1/2"	47 1/8"	37 1/4"	32"	20¼"	5"	53"W x 71 1/4"H x 26 31/4"D	1700 lbs.
*To achieve height dimension "D" in table above, a 100' (8.3') minimum flue height with 10" I.D. B-Vent is required											
36"	43"	25¼"	81 3/4"	*42"	36 1/8"	27 1/4"	21½"	20¼"	5"	43"W x 81 3/4"H x 26 3/4"D	1650 lbs.
46"	53"	25¼"	81 3/4"	*42"	47 1/8"	37 1/4"	32"	20¼"	5"	53"W x 81 3/4"H x 26 3/4"D	1850 lbs.
*To achieve height dimension "D" in table above, a 9' minimum flue height with 10" I.D. B-Vent is required											
36"	43"	25¼"	92 1/4"	*52 1/2"	36 1/8"	27 1/4"	21½"	20¼"	5"	43"W x 92 1/4"H x 26 3/4"D	1800 lbs.
46"	53"	25¼"	92 1/4"	*52 1/2"	47 1/8"	37 1/4"	32"	20¼"	5"	53"W x 92 1/4"H x 26 3/4"D	2000 lbs.
*To achieve height dimension "D" in table above, a 12' minimum flue height with 10" I.D. B-Vent is required											

FIGURE 2—VENTED GAS-FIRED FIREPLACE DIMENSIONS MODELS IBV-36 (80B36) AND IBV-46 (80B46)

MAXIMUS Series 46" (80D46)

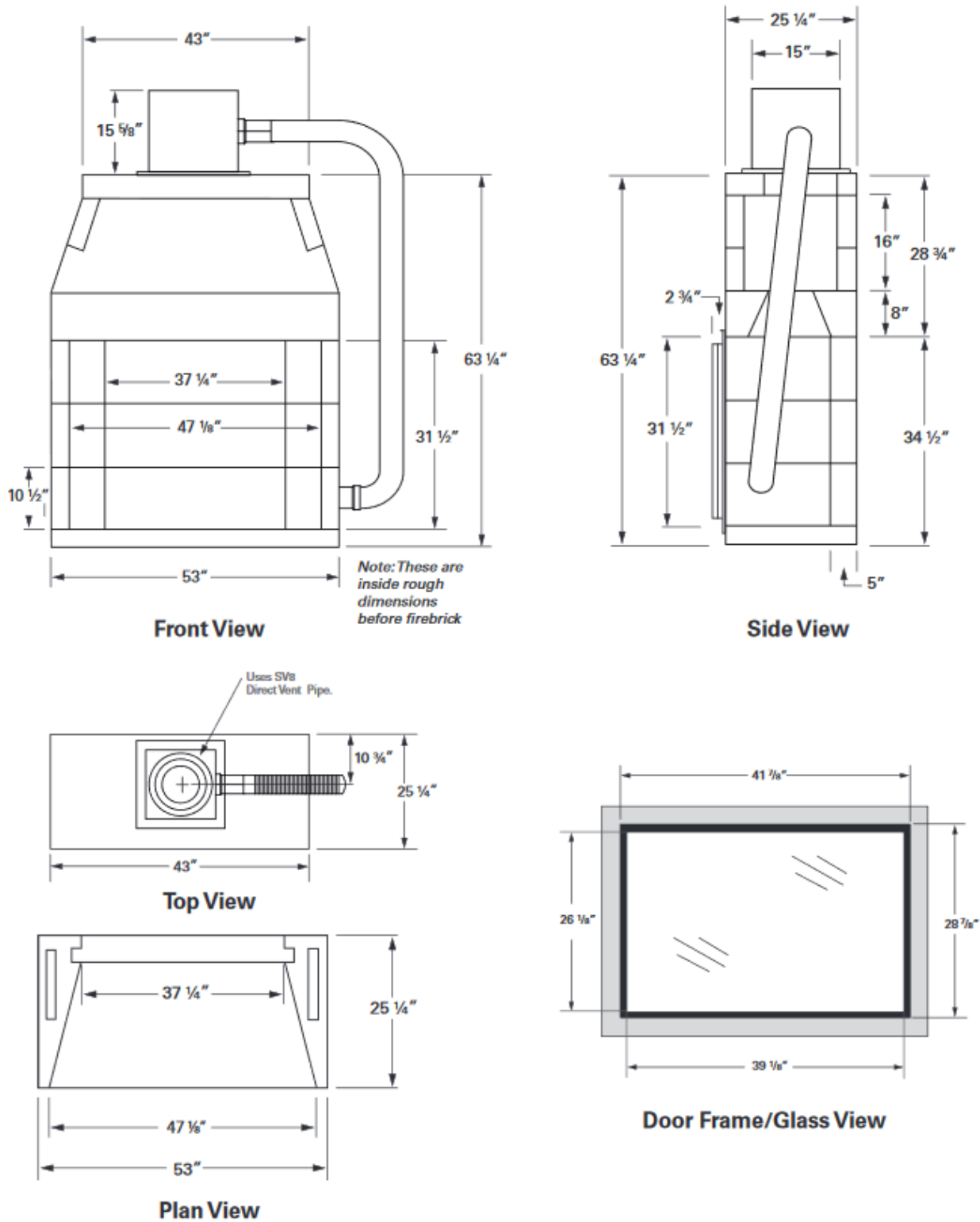


FIGURE 3—DIRECT VENT FIREPLACE DIMENSIONS MODELS MDV 80D46 AND MDV 80D48

MAXIMUS Series 48" (82D48)

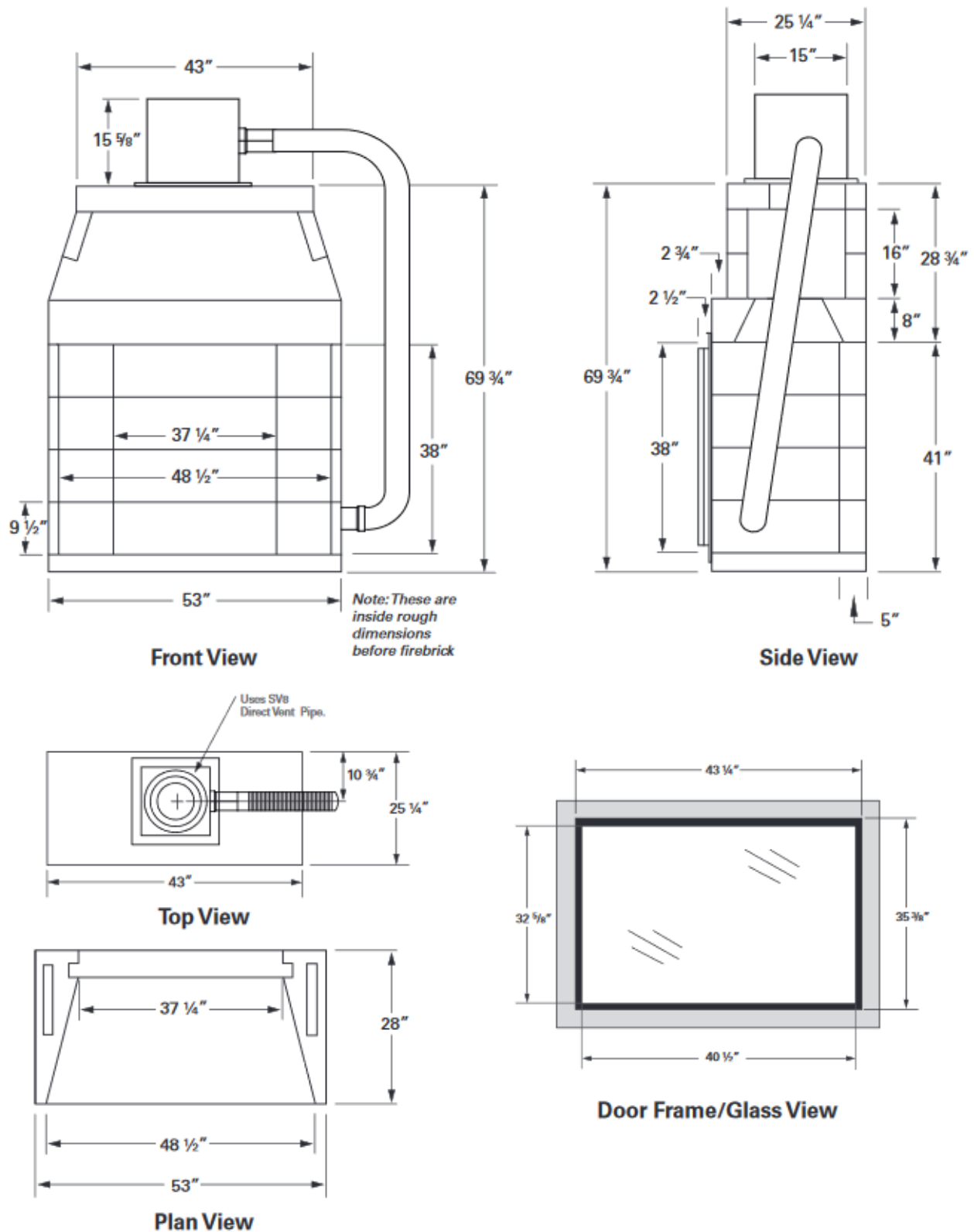


FIGURE 3—DIRECT VENT FIREPLACE DIMENSIONS MODELS MDV 80D46 AND MDV 80D48 (continued)

Rough Framing Dimensions

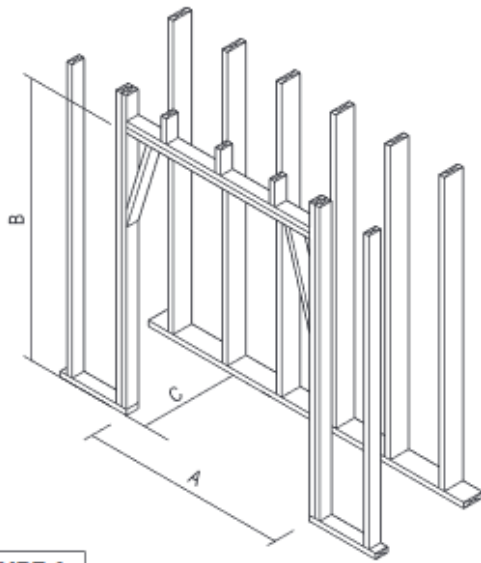


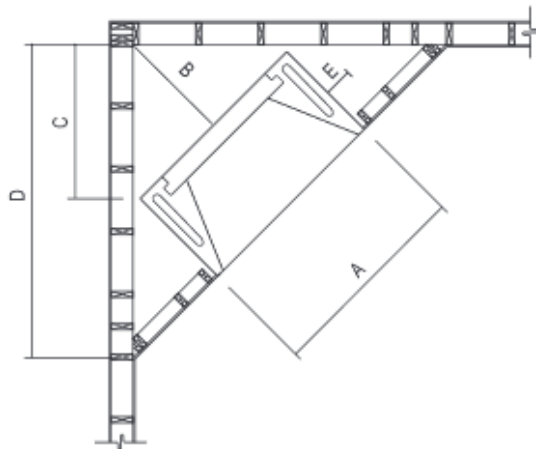
FIGURE 4

Typical Installation Framing Dimensions

<u>MAXIMUS</u>	Width A	Height B	Depth C
Model 46	56"	65"	26 ¾"
Model 48	56"	71"	29 ½"

Notes:

1. "B" includes the 3" thick base plate.
2. "Raised hearth" requires additional rough opening height at "B" equal to the height of the raised hearth detail.
3. Rough framing dimension for width "A" allows for the required 1 1/2" clearance at the sides of the Fireplace.
4. Rough framing dimension for depth "C" allows for the required 1-1/2" clearance at the back of the Fireplace.
5. Rough framing dimension for "D" allows for the required 12" needed for the flex air intake tube. Flex air intake tube can be placed on either side of firebox.



Corner Installation Framing Dimensions

<u>MAXIMUS</u>	A	B	C	D	E
Model 46	53"	25 ¾"	39"	79"	12"
Model 48	53"	28 ½"	39"	85 ¾"	12"

Note: Make allowance for 12" clearance for intake air flex pipe at anchor plate of firebox top plate when turning for offset.

FIGURE 3—DIRECT VENT FIREPLACE DIMENSIONS MODELS MDV 80D46 AND MDV 80D48 (continued)

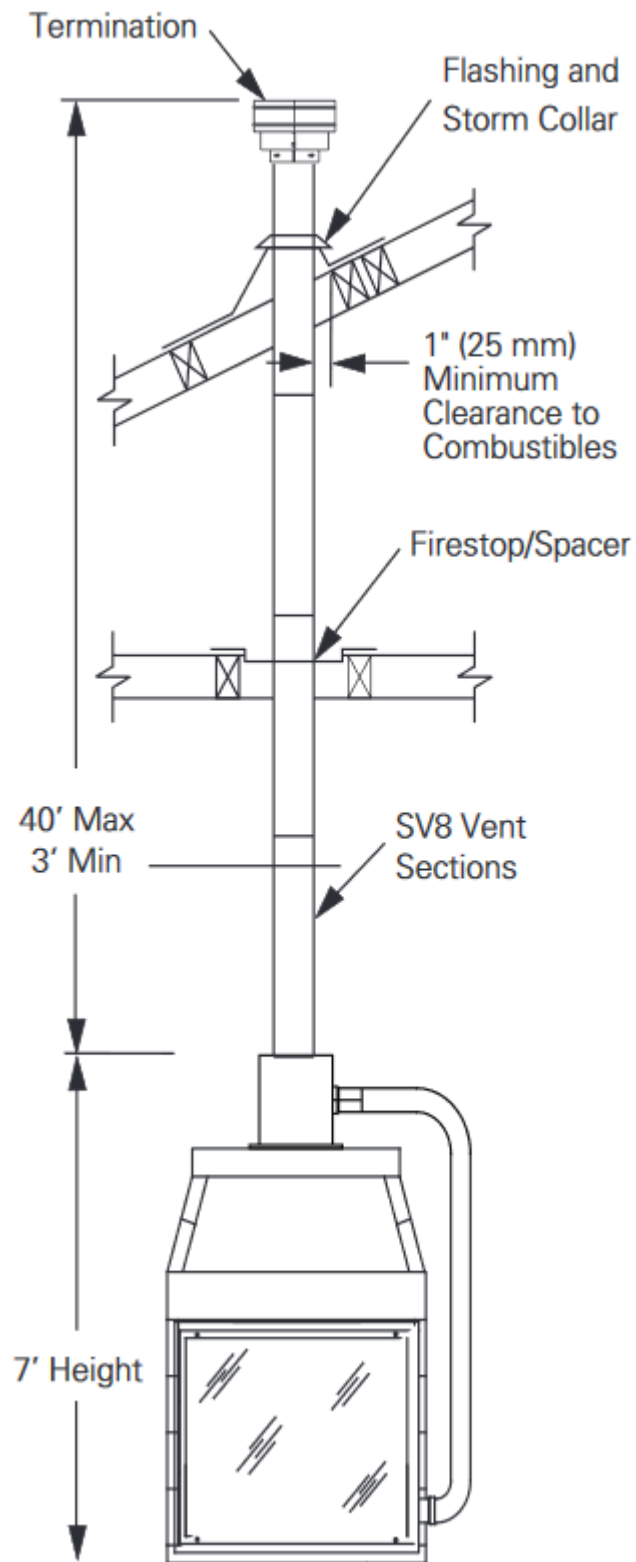
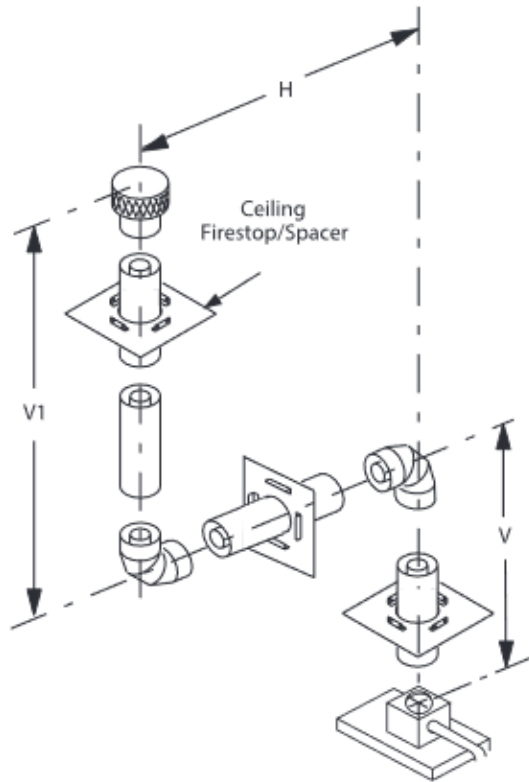


FIGURE 3—DIRECT VENT FIREPLACE DIMENSIONS MODELS MDV 80D46 AND MDV 80D48 (continued)

Venting System - Vertical Figures/Tables



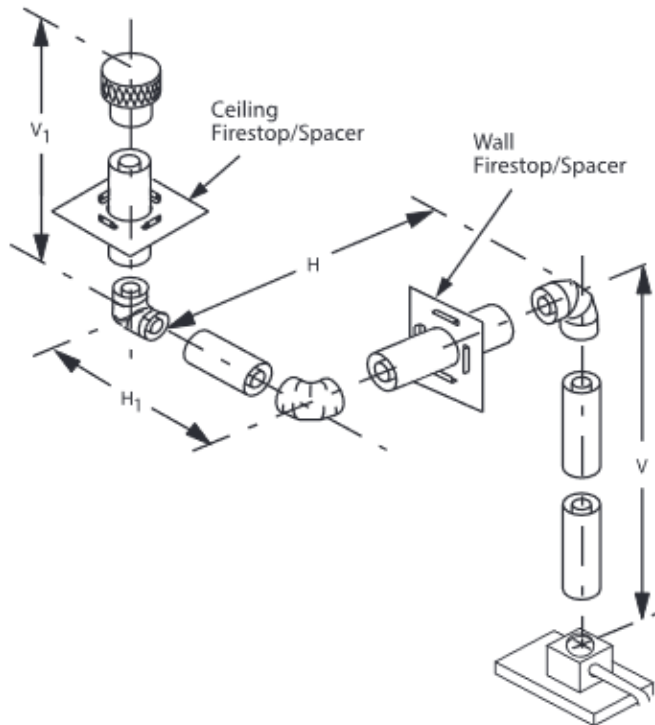
**Top Vent—Two 90 Degree Elbows
(Corner Framing with
Square Termination)**

Table A			
H Maximum		V Minimum	
feet	(meter)	feet	(meter)
10	(3.1)	2.5	(0.762)
15	(4.65)	3.5	(1.07)
20	(6.2)	4.5	(1.37)

$V + V_1 + H = 40$ feet (12.4 meters) Max.
 $V + V_1 = 11$ feet (3.3 meters) Minimum for 46 in. units
 $V + V_1 = 10.5$ feet (3.2 meters) Minimum for 48 in. units

Example: If 20 feet of (H) horizontal vent run is needed, then 4-1/2 feet minimum of (V) vertical vent will be required.

NOTE: The use of a 90 Degree elbow can be taken right off the top of the Collector Box. Not Shown in Diagram.



Top Vent—Three Elbows

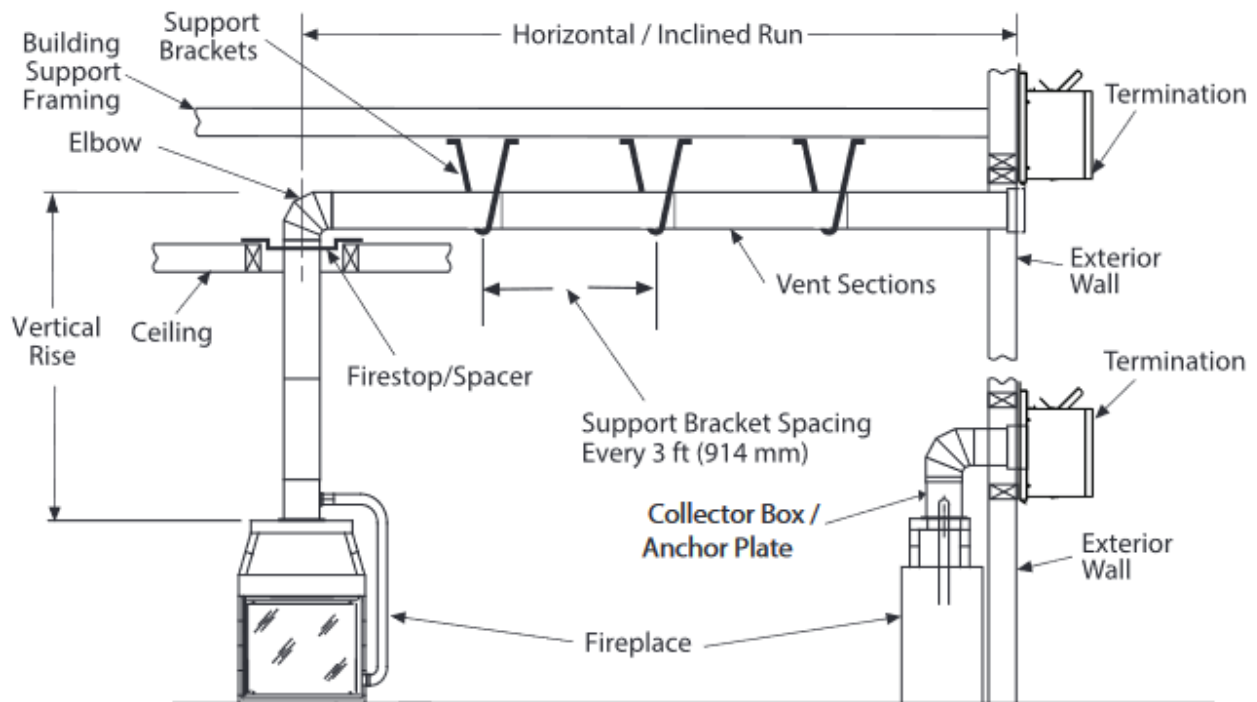
Table B			
H + H ₁ Maximum		V Minimum	
feet	(meter)	feet	(meter)
10	(3.1)	2.5	(0.762)
15	(4.65)	3.5	(1.06)
20	(6.2)	4.5	(1.37)

$H + H_1 = 20$ feet (6.2 m) Max.
 $V + V_1 + H + H_1 = 40$ ft. (12.4 m) Max.
 $V + V_1 = 11$ feet (3.3 meters) Min. for 46 in. units
 $V + V_1 = 10.5$ feet (3.2 meters) Min. for 48 in. units

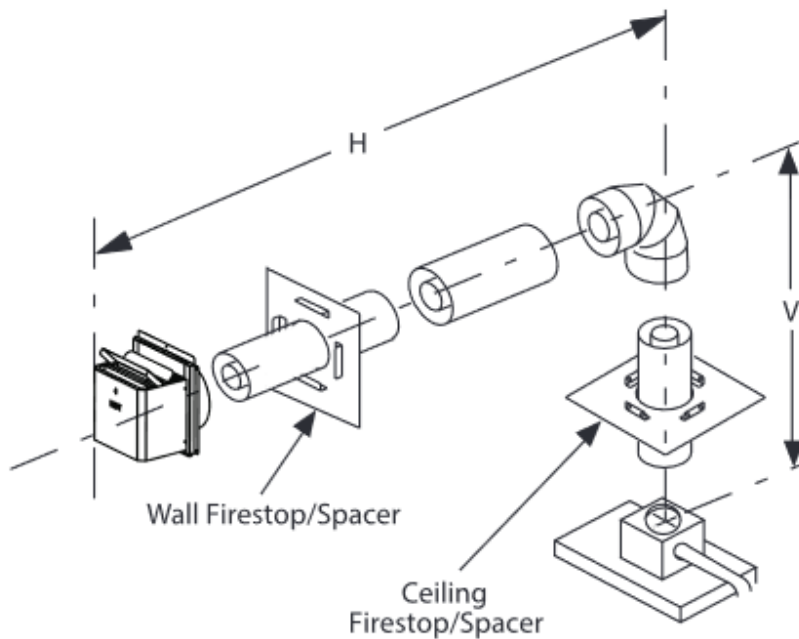
Example: If 20 feet of (H+ H₁) horizontal vent run is needed, then 4-1/2 feet minimum of (V) vertical vent will be required.

FIGURE 3—DIRECT VENT FIREPLACE DIMENSIONS MODELS MDV 80D46 AND MDV 80D48 (continued)

Venting System - Horizontal Installation



**Square Termination
One 90 Degree Elbow**



H Maximum		V Minimum	
feet	(meter)	feet	(meter)
3.5	(1.07)	2.5	(0.762)
6.5	(1.98)	3.5	(1.07)
8.5	(2.6)	4.5	(1.37)
10.5	(3.2)	5.5	(1.68)
12.5	(3.8)	6.5	(1.98)
14.5	(4.4)	7.5	(2.3)
16.5	(5.0)	8.5	(2.6)
18.5	(5.6)	9.5	(2.9)
20	(6.0)	10	(3.0)
V + H = 40 feet (12.4 m) Max.			
H = 20 ft. (6.2 m) Max.			

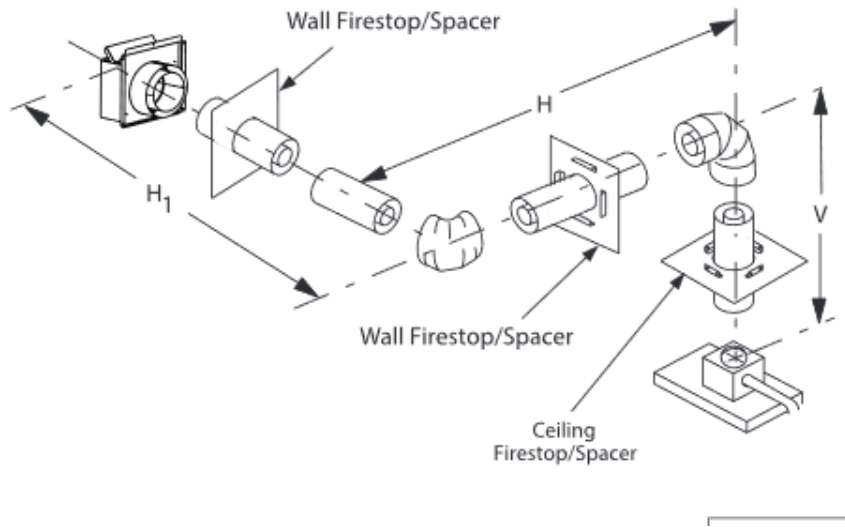
Example: If 20 feet of (H) horizontal vent run is needed, then 10 feet minimum of (V) vertical vent will be required.

FIGURE 3—DIRECT VENT FIREPLACE DIMENSIONS MODELS MDV 80D46 AND MDV 80D48 (continued)

Venting System - Horizontal Figures/Tables

Square Termination Two 90 Degree Elbow

Table D			
H + H ₁ Maximum		V Minimum	
feet	(meter)	feet	(meter)
3.5	(1.07)	2.5	(0.762)
6.5	(1.98)	3.5	(1.07)
8.5	(2.6)	4.5	(1.37)
10.5	(3.2)	5.5	(1.68)
12.5	(3.8)	6.5	(1.98)
14.5	(4.4)	7.5	(2.3)
16.5	(5.0)	8.5	(2.6)
18.5	(5.6)	9.5	(2.9)
20	(6.0)	10	(3.0)
V + H + H ₁ = 40 feet (12.4 m) Max. H + H ₁ = 20 ft. (6.2 m) Max.			



Square Termination Three 90 Degree Elbow

Table E	
H + H ₁ = 20 feet (6.2 m) Max.	
V + V ₁ + H + H ₁ = 40 ft. (12.4 m) Max.	
V = 2.5 feet Min. (0.762 m)	
V + V ₁ = 11 feet (3.35 m) Min. for 46 in. units	
V + V ₁ = 10.5 feet (3.2 m) Min. for 48 in. units	

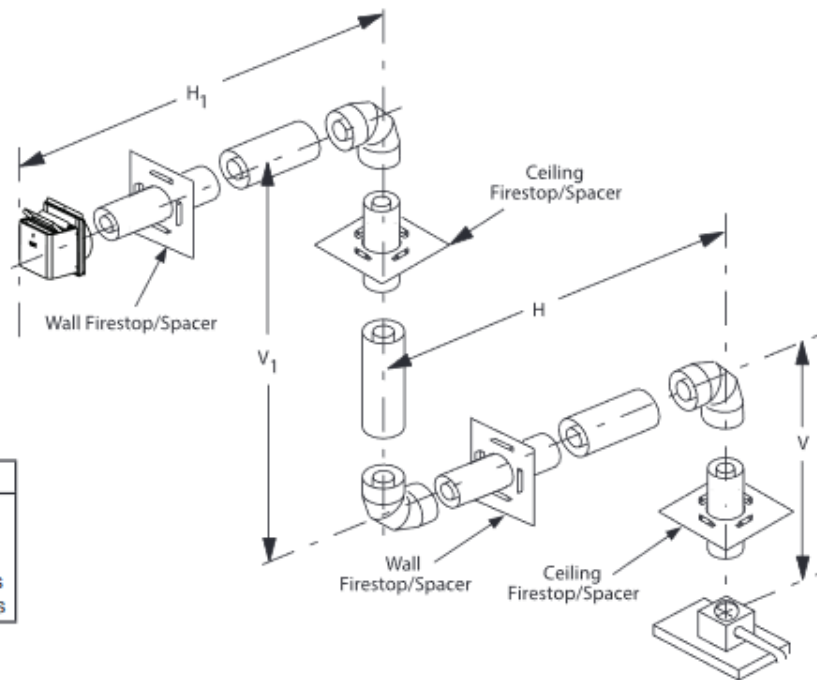
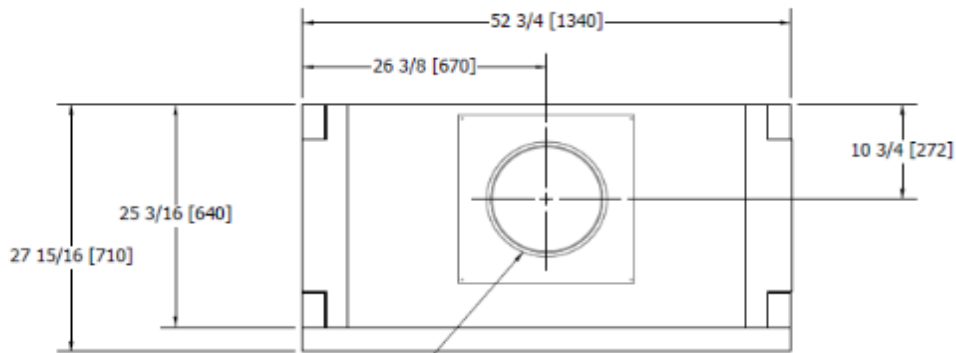


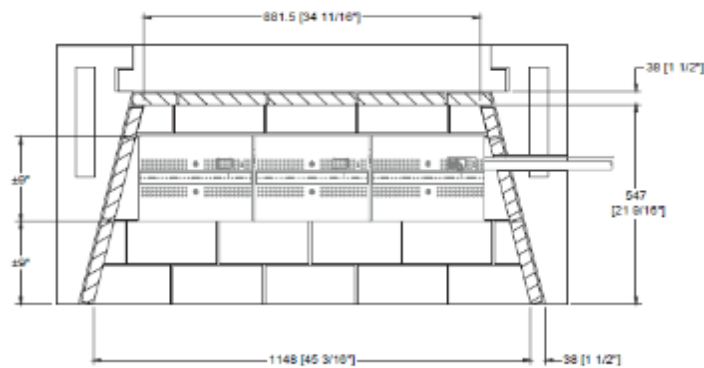
FIGURE 3—DIRECT VENT FIREPLACE DIMENSIONS MODELS MDV 80D46 AND MDV 80D48 (continued)

Isokern Maximus Linear Series 48" Open Front (82L48)



Ø345mm [13 9/16"] FLUE OUTLET.
 12" B-VENT PIPE W/ DOWN-DRAFT
 DIVERTER; ENERVEX 12" MFD,
 AND RS012 FAN REQUIRED.

TOP VIEW



Plan View

Front View

Side View

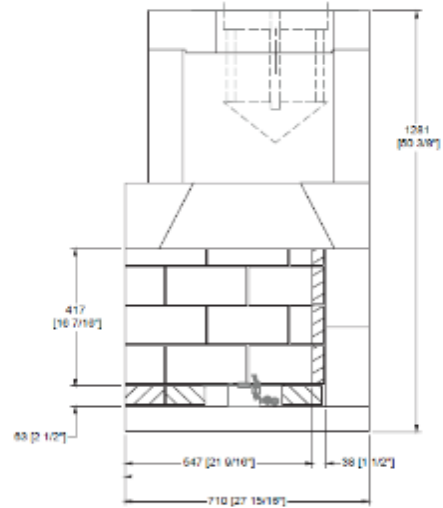
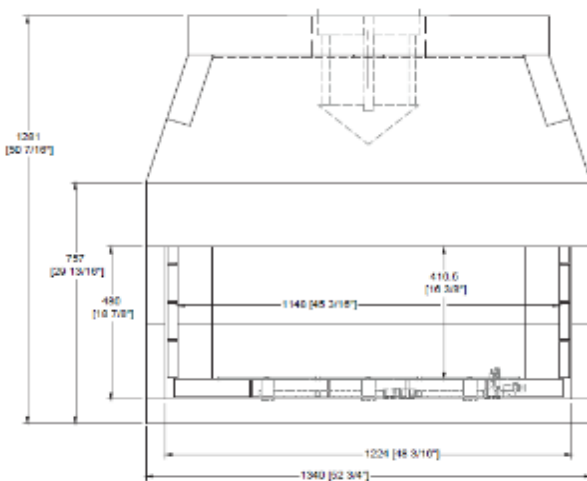


FIGURE 4—VENTED GAS-FIRED FIREPLACES MAXIMUS LINEAR SERIES OPEN FRONT

Isokern Maximus Linear Series 72" Open Front (82L72)

Steel angle: 6" x 6" x 1/2" cut to span firebox opening. This item is not included in the components and can be sourced locally

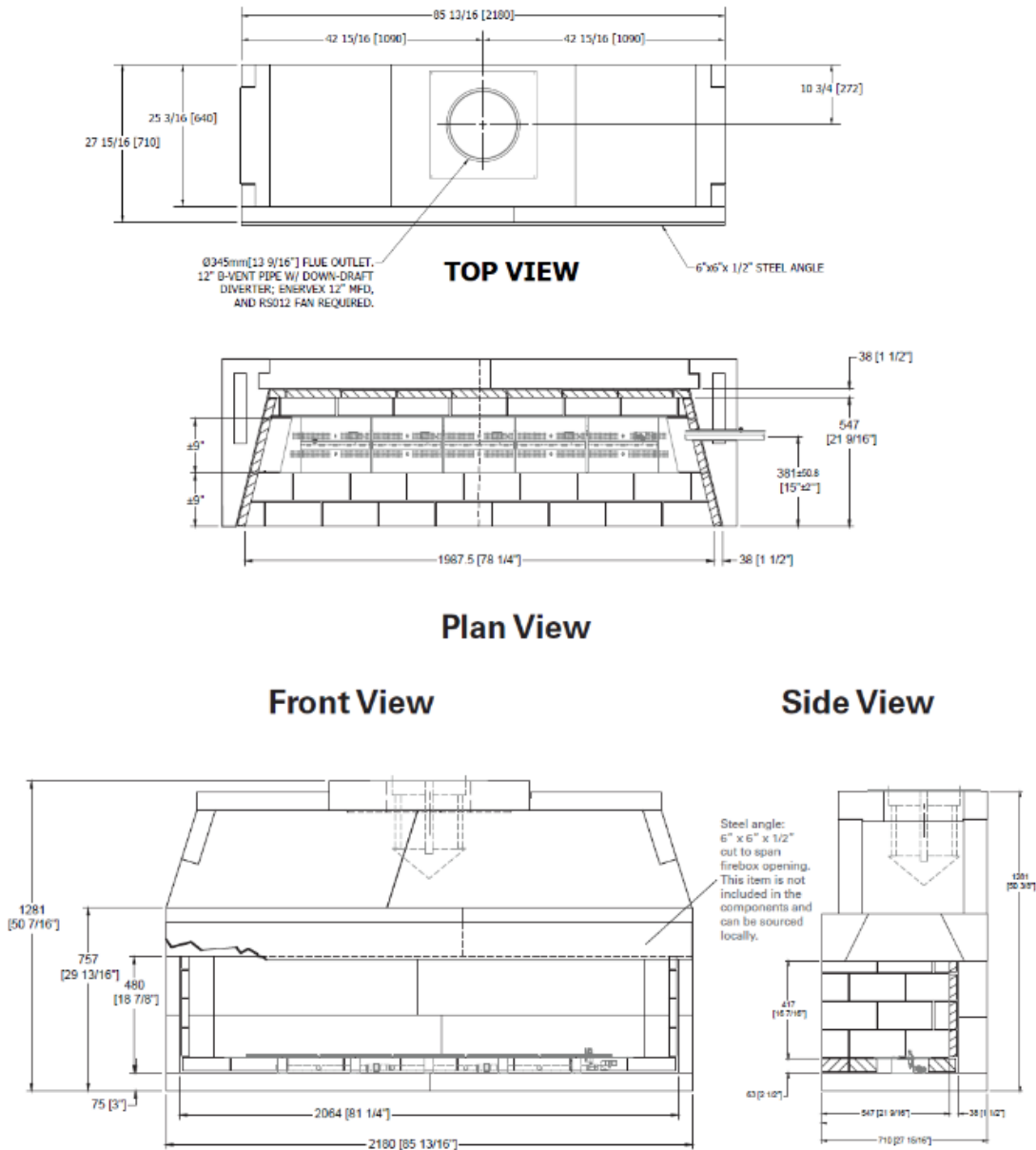
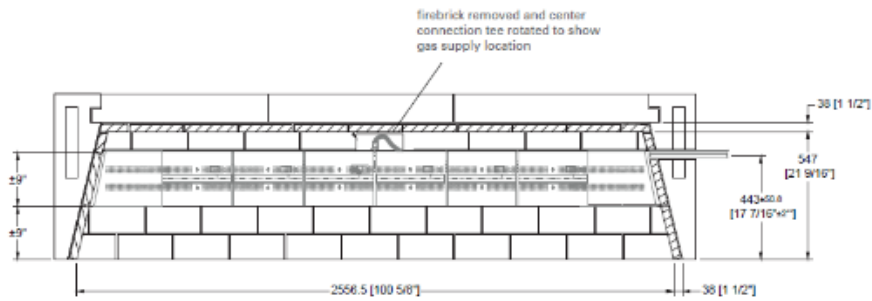
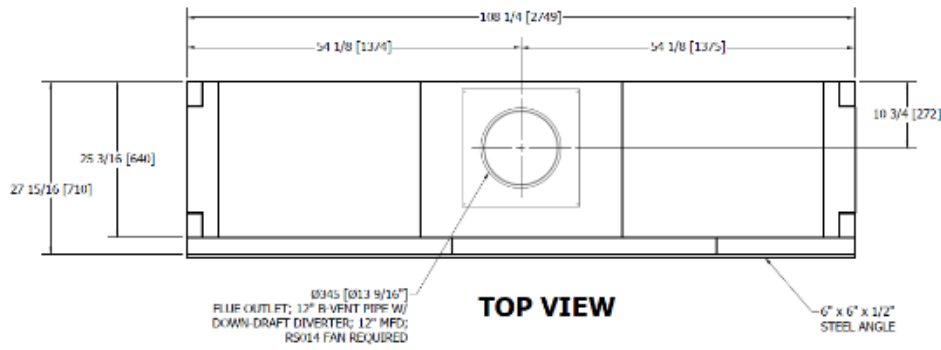


FIGURE 4—VENTED GAS-FIRED FIREPLACES MAXIMUS LINEAR SERIES OPEN FRONT (continued)

Isokern Maximus Linear Series 96" Open Front (82L96)

Steel angle: 6" x 6" x 1/2" cut to span firebox opening. This item is not included in the components and can be sourced locally



Plan View

Front View

Side View

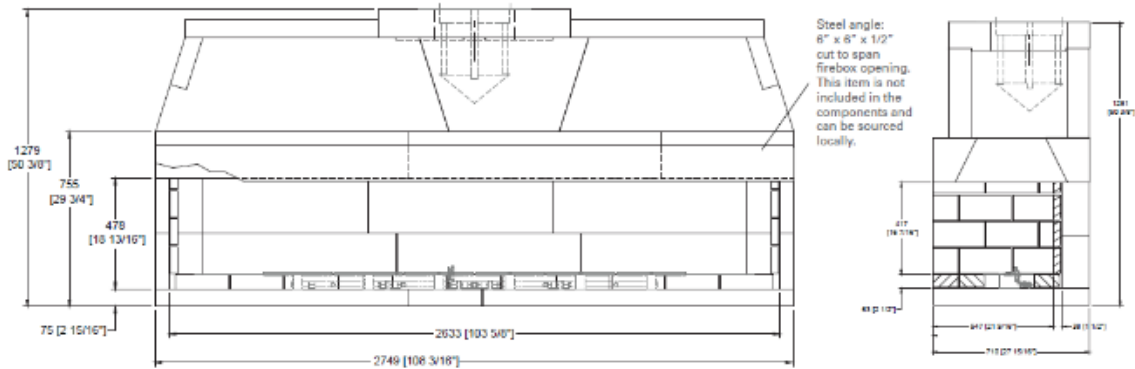
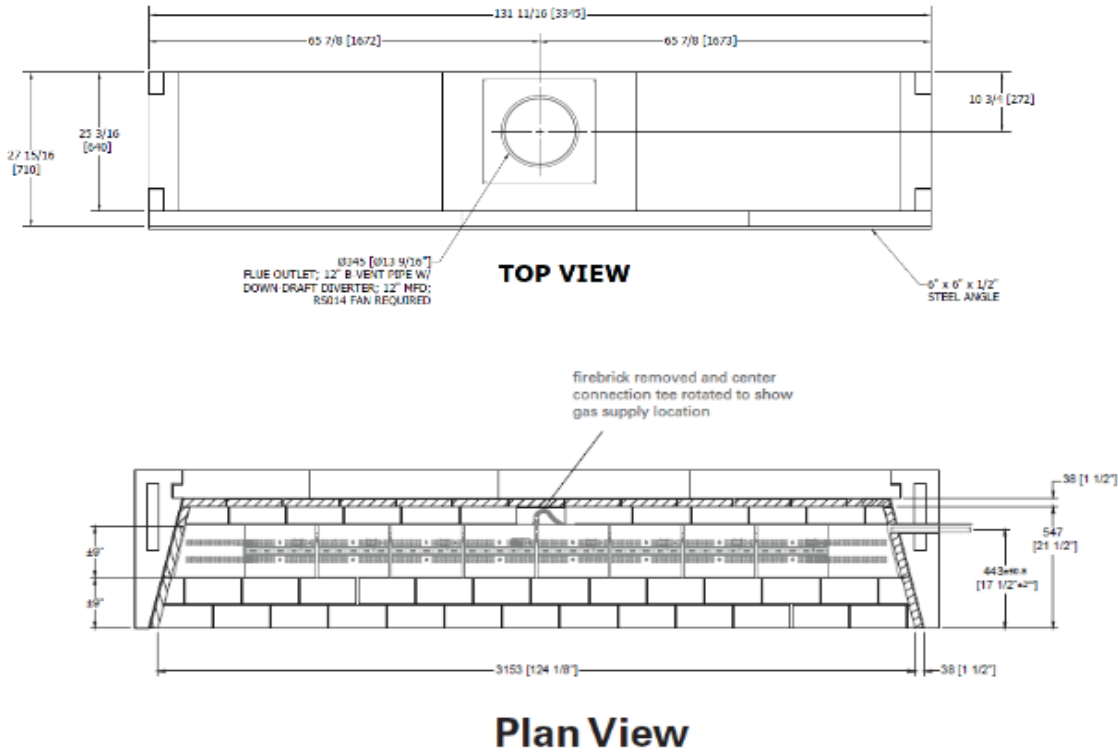


FIGURE 4— VENTED GAS-FIRED FIREPLACES MAXIMUS LINEAR SERIES OPEN FRONT (continued)

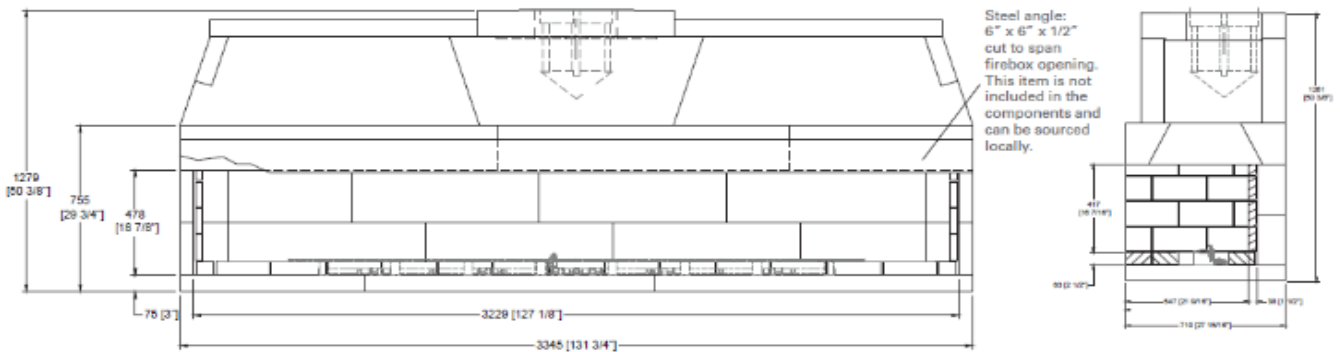
Isokern Maximus Linear Series 120" Open Front (82L120)

Steel angle: 6" x 6" x 1/2" cut to span firebox opening. This item is not included in the components and can be sourced locally



Front View

Side View



Weight estimates:

1. Maximus Linear Series unit weights for models:
 - a. 82L48: 1,275 lb (no burner, flue, accessories)
 - b. 82L72: 1,990 lb (includes steel angle but no burner, flue, accessories)
 - c. 82L96: 2,450 lb (includes steel angle but no burner, flue, accessories)
 - d. 82L120: 2,997 lb (includes steel angle but no burner, flue, accessories)
2. Approximate weight of log set: 100 lb.
3. Firebox brick and Adhesive: 350 lbs. - 1800 lbs. depending on brick size and pattern

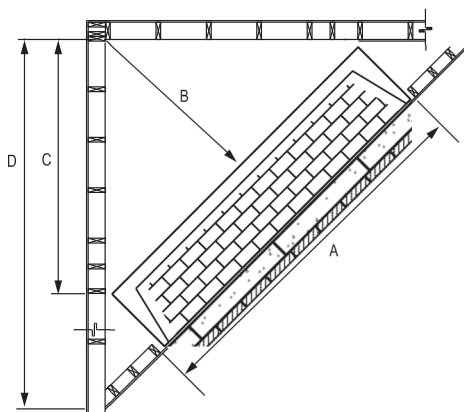
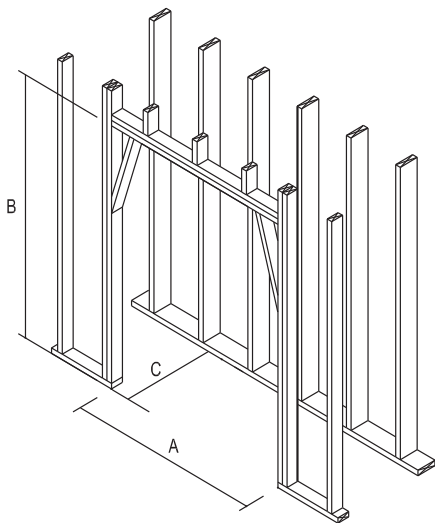
FIGURE 4—VENTED GAS-FIRED FIREPLACES MAXIMUS LINEAR SERIES OPEN FRONT (continued)

Maximus Linear Series Fireplace Rough Framing Dimensions

Linear Series	Width - A	Height - B	Depth - C
82L48	56"	51"	29 1/2"
82L72	89"	51"	29 1/2"
82L96	112"	51"	29 1/2"
82L120	135"	51"	29 1/2"

Notes:

1. **B** includes the 3"-thick base plate.
2. "Raised hearth" requires additional rough opening height at **B** equal to the height of the raised hearth detail.
3. Rough framing dimension for depth **C** allows for the required 1 1/2" clearance at the back of the fireplace. 29 1/2" is only for an interior wall as most exterior wall framings have insulation. Even if the wall is 2x6', the foam sprayed expands, so typically 31" is allowed on an exterior wall.



Corner Installation Framing Dimensions

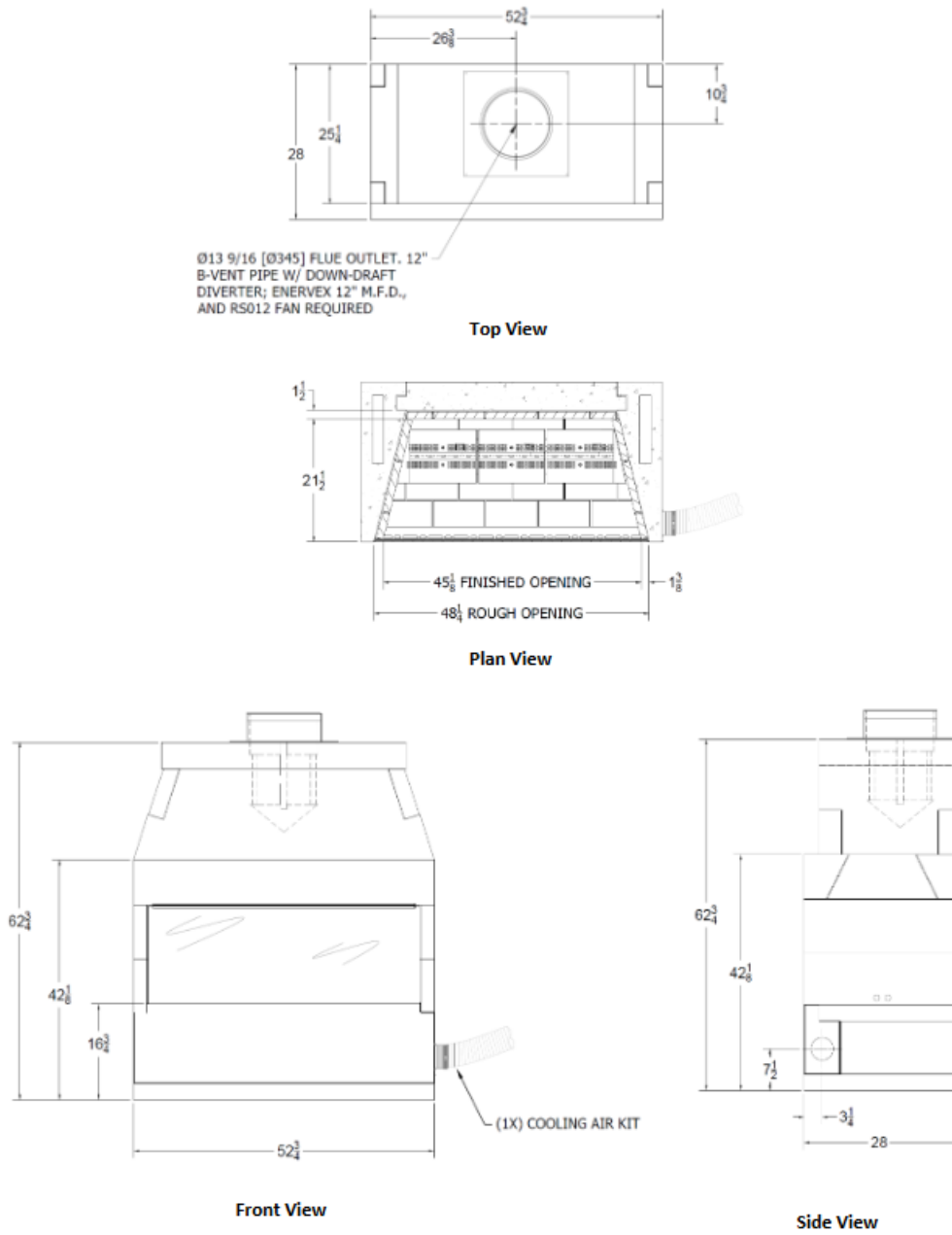
The following chart of dimensions detail the positioning of a Maximus Linear Series fireplace installed in a corner

Linear	A	B	C	D
82L48	56"	56-1/2"	38-3/4"	79-7/8"
82L72	89"	73"	62-1/4"	103-1/4"
82L96	112"	84-1/8"	78"	119"
82L120	135"	95-7/8"	94-5/8"	135-5/8"

FIGURE 5—VENTED GAS-FIRED FIREPLACES MAXIMUS LINEAR SERIES OPEN FRONT ROUGH FRAMING DIMENSIONS

Isokern Maximus Linear Series with Glass Front Kit 48" (82L48-GFK)

You will need to order the 82L48 and GFK-48 to build the complete Glass Front Fireplace



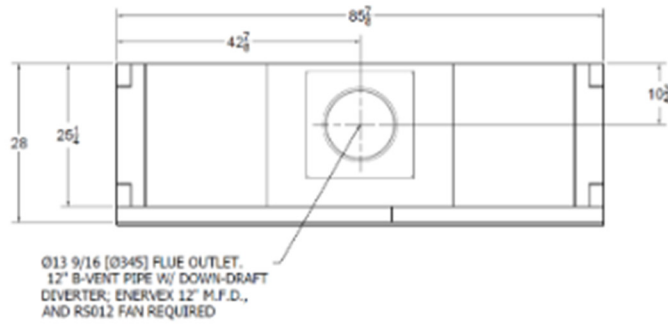
Maximus Linear Series Venting Overview

FIGURE 6—VENTED GAS-FIRED FIREPLACES MAXIMUS LINEAR SERIES GLASS FRONT

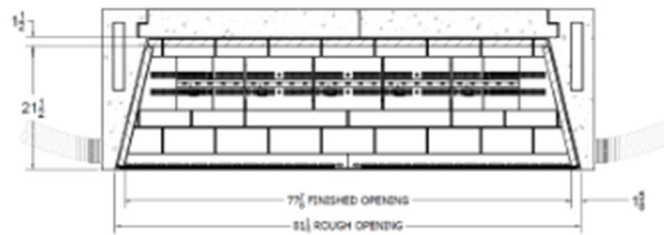
Isokern Maximus Linear Series with Glass Front Kit 72" (82L72-GFK)

You will need to order the 82L72 and GFK-72 to build the complete Glass Front Fireplace

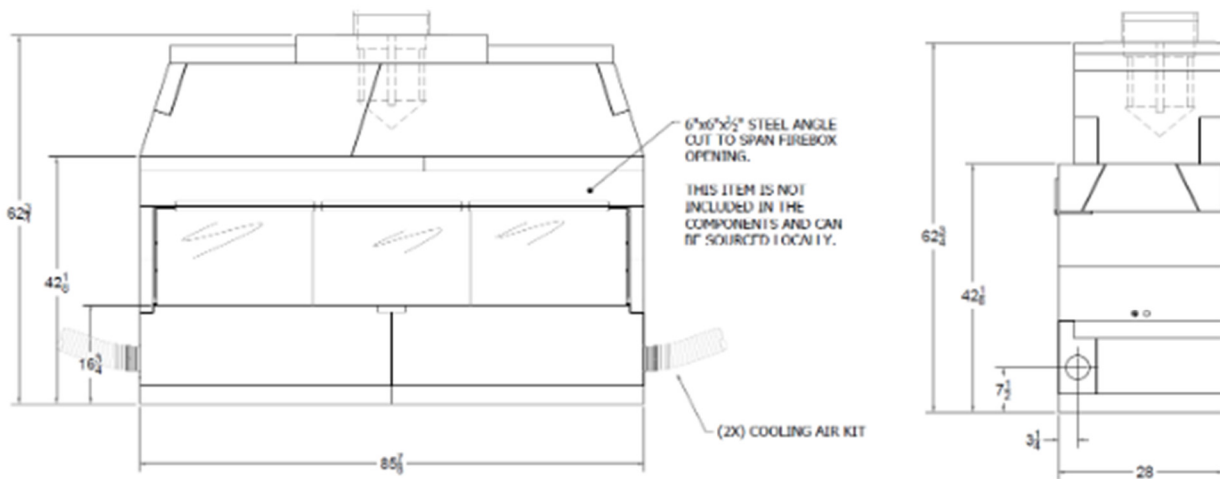
Steel angle: 6" x 6" x 1/2" cut to span firebox opening. This item is not included in the components and can be sourced locally



Top View



Plan View



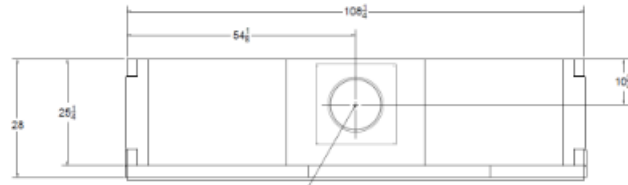
Front View

Side View

FIGURE 6—VENTED GAS-FIRED FIREPLACES MAXIMUS LINEAR SERIES GLASS FRONT (continued)

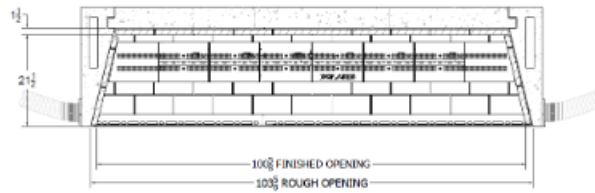
Isokern Maximus Linear Series with Glass Front Kit 96" (82L96-GFK)

You will need to order the 82L96 and GFK-96 to build the complete Glass Front Fireplace
 Steel angle: 6" x 6" x 1/2" cut to span firebox opening. This item is not included in the components and can be sourced locally

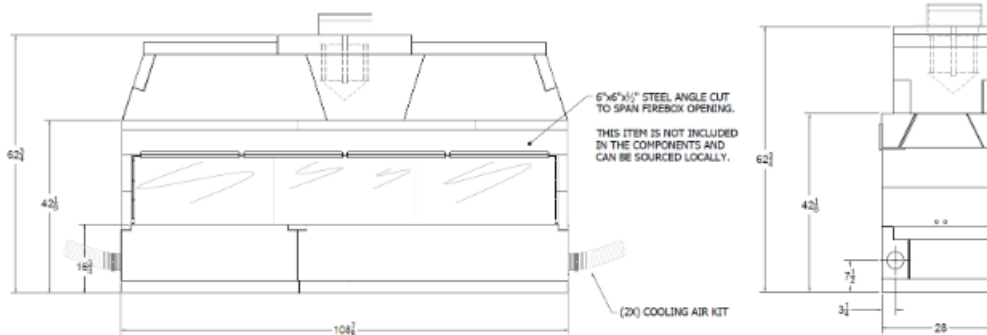


METAL-FAB 12" B-VENT PIPE W/
 DOWN-DRAFT DIVERTER, ENERVEX 12" MFD,
 RS 012 FAN, AND ADC 100 CONTROL W/ POS
 REQUIRED.

Top View



Plan View



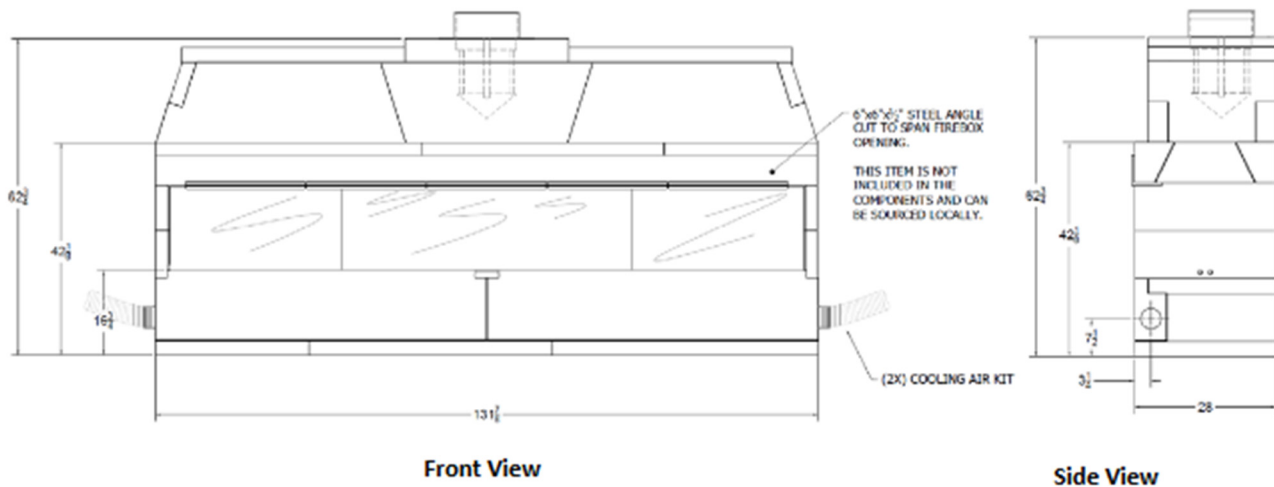
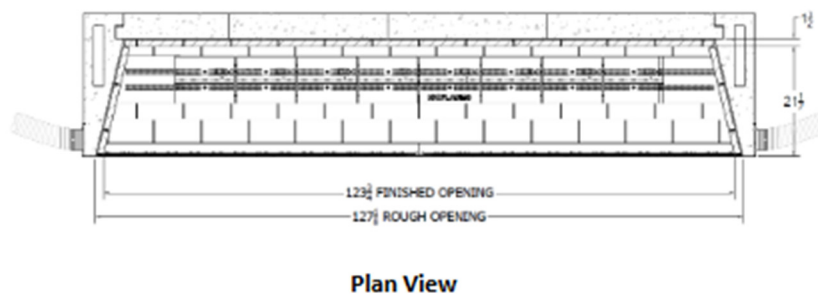
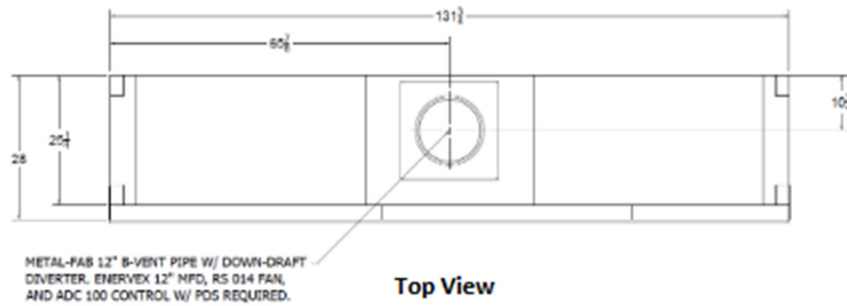
Front View

Side View

FIGURE 6—VENTED GAS-FIRED FIREPLACES MAXIMUS LINEAR SERIES GLASS FRONT (continued)

Isokern Maximus Linear Series with Glass Front Kit 120" (82L120-GFK)

You will need to order the 82L120 and GFK-120 to build the complete Glass Front Fireplace
 Steel angle: 6" x 6" x 1/2" cut to span firebox opening. This item is not included in the components and can be sourced locally



Isokern unit weights:

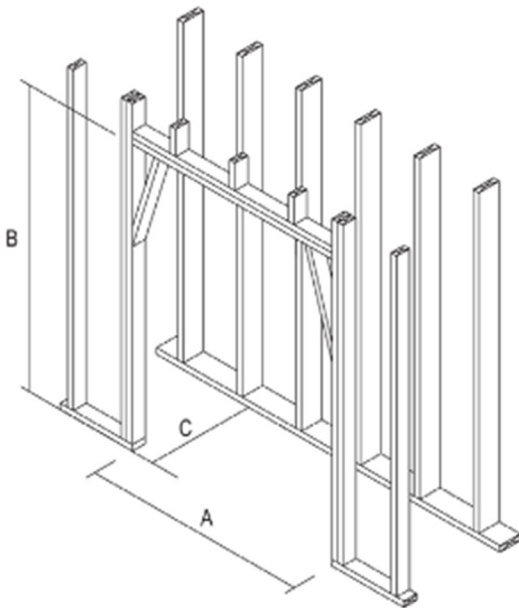
- a) Maximus Linear w/ Glass Front - 48: 1,652 lbs. (no burner, flue, accessories)
- b) Maximus Linear w/ Glass Front - 72: 2,578 lbs. (includes steel angle; but no burner, flue, accessories)
- c) Maximus Linear w/ Glass Front - 96: 3,132 lbs. (includes steel angle; but no burner, flue, accessories)
- d) Maximus Linear w/ Glass Front - 120: 3,844 lbs. (includes steel angle; but no burner, flue, accessories)

Approximate weight of log set: 100 lbs.

Fire brick and Adhesive: 350 lbs. - 1800 lbs. depending on brick size and pattern

FIGURE 6—VENTED GAS-FIRED FIREPLACES MAXIMUS LINEAR SERIES GLASS FRONT (continued)

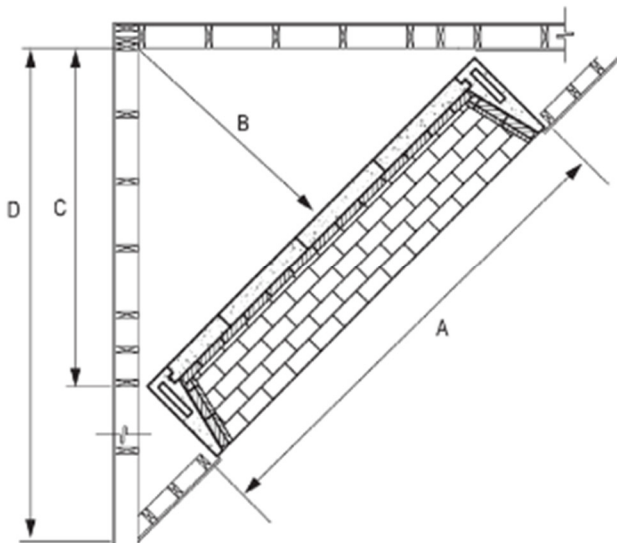
Rough Framing Dimensions



TYPICAL INSTALLATION FRAMING DIMENSIONS			
Model	A - Width	B - Height	C - Depth
82L48	66 1/2"	64 1/2"	29-1/2"
82L72	110"	64 1/2"	29-1/2"
82L96	133"	64 1/2"	29-1/2"
82L120	156"	64 1/2"	29-1/2"

NOTES:

- 1) "B" includes the required 3" thick base plate.
- 2) If the Maximus Linear installation is to be elevated, this "Raised hearth" installation will require additional rough opening height at "B" that is equal to the height of the raised hearth.
- 3) Rough framing dimension for depth "C" allows for the required 1-1/2" clearance at the back of the fireplace. 29-1/2" is only for an interior wall as most exterior wall framings have insulation. Even if the wall is 2x6', the foam sprayed expands, so typically 31" is allowed on an exterior wall (Figure 4).



CORNER INSTALLATION FRAMING DIMENSION

The following chart of dimensions detail the positioning of a LINEAR Series fireplace in a corner (Figure 5)

LINEAR	A	B	C	D
Model 48	66 1/2"	56 1/2"	38 3/4"	79 7/8"
Model 72	110"	73"	62 1/4"	103 1/4"
Model 96	133"	84 1/8"	78"	119"
Model 120	156"	95 7/8"	94 5/8"	135 5/8"

FIGURE 7— VENTED GAS-FIRED FIREPLACES MAXIMUS LINEAR SERIES GLASS FRONT ROUGH FRAMING DIMENSIONS

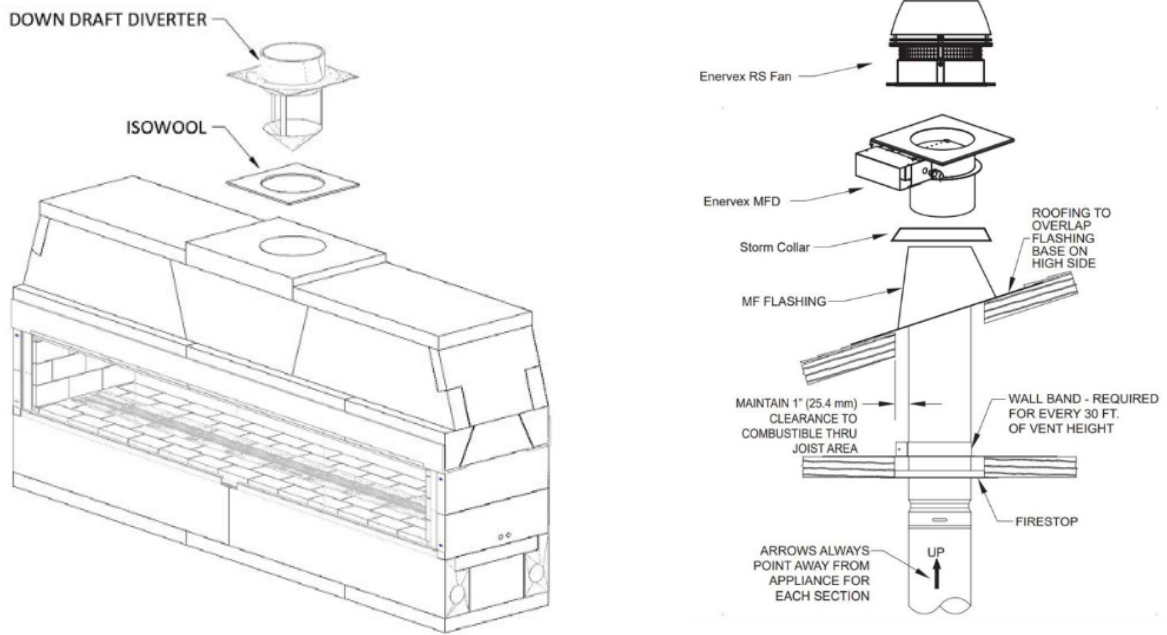
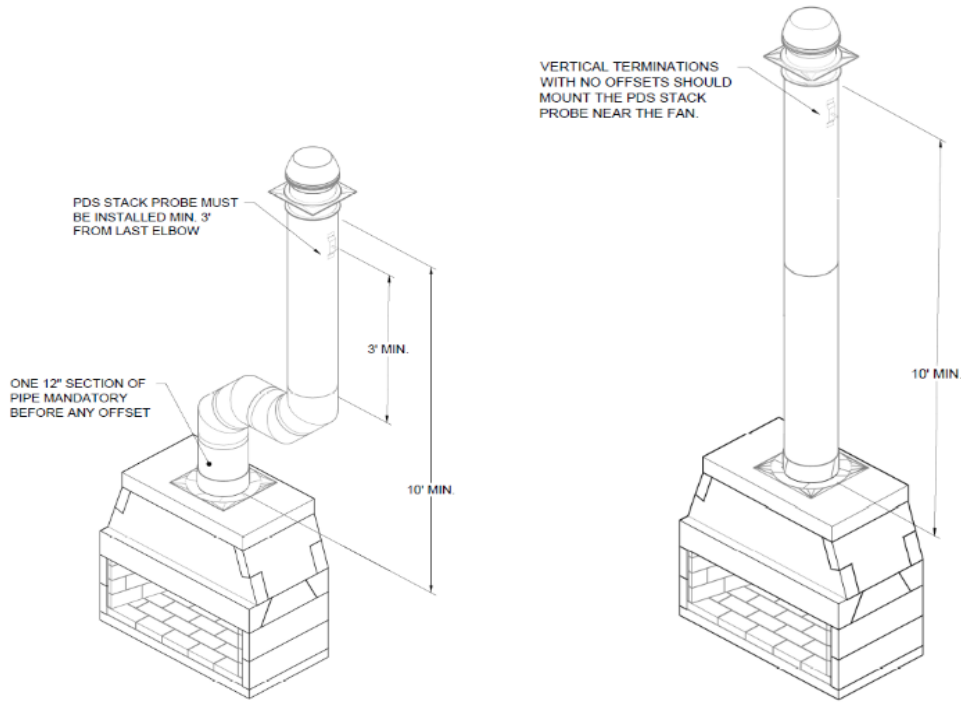


FIGURE 8—VERTICAL AND HORIZONTAL TERMINATION SYSTEMS FOR MAXIMUS LINEAR SERIES

Vertical Termination Systems – Vent Configurations

NOTE: A B-Vent support plate (MSP) is required if vertical height exceeds 30 feet. Maximum of 30 feet between supports.

The vertical vent system will be terminated with a mechanical draft system



Horizontal Termination Systems – Vent Configurations

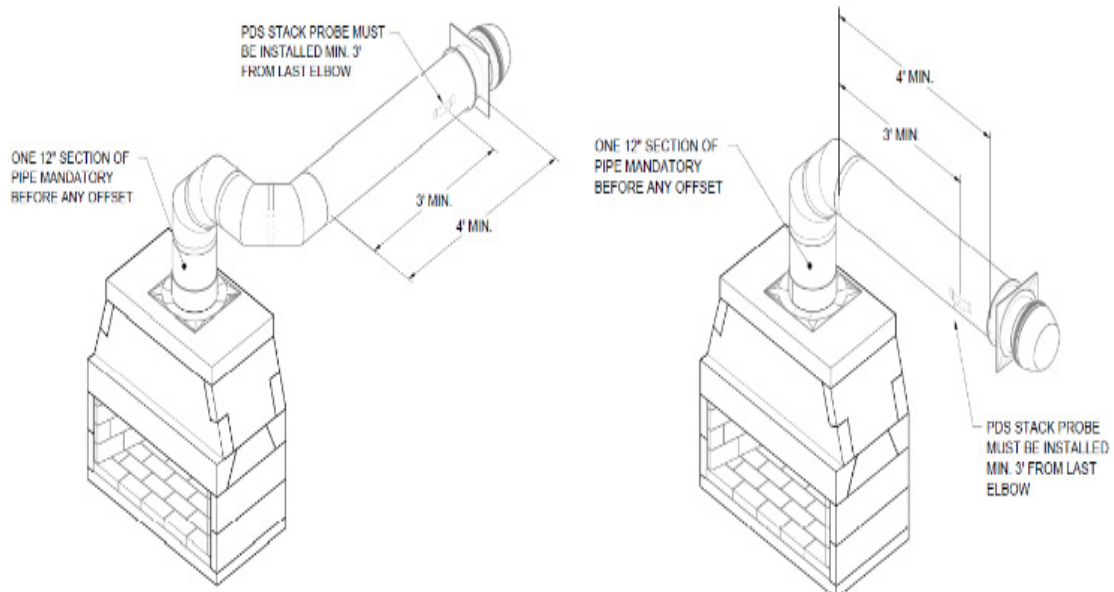


FIGURE 8—VERTICAL AND HORIZONTAL TERMINATION SYSTEMS FOR MAXIMUS LINEAR SERIES (continued)

DIVISION: 10 00 00—SPECIALTIES
Section: 10 31 00—Manufactured Fireplaces

REPORT HOLDER:

EARTHCORE INDUSTRIES, LLC

EVALUATION SUBJECT:

ISOKERN MODELS M3600 (VF-36), M4200 (VF-42), AND M4600 (VF-46) UNVENTED GAS APPLIANCE ENCLOSURES; ISOKERN MODELS IBV-36 (80B36) AND IBV-46 (80B46) VENTED GAS-FIRED FIREPLACES; ISOKERN MAXIMUS LINEAR SERIES GAS-FIRED FIREPLACE MODELS 82L48, 82L72, 82L96, 82L120, 82L48ST, 82L72ST, 82L96ST AND 82L120ST; MAXIMUS DIRECT VENT GAS-FIRED FIREPLACE MODELS MDV 80D46 and MDV 82D48

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that the Isokern gas-fired fireplaces and unvented gas appliance enclosures described in ICC-ES evaluation report [ESR-4873](#), have also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2020 *City of Los Angeles Building Code* (LABC)
- 2020 *City of Los Angeles Residential Code* (LARC)

2.0 CONCLUSIONS

The Isokern gas-fired fireplaces and unvented gas appliance enclosures, described in Sections 2.0 through 7.0 of the evaluation report [ESR-4873](#), comply with LABC Chapters 13 and 28 and the LARC, and are subjected to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The Isokern gas-fired fireplaces and unvented gas appliance enclosures, described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-4873](#).
- The design, installation, conditions of use and identification are in accordance with the 2018 *International Building Code*® (IBC) and 2018 *International Residential Code*® (IRC) provisions noted in the evaluation report [ESR-4873](#).
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16 and 17, as applicable.
- The Isokern gas-fired fireplaces and unvented gas appliance enclosures are not approved for use with solid fuels such as wood logs, manufactured logs or coal.
- When required by the California Energy Code (CEC), the combustible air intake must be as specified in the evaluation report [ESR-4873](#).
- The exterior air supply system to the fireplaces must comply with the requirements noted in 2020 LABC Section 2111.14.1 or 2020 LARC Section R1006, as applicable.
- The installation of the Isokern gas-fired fireplaces and unvented gas appliance enclosures is limited to base floor and seismic parameters noted in Table 1 of the evaluation report [ESR-4873](#).

- Use of the Isokern gas-fired fireplaces and unvented gas appliance enclosures, when subject to the 2020 City of Los Angeles Green Building Code, must conform to the applicable section of 4.503.1 or 5.503.1 that requires the installation of a direct vent or sealed combustion chamber.
- The Isokern fireplace and unvented gas appliance enclosures installations in new or existing construction must conform to the provisions of South Coast Air Quality Management District Rule 445.
- The Isokern fireplaces and unvented gas appliance enclosures must be installed in accordance with the manufacturer's published installation instructions, the 2020 LABC or 2020 LARC, and the evaluation report [ESR-4873](#). A copy of the manufacturer's published installation instructions must be available at the jobsite.

This supplement expires concurrently with the evaluation report, reissued August 2023.

DIVISION: 10 00 00—SPECIALITIES

Section: 10 31 00—Manufactured Fireplaces

REPORT HOLDER:

EARTHCORE INDUSTRIES, LLC

EVALUATION SUBJECT:

ISOKERN MODELS M3600 (VF-36), M4200 (VF-42), AND M4600 (VF-46) UNVENTED GAS APPLIANCE ENCLOSURES; ISOKERN MODELS IBV-36 (80B36) AND IBV-46 (80B46) VENTED GAS-FIRED FIREPLACES; ISOKERN MAXIMUS LINEAR SERIES GAS-FIRED FIREPLACE MODELS 82L48, 82L72, 82L96, 82L120, 82L48ST, 82L72ST, 82L96ST AND 82L120ST; MAXIMUS DIRECT VENT GAS-FIRED FIREPLACE MODELS MDV 80D46 and MDV 82D48

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that the Isokern gas-fired fireplaces and unvented gas appliance enclosures, described in ICC-ES evaluation report ESR-4873, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2019 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2019 *California Residential Code* (CRC)

- 2019 *California Energy Code* (CEC)

2.0 CONCLUSIONS**2.1 CBC:**

The Isokern gas-fired fireplaces and unvented gas appliance enclosures, described in Sections 2.0 through 7.0 of the evaluation report ESR-4873, comply with CBC Chapters 13 and 28, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 13 and 28, as applicable.

2.1.1 OSHPD:

The applicable OSHPD Sections of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections of the CBC are beyond the scope of this supplement.

2.2 CRC:

The Isokern gas-fired fireplaces and unvented gas appliance enclosures, described in Sections 2.0 through 7.0 of the evaluation report ESR-4873, comply with CRC, provided the design and installation are in accordance with the 2018 *International Residential Code*® (IRC) provisions noted in the evaluation report and the additional requirements of CRC Parts IV, V and VI, as applicable.

2.3 CEC:

The Isokern gas-fired fireplaces and unvented gas appliance enclosures, described in Sections 2.0 through 7.0 of the evaluation report ESR-4873, comply with CEC, provided the design and installation are in accordance with the evaluation report ESR-4873 and the additional requirements of CEC Sections 110.1 and 110.5, as applicable. .

3.0 CONDITIONS OF USE

The Isokern gas-fired fireplaces and unvented gas appliance enclosures, described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report ESR-4873.
- The design, installation and inspection are in accordance with additional requirements of CBC Chapters 16 and 17, as applicable.
- The Isokern gas-fired fireplaces and unvented gas appliance enclosures are not approved for use with solid fuels such as wood logs, manufactured logs or coal.
- The installation of the Isokern gas-fired fireplaces and unvented gas appliance enclosures is limited to base floor and seismic parameters noted in Table 1 of the evaluation report ESR-4873.
- When required by the California Energy Code (CEC), the combustible air intake must be as specified in the evaluation report ESR-4873.
- The exterior air supply system to the fireplaces must comply with the requirements noted in 2019 CBC Section 2111.14.1 or 2019 CRC Section R1006, as applicable.
- The Isokern gas-fired fireplaces and unvented gas appliance enclosures must be installed in accordance with the manufacturer's published installation instructions, the 2019 CBC or 2019 CRC, and the evaluation report ESR-4873. A copy of the manufacturer's published installation instructions must be available at the jobsite.

This supplement expires concurrently with the evaluation report, reissued August 2023.