DIEDRICH™

ROASTERS

DR-25 ROASTER GUIDE

Diedrich Roasters LLC, 850 Hawthorne Ave., Ponderay, ID 83852
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Original Instructions
GUI-DR25-0001, Rev 005

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1. DR-25 ROASTER TECHNICAL DATA

DR-25 Roaster Information	Technical Data	
Green coffee capacity, min-max	34 - 55 lb	12.5 - 25 kg
Dimensions[1], maximum L x W[1] x H[4]	109 x 68 x 105 in	2769 x 1727 x 2667 mm
Crated shipping weight (approximate)	Actual shipping weight may vary	
Roaster, Main Electrical Panel Cooling Bin	2200 lbs	998 kg
Roast Air Cyclone	490 lbs	222 kg
Green Bean Funnel & Loader	450 lbs	204 kg
Destoner	420 lbs	191 kg
Shipping crate size, L x W x H		
Roaster and main electrical panel	96 x 48 x 88 in	2438 x 1219 x 2235 mm
Roast Air Cyclone	38 x 39 x 84 in	965 x 991 x 2134 mm
Green Bean Funnel & Loader	67 x 39 x 46 in	1702 x 991 x 1168 mm
Destoner	26 x 45 x 80 in	660 x 1143 x 2032 mm
Full batch roast time to 440F (227C)	Approximately 15 minutes	Approximately 15 minutes
Hourly output[2] (Four 15 minute roasts)	220 lb/hr.	100 kg/hr.
Roast Air, maximum	340 scfm	576 scmh
Cooling Bin Air, maximum	950 scfm	1610 scmh
Roast Air Cyclone outlet diameter	8 in	203 mm
Cooling Bin Blower outlet diameter	8 in	203 mm
Loader Exhaust Air, maximum	136 cfm	231 scmh
Loader Exhaust diameter	2 in	51 mm
Destoner Exhaust Air, maximum	136 cfm	231 scmh
Destoner Exhaust diameter	2 in	51 mm
Temperature high limit	475°F burner off, 485°F pilot off	246°C burner off, 252°C pilot off
Water Pressure	40 - 70 psi	2757 - 4826 mbar
Water Connection	¼ inch female NPT on the roaster	¼ inch female NPT on the roaster
Water flow to roaster at 40 psi/2.8 bar	1.5 gallons per minute	5.7 liters per minute
Water flow to chaff barrel at 40psi/2.8 bar	1.5 gallons per minute	5.7 liters per minute
Gas Information		
Gas Types (others if pre-approved)	Liquid Propane (LP) or Natural Gas (NG)	Liquid Propane (LP) or Natural Gas (NG)
Maximum consumption	150,000 BTU/hr	44 kW/hr
Typical consumption per roast[3]	28,000 BTU/roast	8.21 Kwh/roast
Inlet Pressure LP	1-5 PSI	69-345 mbar
Inlet Pressure NG	1-5 PSI	69-345 mbar
Inlet gas supply connection	½ in female NPT on the roaster	½ in female NPT on the roaster

Continued on the next page

[1] Dimensions rounded to the nearest inch. Maximum width is with HMI arm fully extended. See Top View, page 8.
[2] Hourly "green" coffee output. Thus, the weight has not been corrected for moisture loss.
[3] Based on a 15 minute roast to 440°F/204°C.
[4] Maximum height is with the optional loader attached. See Isometric View – Full System, page 12.

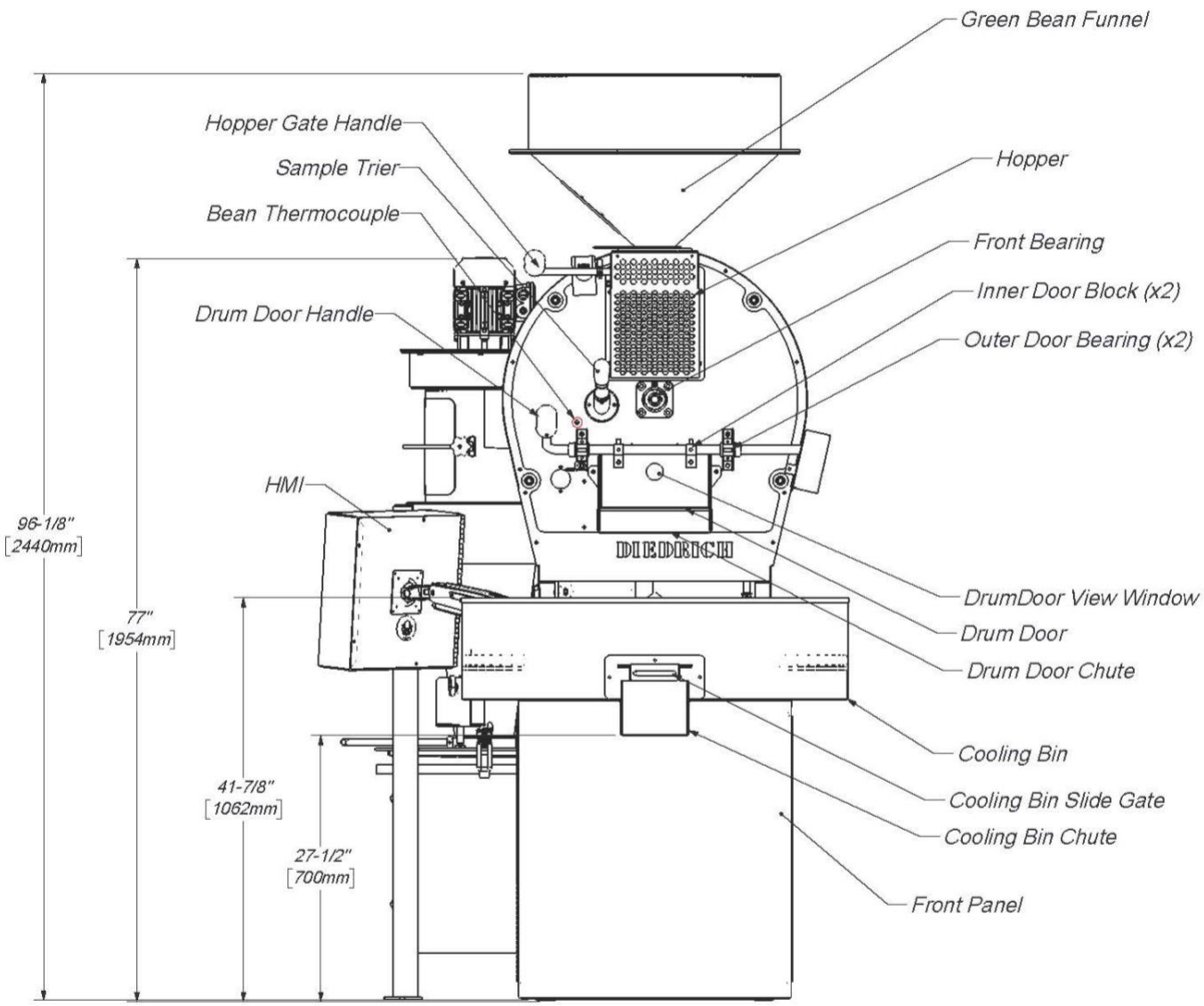
Electrical Information	
Volts AC	200-240V 1PH
Frequencies	50Hz or 60Hz
Full Load Amps; Roaster without loader Full Load Amps (FLA) at voltages other than what is shown will differ some.	13.3 Amps at 230V 1PH 50/60Hz
Full Load Amps; Roaster with loader Full Load Amps (FLA) at voltages other than what is shown will differ some.	21.1 Amps at 230V 1PH 50/60Hz
Main Breaker size; (The same for Roaster with or without loader)	25 Amps at 230V 1PH 50/60Hz 50

2. DR-25 ROASTER DRAWINGS

This section contains drawing views with dimensions and component descriptions. These drawing are valuable for familiarization with the Diedrich DR-25 roaster and for space and utility connection planning. There are also drawings of the DR-25 roaster with optional loader, destoner, cyclone, and afterburner.

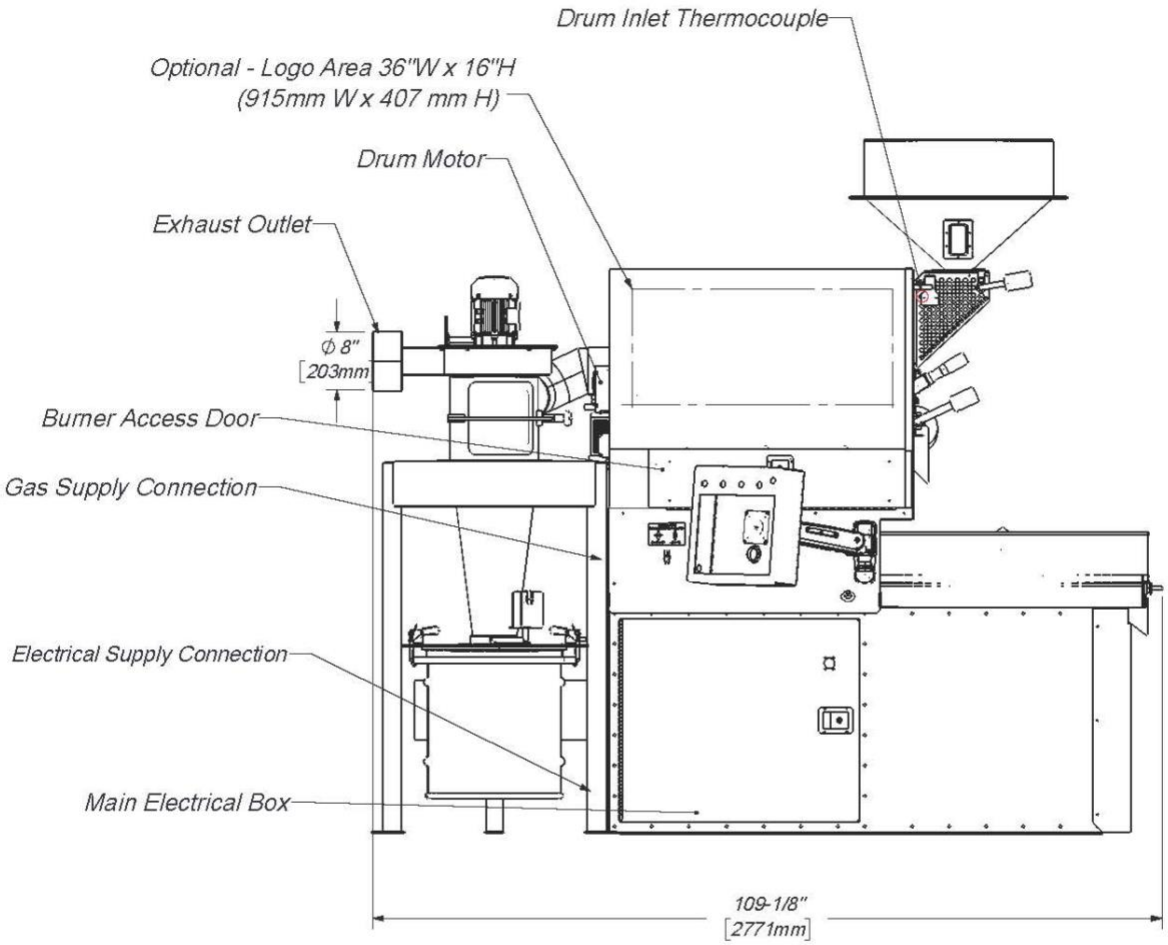
Dimensions and some details are subject to change.

These drawings each take a full page so the remainder of this page is intentionally blank.



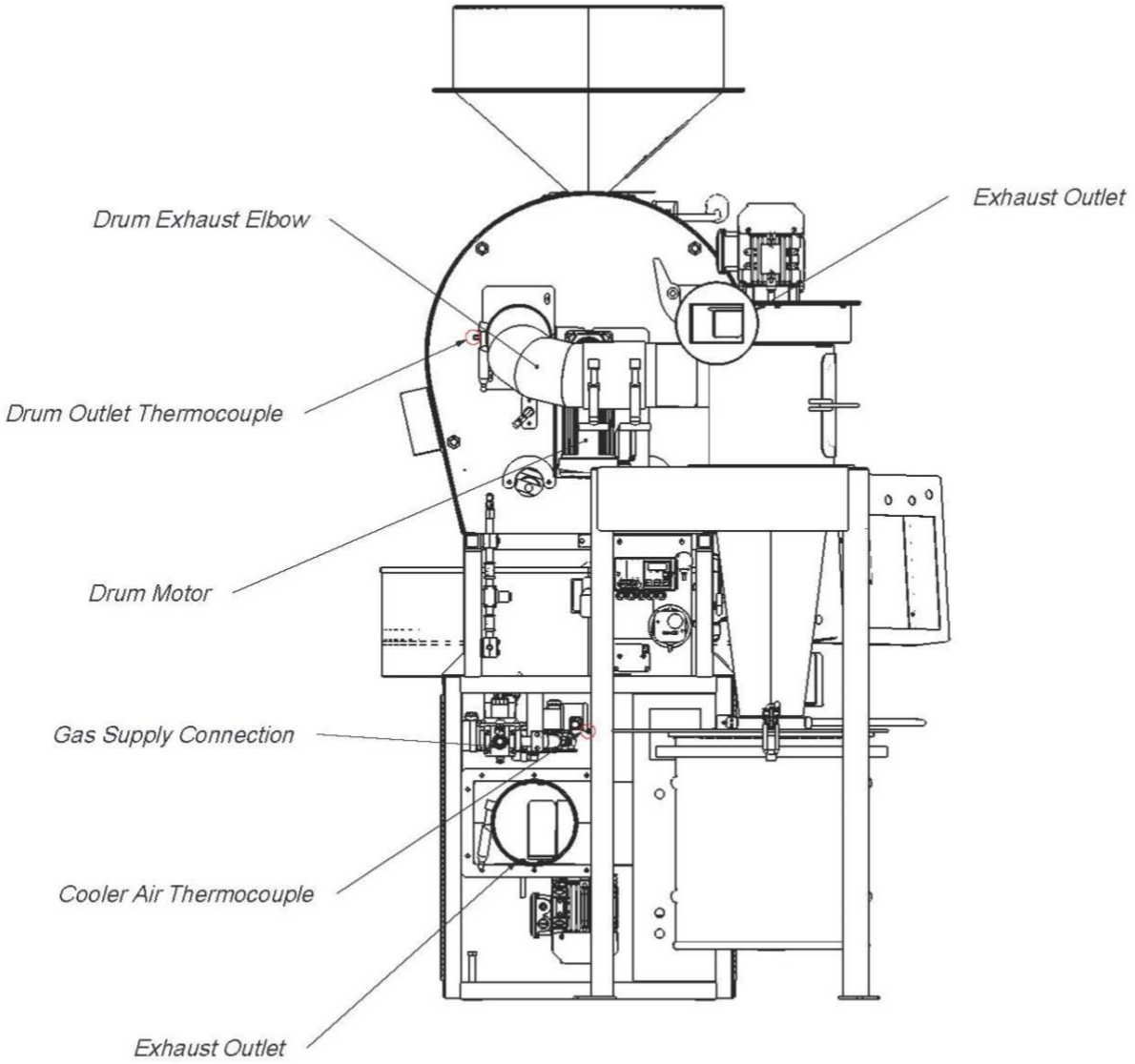
Front View

SCALE 1 : 16



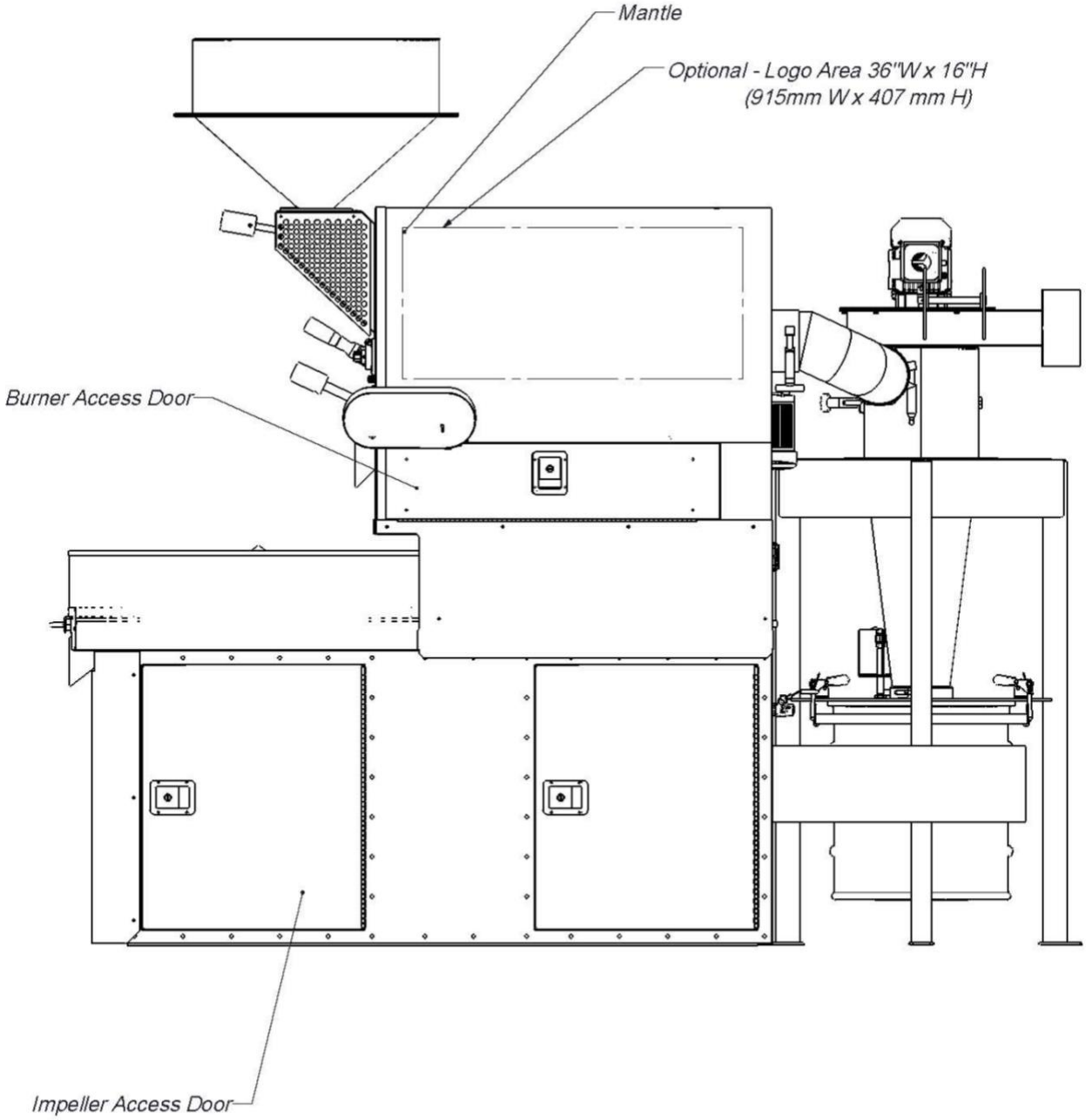
Left Side View

SCALE 1 : 24



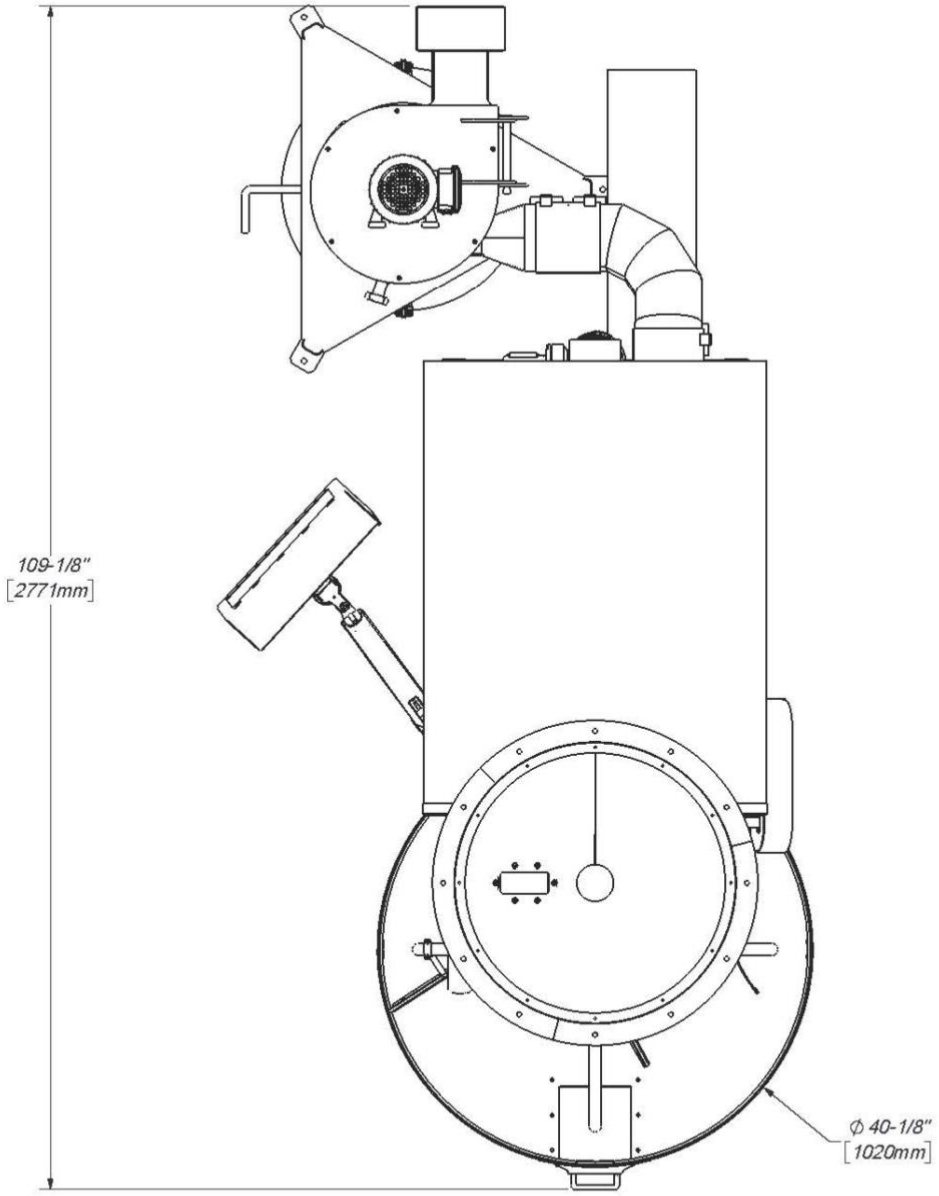
Rear View

SCALE 1 : 16



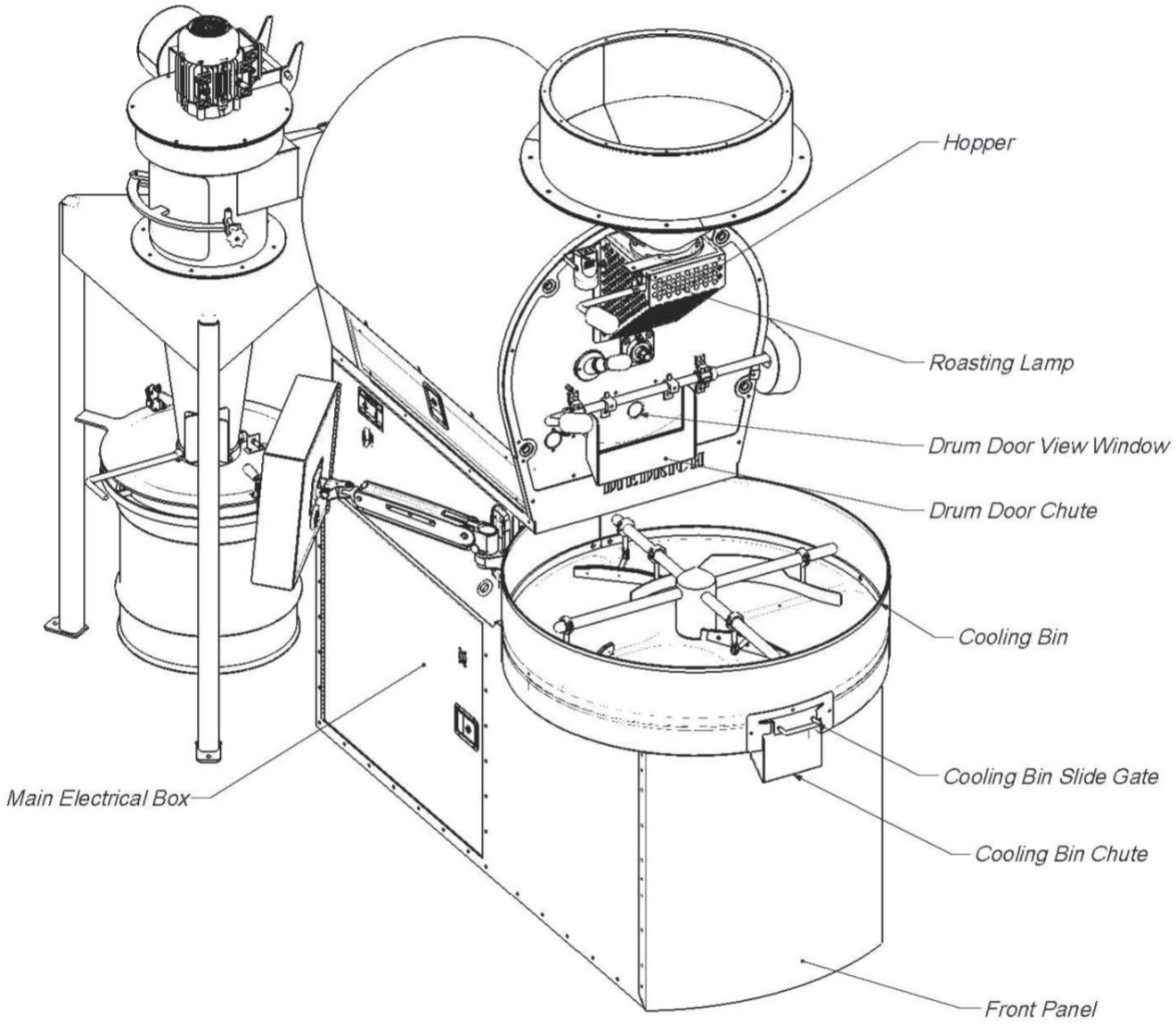
Right Side View

SCALE 1 : 16



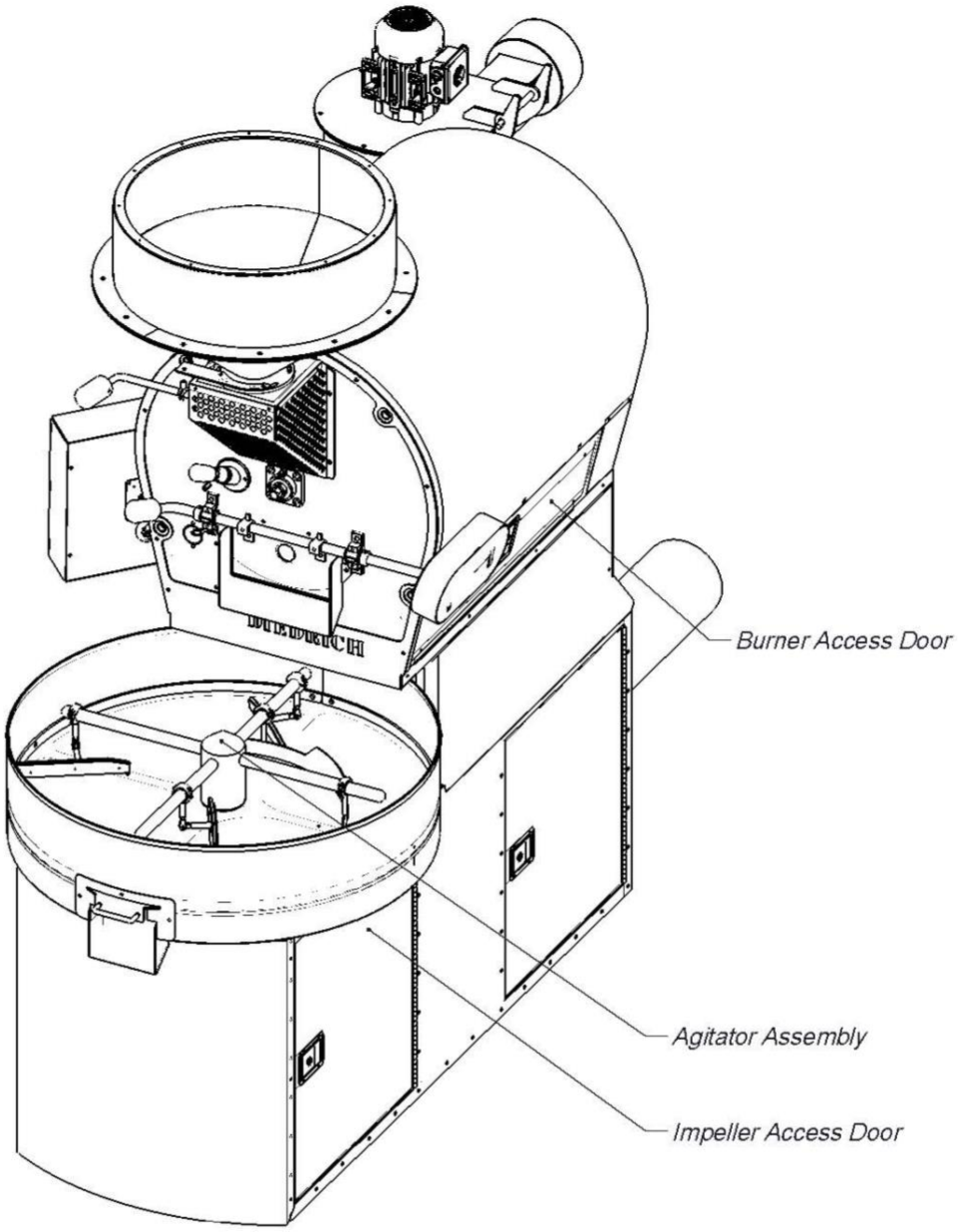
TOP VIEW

SCALE 1 : 16



Front Left - Isometric View

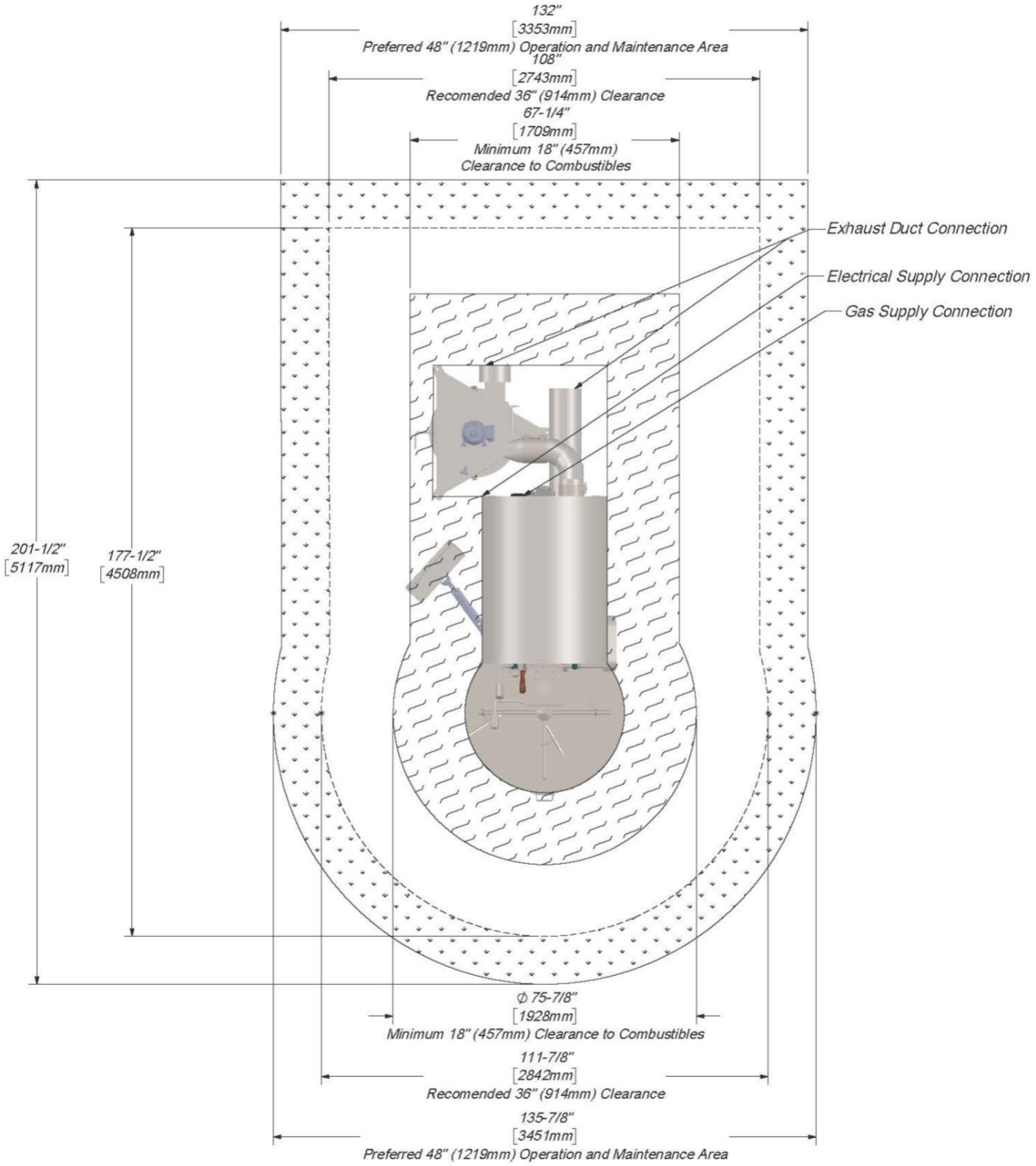
SCALE 1 : 16



Front Right - Isometric View

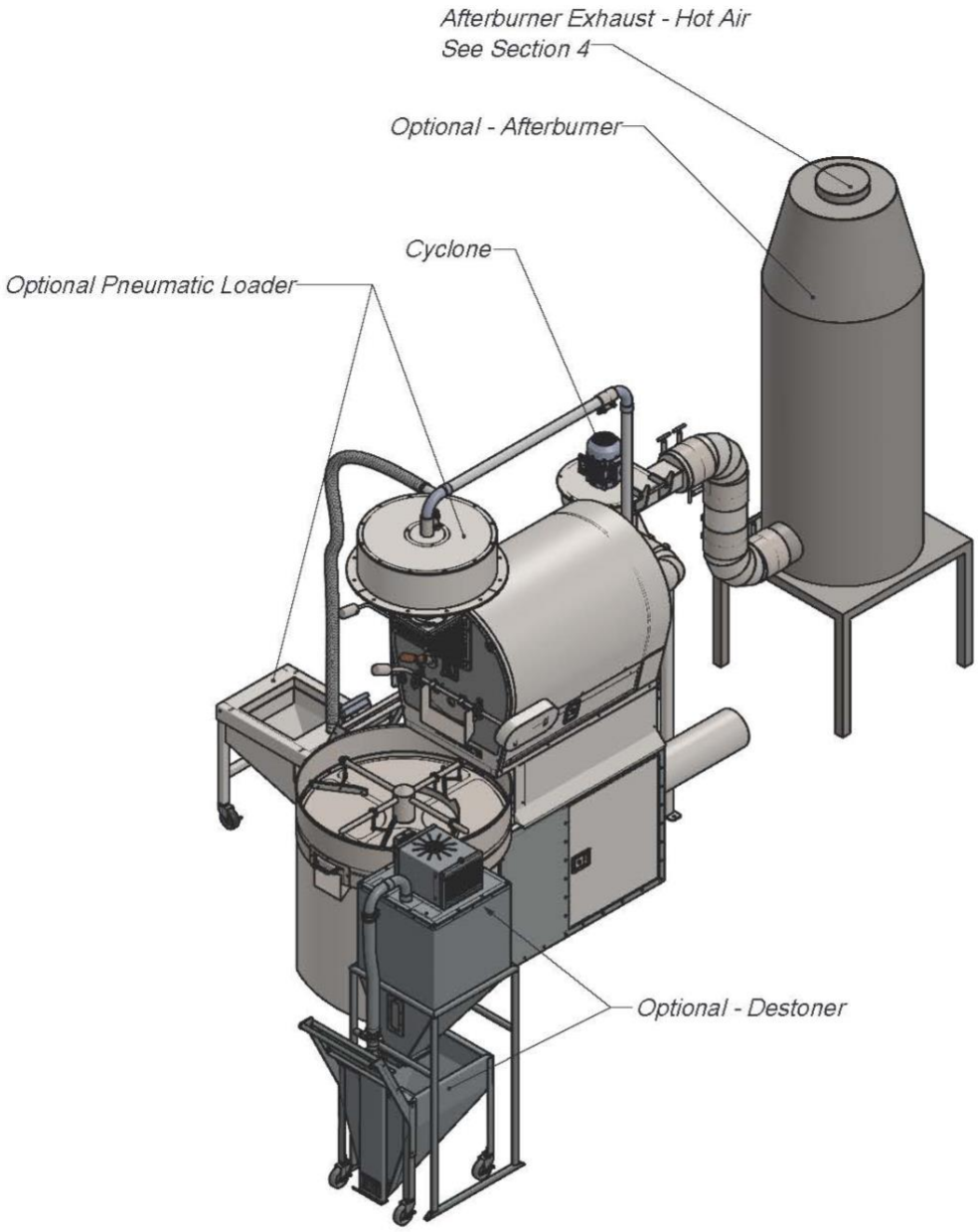
Scale 1:16

Space and Utility Connection Information



Top View

SCALE 1 : 32



Scale 1:32

Isometric View - Full Roasting System

For More Information Request Layout For Purchased Options

3. FACILITY AND INSTALLATION PREPARATIONS

It is suggested that the roaster be operated under the following environmental conditions:
a) Temperature range: 41°F and 86°F; +5°C and +30°C
b) Relative humidity up to 50% at a maximum temperature of 104°F/40°C.
c) Altitudes up to 3281 ft/1,000 m above mean sea level.
d) Transportation and storage temperature range: - 77°F/25°C to 131°F/+ 55°C

Review the Installation and Operation Manual upon purchase. Read it thoroughly prior to installation of the roaster and/or ancillary equipment.

Check local building/fire codes and regulations. Installation must conform with local codes. Local codes, regulations, and requirements will govern in the event they exceed or contradict the information provided by Diedrich Roasters LLC, in this document or elsewhere. It is the purchaser's responsibility to ensure the appropriate codes and regulations, specific to their area, are followed and met.

Obtain any required permits such as building and air quality permits. Requests for information or assistance with permitting and/or certification forms must be submitted to Diedrich within 30 days of purchase. Anticipate approximately 15 business days from submittal of forms for Diedrich to complete our part.

Determine the layout/location of the roaster and any ancillary equipment.

Clearance to combustibles must be a minimum of 18 inches (457 mm) from the sides and the back of the roaster and from the roast air and cooling bin air ducting. However, 3-4 feet (1-1.2 meters) minimum clearance is recommended for operation, maintenance, and repairs. See the Top Space and Utility View drawing on Page 11.

Diedrich Roasters LLC may assist with a customized layout to fit within a specified space. This service is primarily available for Diedrich systems with roasters and other ancillary equipment.

Seek licensed and certified professionals for preparation, installation, and connection of electrical, gas, water, and exhaust ducting to the roaster and any ancillary equipment.

Make sure the appropriate electrical power is available. Ancillary equipment such as the destoner and afterburner will require their own power source, as they are not powered by the roaster.

A water line and connection will be required at the roaster. This should be outfitted with a shut off valve at the roaster and installed according to local codes and regulations.

Make sure the appropriate gas supply is available. See *Section 1* of this document for additional information. Additional considerations for the gas supply line include:

A safety shut-off valve must be installed in the gas supply line before, and close to, the connection to the roaster. An incoming regulator must be installed to adjust the incoming pressure to the roasters required pressure. A separate incoming pressure regulator is required for an afterburner, if an afterburner is used. Venting of the roaster and supply line regulators will likely require venting to the outdoors, per code.

A strainer or sediment trap, as well as a moisture separator or moisture trap/drip, must be installed upstream of the roaster. These must be capable of capturing and cleaning or draining sediment and moisture.

The roasting system will remove fresh air from the building. An additional fresh air inlet may be required to allow "make up air". See *Section 1* of this document for roaster airflow information. Consultation with a licensed Heating, Ventilation, and Air Conditioning (HVAC) contractor is recommended.

Ensure the appropriate size and type of exhaust ducting is installed. *Section 1* of this document, and the "Exhaust Ducting" section below, provide technical data and other pertinent information. The exhaust ducting can be expensive and have a long lead time.

4. EXHAUST DUCTING

Throughout the remainder of this document, the term *exhaust ducting* refers to the ducting that the customer, or their contractor/representative, select, acquire, and install. The exhaust ducting will connect to the applicable Diedrich equipment.

One of the most important aspects of the equipment installation is the use of an approved exhaust ducting system. Its design can greatly affect the equipment performance and the product quality. The cost and time to order and install the exhaust ducting are also important customer considerations.

Designing the exhaust ducting system requires a qualified professional to calculate the efficiency of the system and the proper size of ducting. The ducting must be of sufficient diameter to accommodate the air flow (SCFM - standard cubic feet per minute or SCMH - standard cubic meters per hour), meet the static pressure requirement (noted below), and meet applicable regulations. A licensed engineer or Heating, Ventilation, Air Conditioning (HVAC) professional can assist. Information the qualified professional will need, such as the diameter of the exhaust ducting and the maximum exhaust air flow, is found in the technical data table in *Section 1*. Customers should contact their sales or project manager representative with any questions.

A properly designed and installed chimney and rain cap is essential to the equipment performance and longevity. Water leakage may cause an electrical short or damage the equipment. Your contractor will be able to coordinate with local jurisdictions for the correct cap. The cap should not have a screen since it will clog with residue of chaff over time.

The Diedrich equipment (roaster, cyclone, afterburner, loader, or destoner, as applicable) MUST NOT support the weight of the exhaust system.

The exhaust air from Diedrich products fits into one of two general categories: ***hot exhaust air***, such as from the roaster or an afterburner; or ***ambient/room temperature exhaust air***, from products such as loaders and destoners. The sections that follow will discuss ducting considerations specific to these general categories.

The exhaust air from the roasting process is hot and contains oils and residues which are flammable. In the event of a ducting/flue fire, the internal ducting temperatures can exceed 1000° F (538°C), which could cause nearby combustible materials to ignite. Thus, Diedrich recommends, at a minimum, stainless steel, double wall, positive pressure grease ducting that meets the applicable region/local standards, such as UL for USA, ULC for Canada, and CE for the European Union.

An important consideration when designing an exhaust ducting system is the static pressure. The static pressure is the backpressure or suction within the system. The exhaust ducting that connects to the roaster, cyclone, or afterburner, must be designed to operate with a static flue pressure between negative 0.15” WC (suction) and positive 0.25” WC (backpressure) at the exhaust of the roaster (cyclone or afterburner, as applicable) while in operation.

For Roasters (with or without cooling bin cyclone, and without an afterburner):

Ducting must be suitable for 500°F (260°C) continuous, 2,000°F (1,093°C) for 30, minutes, and comply with UL-1978/ULC-SC662 Standard for Grease Ducts in the USA/Canada, and/or equivalent standards for other countries (such as CE standards for the European Union).

Installation must be done in accordance with appropriate NFPA standards in the USA or equivalent standards in other countries. The installation must also comply with the manufacturer’s installation specifications and allowable distance to combustible/noncombustible materials.

For Roasters with an afterburner:

Ducting from the afterburner must be suitable for 1,000°F (538°C) continuous, 1,400°F (927°C) intermittent, and comply with UL-103/ULC_ORD-C959 in the USA/Canada, and/or equivalent standards for other countries (such as CE standards for the European Union).

Installation must be done in accordance with appropriate NFPA standards in the USA or equivalent standards in other countries. The installation must also comply with the manufacturer's installation specifications and allowable distance to combustible/noncombustible materials.

There are companies that offer ducting products that comply with both the UL 1978 and the UL 103 standards. Some of these companies are listed below along with their websites and contact information.

Van-Packer www.vpstack.com; 888-877-8225, and/or VPTech@vpstack.com
Selkirk www.selkirkcorp.com and/or customer service at 800-848-2149
Jeremias www.jeremiasinc.com and/or e-mail Cayce.raper@jeremiasinc.com
DuraVent www.duravent.com and/or e-mail customerservice@duravent.com

5. DATA LOGGING

Listed below are the positions on the roaster from which data is collected during a roast cycle.

Bean Thermocouple
- Displayed in Diedrich Software
- Logged and stored to profile data in Diedrich Software
- Logged through 3rd party software supporting Modbus TCP/IP

Drum Inlet Thermocouple
- Displayed in Diedrich Software
- Logged through 3rd party software supporting Modbus TCP/IP

Drum Outlet Thermocouple
- Displayed in Diedrich Software
- Logged through 3rd party software supporting Modbus TCP/IP

Cooler Air Thermocouple
- Displayed in Diedrich Software

Fuel Percentage (0-100%)
- Logged and stored to profile data in Diedrich Software
- Logged through 3rd party software supporting Modbus TCP/IP

Air Percentage (0-100%)
- Logged and stored to profile data in Diedrich Software
- Logged through 3rd party software supporting Modbus TCP/IP

6. CERTIFICATES & CONFORMITIES

Diedrich Roasters, LLC manufactures coffee roasters in compliance with UL or CE regulation. The roasters are built to order, specifically to the standards of the governing regulatory body in the country of operation. Please refer to your equipment data labels for reference to the regulatory specification to which the roaster has been built.

CERTIFICATE OF COMPLIANCE

Certificate Number	20170703-MH61804
Report Reference	MH61804-20160628
Issue Date	2017-JULY-03
Issued to:	Diedrich Roasters, LLC 24 Emerald Industrial Park Rd Ponderay ID 83864
This is to certify that representative samples of	GAS-FIRED FOOD SERVICE EQUIPMENT Commercial Gas Fired Coffee Bean Roasters, models IR-1, IR-2.5, IR-5, IR-12, CR-025, CR-035, CR-050, CR-070
	Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	Standard for Gas Food Service Equipment, ANSI Z83.11b-2016/CSA 1.8b-2016
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

CERTIFICATE OF COMPLIANCE

Certificate Number	20160525-E478523
Report Reference	E478523-20150831
Issue Date	2015-MAY-25
Issued to:	DIEDRICH ROASTERS, LLC. 24 Emerald Industrial Park Road Ponderay, ID 83864 USA
This is to certify that representative samples of	Industrial Control Panels USL, CNL - Industrial Control Panels – General Coverage.
	Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	UL 508A, Industrial Control Panels C22.2 No. 14, Industrial Control Equipment
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at http://ul.com/aboutul/locations/

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EU DECLARATION OF CONFORMITY

MANUFACTURER:	**Diedrich Roasters, LLC** **850 Hawthorne Avenue** **Ponderay, Idaho 83852 USA** Phone: 844.343.3742 URL: www.diedrichroasters.com
EU CONTACT ADDRESS:	**Jamie Banwell** **Rubiacaea Consulting Ltd** **Unit 3a Imperial Studios** **Imperial Road** **Fulham** **SW6 2AG**
MODEL / TYPE:	DR Series: DR-3, DR-25
DESCRIPTION:	Coffee Roaster
REPORTS:	F2P25157A-01S-R1, F2P25157A-02E
DIRECTIVES:	Machinery Directive 2006/42/EC, EMC Directive 2014/30/EU

STANDARDS CONSIDERED, FULL OR IN PART:

- EN / ISO 13849-1:2015
- EN 60204-1:2018
- EN 61000-6-3:2007+A2:2011
- EN 61000-6-1:2007

THIRD PARTY TESTING:

www.f2labs.com

26501 Ridge Road
Damascus, MD 20872 USA
Phone: 301.253.4500
Fax: 301.253.5179
Toll Free: 877.405.1580

16740 Peters Road
Middlefield, OH 44062 USA
Phone: 440.632.5541
Fax: 440.632.5542

8583 Zionsville Road
Indianapolis, IN 46268 USA
Phone: 317.610.0611
Fax: 317.610.0525

Diedrich Roasters, LLC declares under its sole responsibility that the **DR Series Coffee Roaster** is in conformity with the Machinery Directive 2006/42/EC and the EMC Directive 2014/30/EU.

Authorized by: Karl J. Schmidt
(signature)

Date: September 16, 2021

Name: Karl Schmidt

Title: CEO

Location: Ponderay, Idaho