

## Product Data



A10232

### THE LATEST IN OIL FURNACE TECHNOLOGY

The models OBL and OVL combine high efficiency and quiet operation with oil heating technology. The OBL/OVL can be fired at two different rates by a simple nozzle change and oil pump pressure adjustment. Furnaces are available to cover input ranges from 77,000 to 154,000 Btuh. The furnace design is a low-boy style for upflow applications where overhead space is limited.

The OBL/OVL is a standard part of a quality-built home. These high efficiency furnaces will provide years of quality service to home builders and homeowners alike.

This model is designed to work as part of a total home comfort system which includes elements for cooling, air cleaning, humidification, ventilation, and zoning.

### OBL/OVL FEATURES / BENEFITS

#### Beckett & Riello Burner Options

- High quality Beckett or Riello oil burners allows safe and efficient combustion of oil.
- Both manufacturers approved for optional Sealed Combustion Venting.
- Ignition control and fan timer board provide reliable operation and easy connection of thermostat and accessory wiring.

#### Casing

- Made of 22-gauge painted steel for years of durability.

#### Insulation and Soundproofing

- Unique sound trap along with insulated walls efficiently capture most combustion noise and vibration make this unit one of the quietest on the market.

#### Combustion Products Venting

- Rear flue outlet.
- Unit may be vented using Type L vent material and a factory-built metal or masonry chimney.
- Unit may also be sidewall vented with optional Sealed Combustion System.
- Unit may also be sidewall vented with an approved power venter.

#### Adjustable Blower Speed

- OBL units equipped with 4-speed blower for precise airflow selection of heating or cooling operation.
- OVL units equipped with optional ECM 2.3 Variable Speed high-efficiency motor.

#### Constant Low-Speed Blower Switch

##### (OBL models)

- Allows continual low-speed air circulation through the home to maximize comfort while maintaining efficiency.
- Air is constantly filtered and stagnant air is avoided.
- This option can be controlled by the homeowner.

#### Combustion Chamber/Heat Exchanger

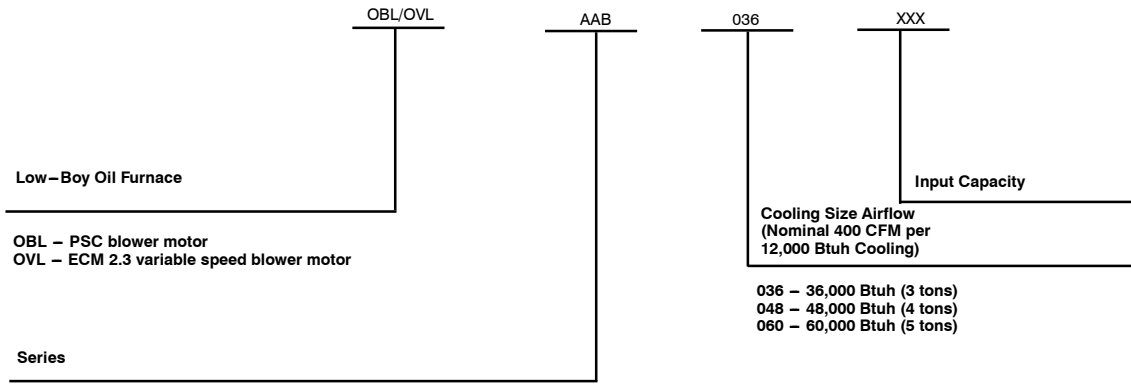
- Composed of stainless and aluminized steel, the unique combination combustion chamber/heat exchanger resists corrosion, overheating, and deterioration.
- Heat transfer properties make it highly efficient.
- All seams are tightly welded for leak-free operation.

#### Certifications

- OBL/OVL units are CSA certified.
- AHRI efficiency rating certified.
- ENERGY STAR Compliant
- Up to 86.8% AFUE for Canada (CSA B212 + Canadian laws)
- Up to 86.6% AFUE for USA (ASHRAE 103 + American laws)

# MODEL NUMBER NOMENCLATURE

OBL/OVL



Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program. For verification of certification for individual products, go to [www.ahridirectory.org](http://www.ahridirectory.org).

**Always Ask For  
FACTORY  
AUTHORIZED  
PARTS**

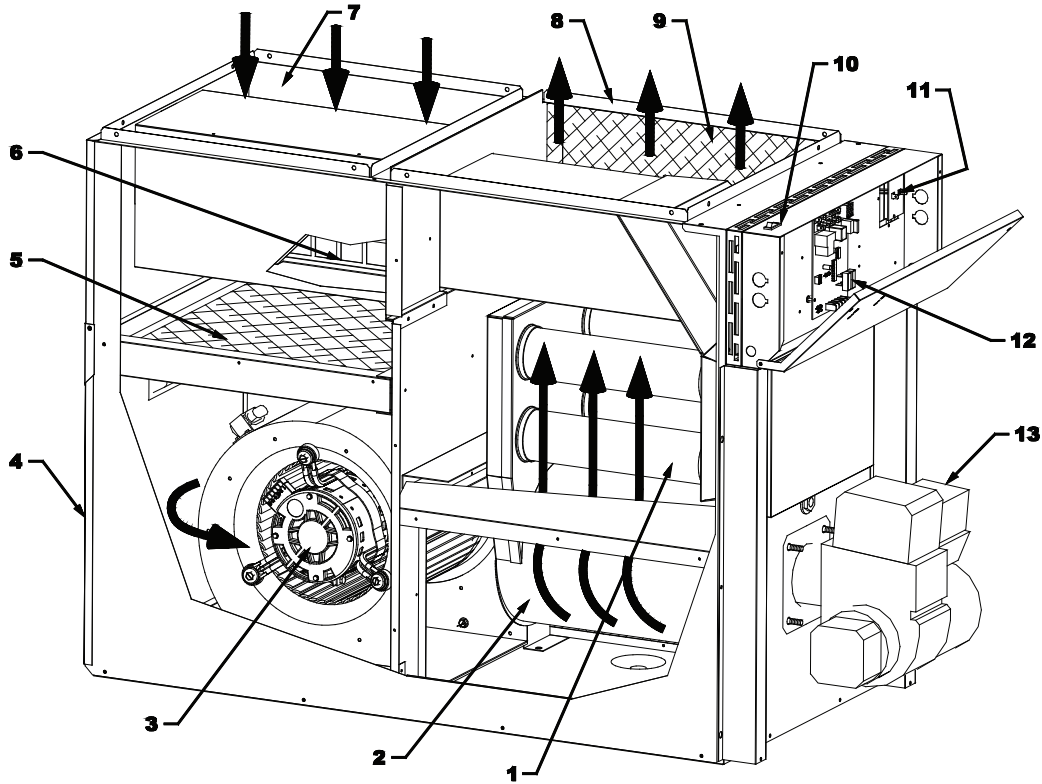
## CLEARANCE TO COMBUSTIBLES

LOCATION	UNIT APPLICATION	CLEARANCES – IN. (MM)	RECOMMENDED ACCESS FOR SERVICE
SIDES	Furnace	1 (25)	24 (610)
	Supply Plenum Within 6 Ft. (1.8 M) of Furnace	1 (25)	
BACK	Access panel to blower	4 (102)	24 (610)
TOP	Furnace or Plenum	2 (51)	
	Horizontal Warm – Air Duct Within 6 Ft. (1.8 M) of Furnace	2 (51)	
BOTTOM*	Furnace (combustible floor)*	0 (0)	
FLUE PIPE	Horizontally or below flue pipe	9 (229)	
	Vertically above flue pipe		
FRONT	Furnace (burner end)	8 (203)	24 (610)

\*Floor may be combustible.

NOTE: Adequate service clearance should be provided over and above these dimensions as required.

# NON-VARIABLE SPEED UNIT



DNS-1247 Rev.A

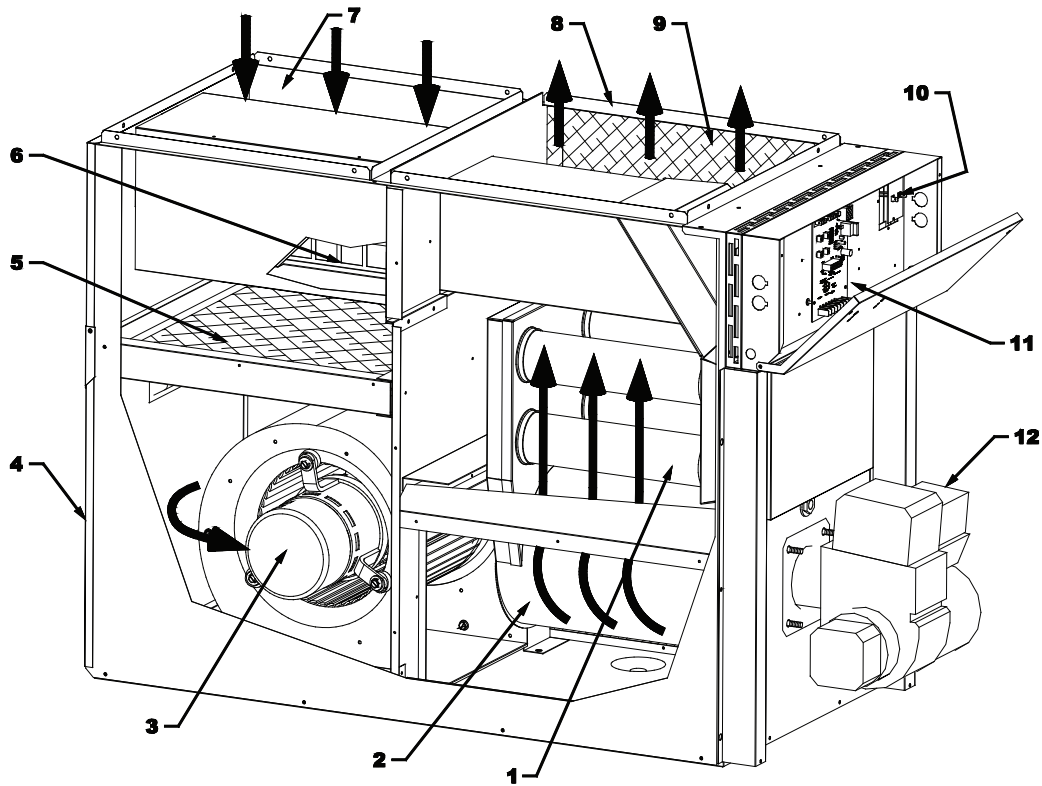
OBL/OVL

A10027

1. Heat exchanger designed and shaped to efficiently transfer heat from furnace into the home.
2. Stainless steel combustion chamber.
3. Heavy-duty blower circulates air across the heat exchanger to transfer heat into the home.
4. Access doors to air filters and blower.
5. Air filters.
6. Unique silencer system controls combustion noise.
7. Return-air plenum.
8. Supply-air plenum.
9. Fully insulated internal walls to minimize heat loss.
10. Manual switch to allow user control of constant low-speed blower operation.
11. High limit control to prevent over-temperature.
12. Adjustable electronic fan timer control (inside) has low voltage electrical terminal strip for easy connection of thermostat, cooling control, electronic air cleaner and humidifier.
13. High-performance oil burner, sold separately.

# VARIABLE SPEED UNIT

OBL/OVL



JNS 1248 Rev.A

A10028

1. Heat exchanger designed and shaped to efficiently transfer heat from furnace into the home.
2. Stainless steel combustion chamber.
3. Heavy-duty blower circulates air across the heat exchanger to transfer heat into the home.
4. Access doors to air filters and blower.
5. Air filters.
6. Unique silencer system controls combustion noise.
7. Return-air plenum.
8. Supply-air plenum.
9. Fully insulated internal walls to minimize heat loss.
10. High limit control to prevent over-temperature.
11. Adjustable electronic fan timer control (inside) has low voltage electrical terminal strip for easy connection of thermostat, cooling control, electronic air cleaner and humidifier.
12. High-performance oil burner, sold separately.

# FURNACE SPECIFICATIONS

Model	OBL098	
<b>Rating &amp; Performance</b>		
Firing rate (USGPH)*	0.55	0.70
Input (btuh)*	77,000	98,000
Maximum heating capacity (btuh)*	66,000	82,000
Heating temperature rise (°F/°C)*	55 – 85 / 30 – 47	
Flue draft with chimney (in wc / Pa)	–0.06 to –0.025 / –14.9 to –6.2	
Overfire pressure with chimney (in wc / Pa)	–0.035 to +0.010 / –8.7 to +2.5	
Flue draft with direct vent (in wc / Pa)	+0.05 to +0.20 / +12.5 to +50	
Overfire pressure with direct vent (in wc / Pa)	+0.03 to +0.15 / +7.5 to +37.5	
<b>Beckett Burner; (Chimney or Direct Vent)</b>		
<b>KLABR0101BEC</b>		
Burner tube insertion length	1 3/4" (45mm)	
Head type	6–slots LQ head	
Nozzle (Delavan)	0.50–60A	0.60–60A
Minimum and Maximum pump pressure (PSIG)*	125 to 180	135 to 170
(kPa)*	862 to 1241	930 to 1172
Head/Air setting	1.0	2.5
AFUE % (From CSA B212 standard and Canadian regulation)**	86.1 ‡	85.0 ‡
AFUE % (From ASHRAE 103 standard and US regulation)	85.7 ‡	85.0 ‡
<b>Riello Burner; (Chimney)</b>		
<b>KLABR0101RLO</b>		
Burner tube insertion length	2 3/4" (70mm)	
Nozzle (Delavan)	0.50–70A	0.60–70A
Minimum and Maximum pump pressure (PSIG)*	125 to 180	135 to 170
(kPa)*	862 to 1241	930 to 1172
Combustion air adjustment (turbulator/damper)	0 / 2.0	0 / 3.5
AFUE % (From CSA B212 standard and Canadian regulation)**	86.1 ‡	85.0 ‡
AFUE % (From ASHRAE 103 standard and US regulation)	85.7 ‡	85.0 ‡
<b>Riello Burner; (Direct Vent)</b>		
<b>KLABR0201RLO</b>		
Burner tube insertion length	2 3/4" (70mm)	
Nozzle (Delavan)	0.50–70A	0.60–70A
Minimum and maximum Pump pressure (PSIG)*	125 to 180	135 to 170
(kPa)*	862 to 1241	930 to 1172
Combustion air adjustment (turbulator/damper)	0 / 3.5	1 / 5.25
AFUE % (From CSA B212 standard and Canadian regulation)**	86.1 ‡	85.0 ‡
AFUE % (From ASHRAE 103 standard and US regulation)	85.7 ‡	85.0 ‡
<b>Electrical System</b>		
Volts – Hz – Phase	115 – 60 – 1	
Rated current (Amps)	12.2	
Minimum ampacity for wire sizing (Amps)	13.7	
Max. fuse size (Amps)	15	
Control Transformer (VA)	40	
External control power available	Heating (VA)	40
	Cooling (VA)	30
<b>Blower Data (Side Air Return)</b>		
Heating blower speed at 0.20 in wc (50 Pa)	Med – Low	Med – High
Heating blower speed at 0.50 in wc (125 Pa)	Med – Low	High
Motor (HP) / Number of speeds	1/3 HP / 4 speeds	
Blower wheel size in(mm) – tight housing	10 x 10 (254 x 254)	
<b>General Information</b>		
Overall dimensions W x D x H – in(mm)	21 x 47 x 34 (533 x 1194 x 864)	
Supply air opening – in(mm)	20" x 20" (508 x 508)	
Return air opening – in(mm)	18" x 20" (457 x 508)	
Filter size, 1 or 2 inch (25 or 51mm) – in(mm)	20" x 20" (508 x 508)	
Shipping weight – lbs(kg)	175 (80)	
Air conditioning at .5 in wc (125 Pa), maximum output	3.0 tons	

**\*INPUT & OUTPUT ADJUSTMENT**

Pump pressure can be adjusted to maintain proper firing rate.

Adjust flue gas temperature between 400 and 575 °F/204 and 301°C

Adjust fan speed for air temperature rise of 55 to 85 °F/30 to 47°C.

\*\* AFUE value established after minimum 20 hours of continuous operation.

‡ Meets EnergyStar guidelines

OBL/OVL

# FURNACE SPECIFICATIONS

Model		OVL098	
<b>Rating &amp; Performance</b>			
Firing rate (USGPH)*		0.55	0.70
Input (btuh)*		77,000	98,000
Maximum heating capacity (btuh)*		66,000	82,000
Heating temperature rise (°F/°C)*		55 – 85 / 30 – 47	
Flue draft with chimney (in wc / Pa)		–0.06 to –0.025 / –14.9 to –6.2	
Overfire pressure with chimney (in wc / Pa)		–0.035 to +0.010 / –8.7 to +2.5	
Flue draft with direct vent (in wc / Pa)		+0.05 to +0.20 / +12.5 to +50	
Overfire pressure with direct vent (in wc / Pa)		+0.03 to +0.15 / +7.5 to +37.5	
<b>Beckett Burner; (Chimney or Direct Vent)</b>		<b>KLABR0101BEC</b>	
Burner tube insertion length		1 3/4" (45mm)	
Head type		6–slots LQ head	
Nozzle (Delavan)		0.50–60A	0.60–60A
Minimum and Maximum pump pressure (PSIG)*		125 to 180	135 to 170
	(kPa)*	862 to 1241	930 to 1172
Head/Air setting		1.0	2.5
AFUE % (From CSA B212 standard and Canadian regulation)**		86.1 ‡	85.0 ‡
AFUE % (From ASHRAE 103 standard and US regulation)		85.7 ‡	85.0 ‡
<b>Riello Burner; (Chimney)</b>		<b>KLABR0101RLO</b>	
Burner tube insertion length		2 3/4" (70mm)	
Nozzle (Delavan)		0.50–70A	0.60–70A
Minimum and Maximum pump pressure (PSIG)*		125 to 180	135 to 170
	(kPa)*	862 to 1241	930 to 1172
Combustion air adjustment (turbulator/damper)		0 / 2.0	0 / 3.5
AFUE % (From CSA B212 standard and Canadian regulation)**		86.1 ‡	85.0 ‡
AFUE % (From ASHRAE 103 standard and US regulation)		85.7 ‡	85.0 ‡
<b>Riello Burner; (Direct Vent)</b>		<b>KLABR0201RLO</b>	
Burner tube insertion length		2 3/4" (70mm)	
Nozzle (Delavan)		0.50–70A	0.60–70A
Minimum and maximum Pump pressure (PSIG)*		125 to 180	135 to 170
	(kPa)*	862 to 1241	930 to 1172
Combustion air adjustment (turbulator/damper)		0 / 3.5	1 / 5.25
AFUE % (From CSA B212 standard and Canadian regulation)**		86.1 ‡	85.0 ‡
AFUE % (From ASHRAE 103 standard and US regulation)		85.7 ‡	85.0 ‡
<b>Electrical System</b>			
Volts – Hz – Phase		115 – 60 – 1	
Rated current (Amps)		10.3	
Minimum ampacity for wire sizing (Amps)		12.2	
Max. fuse size (Amps)		15	
Control Transformer (VA)		40	
External control power available	Heating (VA)	40	
	Cooling (VA)	30	
<b>Blower Data (Side Air Return)</b>			
Heating blower speed at 0.20 in wc (50 Pa)		See ECM 2.3 motor cfm table	
Heating blower speed at 0.50 in wc (125 Pa)			
Motor (HP) / Number of speeds		1/2 HP ECM 2.3 Variable Speed	
Blower wheel size in(mm) – tight housing		10 x 10 (254 x 254)	
<b>General Information</b>			
Overall dimensions W x D x H – in(mm)		21 x 47 x 34 (533 x 1194 x 864)	
Supply air opening – in(mm)		20" x 20" (508 x 508)	
Return air opening – in(mm)		18" x 20" (457 x 508)	
Filter size, 1 or 2 inch (25 or 51mm) – in(mm)		20" x 20" (508 x 508)	
Shipping weight – lbs(kg)		175 (80)	
Air conditioning at .5 in wc (125 Pa), maximum output		3.0 tons	

**\*INPUT & OUTPUT ADJUSTMENT**

Pump pressure can be adjusted to maintain proper firing rate.

Adjust flue gas temperature between 400 and 575 °F/204 and 301 °C

Adjust fan speed for air temperature rise of 55 to 85 °F/30 to 47 °C.

\*\* AFUE value established after minimum 20 hours of continuous operation.

‡ Meets EnergyStar guidelines

OBL/OVL

# FURNACE SPECIFICATIONS

Model	OBL112	
<b>Rating &amp; Performance</b>		
Firing rate (USGPH)*	0.68	0.80
Input (btuh)*	95,200	112,000
Maximum heating capacity (btuh)*	81,100	94,100
Heating temperature rise (°F/°C)*	60 – 72 / 33 – 40	
Flue draft with chimney (in wc / Pa)	–0.06 to –0.025 / –14.9 to –6.2	
Overfire pressure with chimney (in wc / Pa)	–0.035 to +0.010 / –8.7 to +2.5	
Flue draft with direct vent (in wc / Pa)	+0.03 to +0.15 / +7.5 to +37.5	
Overfire pressure with direct vent (in wc / Pa)	+0.05 to +0.17 / +12.5 to +42.3	
<b>Beckett Burner; (Chimney or Direct Vent)</b>		
<b>KLABR0201BEC</b>		
Burner tube insertion length	1 3/4" (45mm)	
Head type	6–slots LQ head	
Nozzle (Delavan)	0.60–60A	0.70–60A
Minimum and Maximum pump pressure (PSIG)*	130 to 160	130 to 160
(kPa)*	896 to 1103	896 to 1103
Head/Air setting	1.5	2.5
AFUE % (From CSA B212 standard and Canadian regulation)**	86.5 ‡	85.6 ‡
AFUE % (From ASHRAE 103 standard and US regulation)	86.3 ‡	85.0 ‡
<b>Riello Burner; (Chimney)</b>		
<b>KLABR0301RLO</b>		
Burner tube insertion length	2 3/4" (70mm)	
Nozzle (Delavan)	0.60–70A	0.70–70A
Minimum and Maximum pump pressure (PSIG)*	130 to 160	130 to 160
(kPa)*	896 to 1103	896 to 1103
Combustion air adjustment (turbulator/damper)	1 / 2.6	2 / 3.1
AFUE % (From CSA B212 standard and Canadian regulation)**	86.5 ‡	85.6 ‡
AFUE % (From ASHRAE 103 standard and US regulation)	86.3 ‡	85.0 ‡
<b>Riello Burner; (Direct Vent)</b>		
<b>KLABR0401RLO</b>		
Burner tube insertion length	2 3/4" (70mm)	
Nozzle (Delavan)	0.60–70A	0.70–70A
Minimum and maximum Pump pressure (PSIG)*	130 to 160	130 to 160
(kPa)*	896 to 1103	896 to 1103
Combustion air adjustment (turbulator/damper)	0 / 2.75	0 / 3.25
AFUE % (From CSA B212 standard and Canadian regulation)**	86.5 ‡	85.6 ‡
AFUE % (From ASHRAE 103 standard and US regulation)	86.3 ‡	85.0 ‡
<b>Electrical System</b>		
Volts – Hz – Phase	115 – 60 – 1	
Rated current (Amps)	12.6	
Minimum ampacity for wire sizing (Amps)	15.2	
Max. fuse size (Amps)	20	
Control Transformer (VA)	40	
External control power available	Heating (VA)	40
	Cooling (VA)	30
<b>Blower Data (Side Air Return)</b>		
Heating blower speed at 0.20 in wc (50 Pa)	Med – Low	Med – High
Heating blower speed at 0.50 in wc (125 Pa)	Med – Low	Med – High
Motor (HP) / Number of speeds	1/2 HP / 4 speeds	
Blower wheel size in(mm) – tight housing	12 x 9 (305 x 230)	
<b>General Information</b>		
Overall dimensions W x D x H – in(mm)	21 x 48 x 33–3/4 (533 x 1219 x 857)	
Supply air opening – in(mm)	19–3/4" x 19–3/4" (502 x 502)	
Return air opening – in(mm)	19–3/4" x 19–3/4" (502 x 502)	
Filter size, 1 or 2 inch (25 or 51mm) – in(mm)	20" x 20" x 1" or 2" (508 x 508) – qty=1 16" x 20" x 1" (406 x 508) – qty=2	
Shipping weight – lbs(kg)	195 (89)	
Air conditioning at .5 in wc (125 Pa), maximum output	4.0 tons	

**\*INPUT & OUTPUT ADJUSTMENT**

Pump pressure can be adjusted to maintain proper firing rate.

Adjust flue gas temperature between 400 and 575 °F/204 and 301°C

Adjust fan speed for air temperature rise of 55 to 85 °F/30 to 47°C.

\*\* AFUE value established after minimum 20 hours of continuous operation.

‡ Meets EnergyStar guidelines

OBL/OVL

# FURNACE SPECIFICATIONS

Model		OVL112	
<b>Rating &amp; Performance</b>			
Firing rate (USGPH)*		0.68	0.80
Input (btuh)*		95,200	112,000
Maximum heating capacity (btuh)*		81,100	94,100
Heating temperature rise (°F/°C)*		60 – 72 / 33 – 40	
Flue draft with chimney (in wc / Pa)		–0.06 to –0.025 / –14.9 to –6.2	
Overfire pressure with chimney (in wc / Pa)		–0.035 to +0.010 / –8.7 to +2.5	
Flue draft with direct vent (in wc / Pa)		+0.03 to +0.15 / +7.5 to +37.5	
Overfire pressure with direct vent (in wc / Pa)		+0.05 to +0.17 / +12.5 to +42.3	
<b>Beckett Burner; (Chimney or Direct Vent)</b>		<b>KLABR0201BEC</b>	
Burner tube insertion length		1 3/4" (45mm)	
Head type		6–slots LQ head	
Nozzle (Delavan)		0.60–60A	0.70–60A
Minimum and Maximum pump pressure (PSIG)*		130 to 160	130 to 160
	(kPa)*	896 to 1103	896 to 1103
Head/Air setting		1.5	2.5
AFUE % (From CSA B212 standard and Canadian regulation)**		86.5 ‡	85.6 ‡
AFUE % (From ASHRAE 103 standard and US regulation)		86.3 ‡	85.0 ‡
<b>Riello Burner; (Chimney)</b>		<b>KLABR0301RLO</b>	
Burner tube insertion length		2 3/4" (70mm)	
Nozzle (Delavan)		0.60–70A	0.70–70A
Minimum and Maximum pump pressure (PSIG)*		130 to 160	130 to 160
	(kPa)*	896 to 1103	896 to 1103
Combustion air adjustment (turbulator/damper)		1 / 2.6	2 / 3.1
AFUE % (From CSA B212 standard and Canadian regulation)**		86.5 ‡	85.6 ‡
AFUE % (From ASHRAE 103 standard and US regulation)		86.3 ‡	85.0 ‡
<b>Riello Burner; (Direct Vent)</b>		<b>KLABR0401RLO</b>	
Burner tube insertion length		2 3/4" (70mm)	
Nozzle (Delavan)		0.60–70A	0.70–70A
Minimum and maximum Pump pressure (PSIG)*		130 to 160	130 to 160
	(kPa)*	896 to 1103	896 to 1103
Combustion air adjustment (turbulator/damper)		0 / 2.75	0 / 3.25
AFUE % (From CSA B212 standard and Canadian regulation)**		86.5 ‡	85.6 ‡
AFUE % (From ASHRAE 103 standard and US regulation)		86.3 ‡	85.0 ‡
<b>Electrical System</b>			
Volts – Hz – Phase		115 – 60 – 1	
Rated current (Amps)		12.2	
Minimum ampacity for wire sizing (Amps)		14.7	
Max. fuse size (Amps)		15	
Control Transformer (VA)		40	
External control power available	Heating (VA)	40	
	Cooling (VA)	30	
<b>Blower Data (Side Air Return)</b>			
Heating blower speed at 0.20 in wc (50 Pa)		See ECM 2.3 motor cfm table	
Heating blower speed at 0.50 in wc (125 Pa)			
Motor (HP) / Number of speeds		3/4 HP ECM 2.3 / Variable Speed	
Blower wheel size in(mm) – tight housing		12 x 9 (305 x 230)	
<b>General Information</b>			
Overall dimensions W x D x H – in(mm)		21 x 48 x 33–3/4 (533 x 1219 x 857)	
Supply air opening – in(mm)		19–3/4" x 19–3/4" (502 x 502)	
Return air opening – in(mm)		19–3/4" x 19–3/4" (502 x 502)	
Filter size, 1 or 2 inch (25 or 51mm) – in(mm)		20" x 20" x 1" or 2" (508 x 508) – qty=1 16" x 20" x 1" (406 x 508) – qty=2	
Shipping weight – lbs(kg)		195 (89)	
Air conditioning at .5 in wc (125 Pa), maximum output		4.0 tons	

**\*INPUT & OUTPUT ADJUSTMENT**

Pump pressure can be adjusted to maintain proper firing rate.

Adjust flue gas temperature between 400 and 575 °F/204 and 301 °C

Adjust fan speed for air temperature rise of 55 to 85 °F/30 to 47 °C.

\*\* AFUE value established after minimum 20 hours of continuous operation.

‡ Meets EnergyStar guidelines

OBL/OVL



# FURNACE SPECIFICATIONS

Model	OBL154	
<b>Rating &amp; Performance</b>		
Firing rate (USGPH)*	0.90	1.10
Input (btuh)*	126,000	154,000
Maximum heating capacity (btuh)*	107,700	129,700
Heating temperature rise (°F/°C)*	55 – 75 / 31 – 42	
Flue draft with chimney (in wc / Pa)	–0.06 to –0.025 / –14.9 to –6.2	
Overfire pressure with chimney (in wc / Pa)	–0.035 to +0.025 / –8.7 to +6.2	
Flue draft with direct vent (in wc / Pa)	+0.05 to +0.12 / +12.5 to + 29.9	
Overfire pressure with direct vent (in wc / Pa)	+0.06 to +0.16 / +14.9 to +39.9	
<b>Beckett Burner; (Chimney or Direct Vent)</b>		
<b>KLABR0301BEC</b>		
Burner tube insertion length	1 3/4" (45mm)	
Head type	6–slots LQ head	
Nozzle (Delavan)	0.75–60B	0.90–60B
Minimum and Maximum pump pressure (PSIG)*	145 to 175	150 to 180
(kPa)*	1000 to 1207	1034 to 1241
Head/Air setting	2.5	3.25
AFUE % (From CSA B212 standard and Canadian regulation)**	86.8 ‡	85.1 ‡
AFUE % (From ASHRAE 103 standard and US regulation)	86.6 ‡	85.0 ‡
<b>Riello Burner; (Chimney)</b>		
<b>KLABR0501RLO</b>		
Burner tube insertion length	2 3/4" (70mm)	
Nozzle (Delavan)	0.75–70A	0.90–70A
Minimum and Maximum pump pressure (PSIG)*	145 to 175	150 to 180
(kPa)*	1000 to 1207	1034 to 1241
Combustion air adjustment (turbulator/damper)	1.5 / 2.25	2.5 / 2.75
AFUE % (From CSA B212 standard and Canadian regulation)**	86.8 ‡	85.1 ‡
AFUE % (From ASHRAE 103 standard and US regulation)	86.3 ‡	85.0 ‡
<b>Riello Burner; (Direct Vent)</b>		
<b>KLABR0601RLO</b>		
Burner tube insertion length	2 3/4" (70mm)	
Nozzle (Delavan)	0.75–70A	0.90–70A
Minimum and maximum Pump pressure (PSIG)*	145 to 175	150 to 180
(kPa)*	1000 to 1207	1034 to 1241
Combustion air adjustment (turbulator/damper)	1 / 3.75	3 / 4.25
AFUE % (From CSA B212 standard and Canadian regulation)**	86.8 ‡	85.1 ‡
AFUE % (From ASHRAE 103 standard and US regulation)	86.6 ‡	85.0 ‡
<b>Electrical System</b>		
Volts – Hz – Phase	115 – 60 – 1	
Rated current (Amps)	16.9	
Minimum ampacity for wire sizing (Amps)	19.5	
Max. fuse size (Amps)	20	
Control Transformer (VA)	40	
External control power available	Heating (VA)	40
	Cooling (VA)	30
<b>Blower Data (Side Air Return)</b>		
Heating blower speed at 0.20 in wc (50 Pa)	Med–Low	Med–High
Heating blower speed at 0.50 in wc (125 Pa)	Med–Low	Med–High
Motor (HP) / Number of speeds	1.0 HP / 4 speeds	
Blower wheel size in(mm) – tight housing	12 x 10 (305 x 254)	
<b>General Information</b>		
Overall dimensions W x D x H – in(mm)	24–3/4 x 52 x 39–1/4 (629 x 1321 x 997)	
Supply air opening – in(mm)	23–3/4" x 23–3/4" (603 x 603)	
Return air opening – in(mm)	23–3/4" x 19–3/4" (603 x 502)	
Filter size, 1 or 2 inch (25 or 51mm) – in(mm)	20" x 24" x 1" or 2" (508 x 610) – qty=1 16" x 24" x 1" (406 x 610) – qty=2	
Shipping weight – lbs(kg)	270 (122.5)	
Air conditioning at .5 in wc (125 Pa), maximum output	5.0 tons	

**\*INPUT & OUTPUT ADJUSTMENT**

Pump pressure can be adjusted to maintain proper firing rate.

Adjust flue gas temperature between 400 and 575 °F/204 and 301°C

Adjust fan speed for air temperature rise of 55 to 85 °F/30 to 47°C.

\*\* AFUE value established after minimum 20 hours of continuous operation.

‡ Meets EnergyStar guidelines

OBL/OVL

# FURNACE SPECIFICATIONS

Model		OVL154	
<b>Rating &amp; Performance</b>			
Firing rate (USGPH)*		0.90	1.10
Input (btuh)*		126,000	154,000
Maximum heating capacity (btuh)*		107,700	129,700
Heating temperature rise (°F/°C)*		55 – 75 / 31 – 42	
Flue draft with chimney (in wc / Pa)		–0.06 to –0.025 / –14.9 to –6.2	
Overfire pressure with chimney (in wc / Pa)		–0.035 to +0.025 / –8.7 to +6.2	
Flue draft with direct vent (in wc / Pa)		+0.05 to +0.12 / +12.5 to +29.9	
Overfire pressure with direct vent (in wc / Pa)		+0.06 to +0.16 / +14.9 to +39.9	
<b>Beckett Burner; (Chimney or Direct Vent)</b>		<b>KLABR0301BEC</b>	
Burner tube insertion length		1 3/4" (45mm)	
Head type		6–slots LQ head	
Nozzle (Delavan)		0.75–60B	0.90–60B
Minimum and Maximum pump pressure (PSIG)*		145 to 175	150 to 180
	(kPa)*	1000 to 1207	1034 to 1241
Head/Air setting		2.5	3.25
AFUE % (From CSA B212 standard and Canadian regulation)**		86.8 ‡	85.1 ‡
AFUE % (From ASHRAE 103 standard and US regulation)		86.6 ‡	85.0 ‡
<b>Riello Burner; (Chimney)</b>		<b>KLABR0501RLO</b>	
Burner tube insertion length		2 3/4" (70mm)	
Nozzle (Delavan)		0.75–70A	0.90–70A
Minimum and Maximum pump pressure (PSIG)*		145 to 175	150 to 180
	(kPa)*	1000 to 1207	1034 to 1241
Combustion air adjustment (turbulator/damper)		1.5 / 2.25	2.5 / 2.75
AFUE % (From CSA B212 standard and Canadian regulation)**		86.8 ‡	85.1 ‡
AFUE % (From ASHRAE 103 standard and US regulation)		86.6 ‡	85.0 ‡
<b>Riello Burner; (Direct Vent)</b>		<b>KLABR0601RLO</b>	
Burner tube insertion length		2 3/4" (70mm)	
Nozzle (Delavan)		0.75–70A	0.90–70A
Minimum and maximum Pump pressure (PSIG)*		145 to 175	150 to 180
	(kPa)*	1000 to 1207	1034 to 1241
Combustion air adjustment (turbulator/damper)		1 / 3.75	3 / 4.25
AFUE % (From CSA B212 standard and Canadian regulation)**		86.8 ‡	85.1 ‡
AFUE % (From ASHRAE 103 standard and US regulation)		86.6 ‡	85.0 ‡
<b>Electrical System</b>			
Volts – Hz – Phase		115 – 60 – 1	
Rated current (Amps)		15.7	
Minimum ampacity for wire sizing (Amps)		18.1	
Max. fuse size (Amps)		20	
Control Transformer (VA)		40	
External control power available	Heating (VA)	40	
	Cooling (VA)	30	
<b>Blower Data (Side Air Return)</b>			
Heating blower speed at 0.20 in wc (50 Pa)		See ECM 2.3 motor cfm table	
Heating blower speed at 0.50 in wc (125 Pa)			
Motor (HP) / Number of speeds		1 HP ECM 2.3 / Variable Speed	
Blower wheel size in(mm) – tight housing		12 x 10 (305 x 254)	
<b>General Information</b>			
Overall dimensions W x D x H – in(mm)		24–3/4 x 52 x 39–1/4 (629 x 1321 x 997)	
Supply air opening – in(mm)		23–3/4" x 23–3/4" (603 x 603)	
Return air opening – in(mm)		23–3/4" x 19–3/4" (603 x 502)	
Filter size, 1 or 2 inch (25 or 51mm) – in(mm)		20" x 24" x 1" or 2" (508 x 610) – qty=1 16" x 24" x 1" (406 x 610) – qty=2	
Shipping weight – lbs(kg)		270 (122.5)	
Air conditioning at .5 in wc (125 Pa), maximum output		5.0 tons	

**\*INPUT & OUTPUT ADJUSTMENT**

Pump pressure can be adjusted to maintain proper firing rate.

Adjust flue gas temperature between 400 and 575 °F/204 and 301 °C

Adjust fan speed for air temperature rise of 55 to 85 °F/30 to 47 °C.

\*\* AFUE value established after minimum 20 hours of continuous operation.

‡ Meets EnergyStar guidelines

OBL/OVL

## AIR DELIVERY - CFM (WITH FILTERS)

### OBL098

External Static Pressure						
in. w.c.	0.20	0.30	0.40	0.50	0.60	0.70
Speed	CFM					
<b>HIGH</b>	1420	1335	1240	1180	1085	1025
<b>MED-HIGH</b>	1275	1230	1170	1095	1045	960
<b>MED-LOW</b>	1015	1000	955	915	860	785
<b>LOW</b>	815	785	775	730	690	635

External Static Pressure						
Pa	50	75	100	125	149	174
Speed	L/s					
<b>HIGH</b>	670	630	585	557	512	484
<b>MED-HIGH</b>	602	580	552	517	493	453
<b>MED-LOW</b>	479	472	451	432	406	370
<b>LOW</b>	385	370	366	345	326	300

### OBL112

External Static Pressure						
in. w.c.	0.20	0.30	0.40	0.50	0.60	0.70
Speed	CFM					
<b>HIGH</b>	1680	1640	1600	1590	1540	1460
<b>MED-HIGH</b>	1210	1190	1180	1160	1130	1110
<b>MED-LOW</b>	1110	1070	1040	1010	970	930
<b>LOW</b>	960	940	920	890	860	830

External Static Pressure						
Pa	50	75	100	125	149	174
Speed	L/s					
<b>HIGH</b>	793	774	755	750	727	689
<b>MED-HIGH</b>	571	562	557	547	533	524
<b>MED-LOW</b>	524	505	491	477	458	439
<b>LOW</b>	453	444	434	420	406	392

OBL/OVL

### OBL154

External Static Pressure						
in. w.c.	0.20	0.30	0.40	0.50	0.60	0.70
Speed	CFM					
<b>HIGH</b>	2185	2115	2045	1995	1905	1820
<b>MED-HIGH</b>	1900	1845	1810	1760	1685	1635
<b>MED-LOW</b>	1475	1465	1460	1435	1380	1335
<b>LOW</b>	1140	1125	1110	1100	1085	1060

External Static Pressure						
Pa	50	75	100	125	149	174
Speed	L/s					
<b>HIGH</b>	1031	998	965	941	899	859
<b>MED-HIGH</b>	897	871	854	831	795	772
<b>MED-LOW</b>	696	691	689	677	651	630
<b>LOW</b>	538	531	524	519	512	500

## FURNACE ACCESSORIES

FURNACE ACCESSORIES	
KLAV0201DET	Blocked Vent Shutoff Kit
KLAFV0101DET	Insulated Flex vent for 098/112 – 10 ft. (3 M) Long
KLAFV0201DET	Insulated Flex vent for 098/112 – 20 ft. (6 M) Long
KLAVT0101DET	Vent Terminal Kit for 098/112
KLAFV0301DET	Insulated Flex vent for 154 – 8 ft. (2 M) Long
KLAFV0401DET	Insulated Flex vent for 154 – 20 ft. (6 M) Long
KLAVT0201DET	Vent Terminal Kit for 154

# AIR DELIVERY - CFM (WITH FILTERS)

## OVL098

(Units with 1/2 HP ECM 2.3 Motor)

OBL/OVL

Heating Mode 24 VAC input (R) on W only				
SW1- HEAT DIP switch position	HEAT INPUT(US-GPH)	CFM (L/s) with "SW3-ADJ" switch position A	CFM (L/s) with "SW3-ADJ" switch position B	CFM (L/s) with "SW3-ADJ" switch position C
A (1=OFF, 2=OFF)	0.70	1260 (595)	1385 (654)	1135 (536)
B (1=ON, 2=OFF)	0.60	1050 (496)	1155 (545)	945 (446)
*C (1=OFF, 2=ON)	0.50	850 (401)	935 (441)	765 (361)
D (1=ON, 2=ON)	Same value as DIP switch position A			
CONTINUOUS FAN				
SW2- COOL DIP switch position	A/C size (tons)	CFM (L/s) with "SW3-ADJ" switch position A	CFM (L/s) with "SW3-ADJ" switch position B	CFM (L/s) with "SW3-ADJ" switch position C
A (1=OFF, 2=OFF)	3.0	900 (425)	990 (467)	810 (382)
B (1=ON, 2=OFF)	2.5	750 (354)	830 (392)	675 (319)
C (1=OFF, 2=ON)	2.0	600 (283)	660 (311)	540 (255)
D (1=ON, 2=ON)	1.5	450 (212)	495 (234)	405 (191)
COOLING OR HEAT PUMP HEATING MODE				
SW2- COOL DIP switch position	A/C size (tons)	CFM (L/s) with "SW3-ADJ" switch position A	CFM (L/s) with "SW3-ADJ" switch position B	CFM (L/s) with "SW3-ADJ" switch position C
A (1=OFF, 2=OFF)	3.0	1200 (566)	1320 (623)	1080 (510)
B (1=ON, 2=OFF)	2.5	1000 (472)	1100 (519)	900 (425)
C (1=OFF, 2=ON)	2.0	800 (378)	880 (415)	720 (340)
D (1=ON, 2=ON)	1.5	600 (283)	660 (311)	540 (255)
In Cooling - Dehumidification mode, with no 24 VAC input to DH, the CFMs are reduced by 15%. The CFMs shown are reduced by 20% if there is 24 VAC input to Y1 (Slow speed of 2-speed compressor)				
DELAY PROFILE FOR OIL HEATING MODE				
SW4- DELAY DIP switch position	HEAT INPUT	PreRun ON Delay	ShortRun ON Delay	OFF Delay
A (1=OFF, 2=OFF)	0.75	13% - 45 sec.	19% - 30 sec	38% -3 min.
B (1=ON, 2=OFF)	0.65	13% - 45 sec.	19% - 60 sec	38% -3 min.
*C (1=OFF, 2=ON)	0.50	13% - 60 sec.	13% - 60 sec	38% -3 min.
D (1=ON, 2=ON)	All	13% - 30 sec.	100% - 0 sec	100% - 2 min.
PreRun and ShortRun are the periods of time when the blower starts at very low CFM to minimize the distribution of cool air in the system and then runs up to normal speed. Off Delay is the time required to cool down the heat exchanger with low CFMs, to minimize cool draft in the air distribution system.				
DELAY PROFILE FOR COOLING OR HEAT PUMP HEATING MODE				
No adjustment required	A/C size	PreRun ON-Delay CFM Level - Time	ShortRun ON-Delay CFM Level - Time	OFF delay CFM level - Time
-	All	No delay	No delay	100% - 90 sec.
PreRun and ShortRun are the periods of time when the the blower starts at very low CFM to minimize the distribution of cool air in the system and then runs up to normal speed. Off Delay is the time required to cool down the coil (heating mode) with low CFMs, to minimize cool draft in the air distribution system.				

# AIR DELIVERY - CFM (WITH FILTERS)

## OVL112

(Units with 3/4 HP ECM 2.3 Motor)

OBL/OVL

Heating Mode 24 VAC input (R) on W only				
SW1- HEAT DIP switch position	HEAT INPUT(US-GPH)	CFM (L/s) with "SW3-ADJ" switch position A	CFM (L/s) with "SW3-ADJ" switch position B	CFM (L/s) with "SW3-ADJ" switch position C
A (1=OFF, 2=OFF)	0.68	1160 (547)	1310 (618)	990 (467)
B (1=ON, 2=OFF)	0.80	1340 (632)	1400 (661)	1140 (538)
*C (1=OFF, 2=ON)	0.68	1000 (472)	1130 (533)	850 (401)
* D (1=ON, 2=ON)	0.80	1160 (547)	1310 (618)	990 (467)
CONTINUOUS FAN 24-VAC input (R) on G only				
SW2- COOL DIP switch position	A/C size (tons)	CFM (L/s) with "SW3-ADJ" switch position A	CFM (L/s) with "SW3-ADJ" switch position B	CFM (L/s) with "SW3-ADJ" switch position C
A (1=OFF, 2=OFF)	4.0	1200 (566)	1320 (623)	1080 (510)
B (1=ON, 2=OFF)	3.5	1050 (496)	1155 (545)	945 (446)
C (1=OFF, 2=ON)	3.0	900 (425)	990 (467)	810 (382)
D (1=ON, 2=ON)	2.5	750 (354)	825 (389)	675 (319)
COOLING OR HEAT PUMP HEATING MODE 24-VAC input (R) to G, Y/Y2 and O (for cooling)				
SW2- COOL DIP switch position	A/C size (tons)	CFM (L/s) with "SW3-ADJ" switch position A	CFM (L/s) with "SW3-ADJ" switch position B	CFM (L/s) with "SW3-ADJ" switch position C
A (1=OFF, 2=OFF)	4.0	1600 (755)	1760 (831)	1440 (680)
B (1=ON, 2=OFF)	3.5	1400 (661)	1540 (727)	1260 (595)
C (1=OFF, 2=ON)	3.0	1200 (566)	1320 (623)	1080 (510)
D (1=ON, 2=ON)	2.5	1000 (472)	1100 (520)	900 (425)
In Cooling - Dehumidification mode, with no 24 VAC input to DH, the CFMs are reduced by 15%. The CFMs shown are reduced by 20% if there is 24 VAC input to Y1 (first stage cooling mode)				
DELAY PROFILE FOR OIL HEATING MODE				
SW4- DELAY DIP switch position	HEAT INPUT	PreRun ON Delay	ShortRun ON Delay	OFF Delay
A (1=OFF, 2=OFF)	0.68	13% - 45 sec.	19% - 60 sec	38% - 3 min.
B (1=ON, 2=OFF)	0.80	13% - 45 sec.	19% - 30 sec	38% - 3 min.
C (1=OFF, 2=ON)	All	13% - 45 sec.	100% - 0 sec	100% - 2 min.
D (1=ON, 2=ON)	All	13% - 90 sec.	100% - 0 sec	100% - 2 min.
PreRun and ShortRun are the periods of time when the blower starts at very low CFM to minimize the distribution of cool air in the system and then runs up to normal speed. Off Delay is the time required to cool down the heat exchanger with low CFMs, to minimize cool draft in the air distribution system.				
DELAY PROFILE FOR COOLING OR HEAT PUMP HEATING MODE				
No adjustment required	A/C size	PreRun ON-Delay CFM Level - Time	ShortRun ON-Delay CFM Level - Time	OFF delay CFM level - Time
-	All	No delay	No delay	100% - 90 sec.
PreRun and ShortRun are the periods of time when the the blower starts at very low CFM to minimize the distribution of cool air in the system and then runs up to normal speed. Off Delay is the time required to cool down the coil (heating mode) with low CFMs, to minimize cool draft in the air distribution system.				

# AIR DELIVERY - CFM (WITH FILTERS)

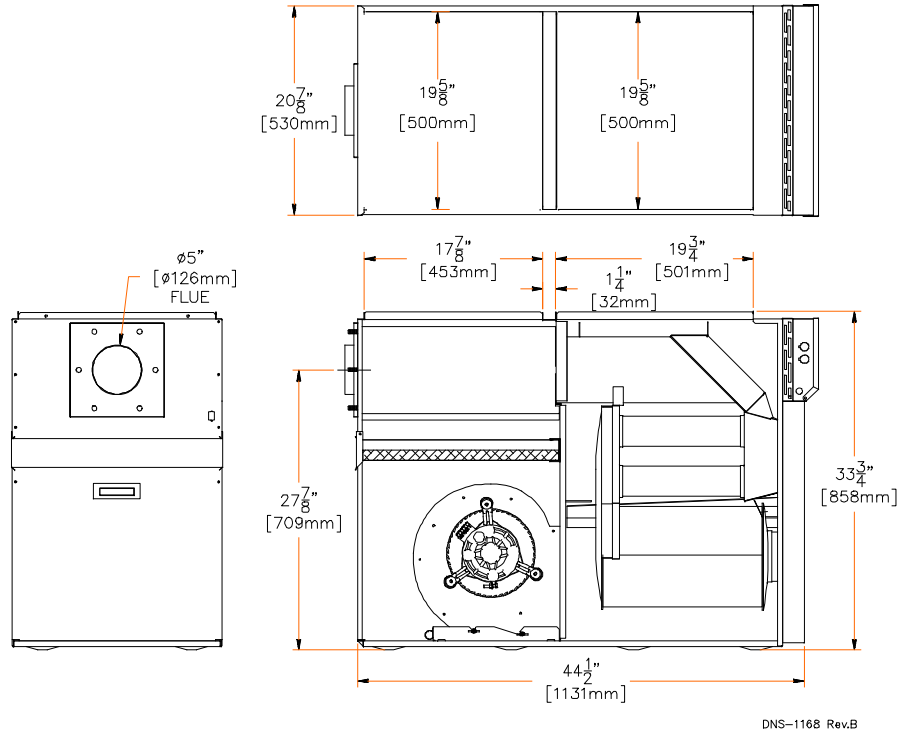
## OVL154

(Units with 1.0 HP ECM 2.3 Motor)

OBL/OVL

Heating Mode 24 VAC input (R) on W only				
SW1- HEAT DIP switch position	HEAT INPUT(US-GPH)	CFM (L/s) with "SW3-ADJ" switch position A	CFM (L/s) with "SW3-ADJ" switch position B	CFM (L/s) with "SW3-ADJ" switch position C
A (1=OFF, 2=OFF)	0.90	1450 (684)	1640 (774)	1235 (583)
B (1=ON, 2=OFF)	1.10	1700 (802)	1920 (906)	1445 (682)
C (1=OFF, 2=ON)	Settings not used in this mode			
D (1=ON, 2=ON)				
CONTINUOUS FAN 24-VAC input (R) on G only				
SW2- COOL DIP switch position	A/C size (tons)	CFM (L/s) with "SW3-ADJ" switch position A	CFM (L/s) with "SW3-ADJ" switch position B	CFM (L/s) with "SW3-ADJ" switch position C
A (1=OFF, 2=OFF)	5.0	1500 (708)	1650 (779)	1350 (637)
B (1=ON, 2=OFF)	4.0	1200 (566)	1320 (623)	1080 (510)
C (1=OFF, 2=ON)	3.5	1050 (496)	1155 (545)	945 (446)
D (1=ON, 2=ON)	3.0	900 (425)	990 (467)	810 (382)
COOLING OR HEAT PUMP HEATING MODE 24-VAC input (R) to G, Y/Y2 and O (for cooling)				
SW2- COOL DIP switch position	A/C size (tons)	CFM (L/s) with "SW3-ADJ" switch position A	CFM (L/s) with "SW3-ADJ" switch position B	CFM (L/s) with "SW3-ADJ" switch position C
A (1=OFF, 2=OFF)	5.0	2000 (944)	2200 (1038)	1800 (849)
B (1=ON, 2=OFF)	4.0	1600 (755)	1760 (831)	1440 (680)
C (1=OFF, 2=ON)	3.5	1400 (661)	1540 (727)	1260 (595)
D (1=ON, 2=ON)	3.0	1200 (566)	1320 (623)	1080 (510)
In Cooling - Dehumidification mode, with no 24 VAC input to DH, the CFMs are reduced by 15%. The CFMs shown are reduced by 20% if there is 24 VAC input to Y1 (first stage cooling mode)				
DELAY PROFILE FOR OIL HEATING MODE				
SW4- DELAY DIP switch position	HEAT INPUT	PreRun ON Delay	ShortRun ON Delay	OFF Delay
A (1=OFF, 2=OFF)	0.90	13% - 45 sec.	44% - 30 sec	38% - 3 min.
B (1=ON, 2=OFF)	1.10	13% - 30 sec.	44% - 30 sec	38% - 3 min.
C (1=OFF, 2=ON)	1.10	13% - 30 sec.	50% - 30 sec	38% - 3 min.
D (1=ON, 2=ON)	Setting not used in this application			
PreRun and ShortRun are the periods of time when the blower starts at very low CFM to minimize the distribution of cool air in the system and then runs up to normal speed. Off Delay is the time required to cool down the heat exchanger with low CFMs, to minimize cool draft in the air distribution system.				
DELAY PROFILE FOR COOLING OR HEAT PUMP HEATING MODE				
No adjustment required	A/C size	PreRun ON-Delay CFM Level - Time	ShortRun ON-Delay CFM Level - Time	OFF delay CFM level - Time
-	All	No delay	No delay	100% - 90 sec.
PreRun and ShortRun are the periods of time when the the blower starts at very low CFM to minimize the distribution of cool air in the system and then runs up to normal speed. Off Delay is the time required to cool down the coil (heating mode) with low CFMs, to minimize cool draft in the air distribution system.				

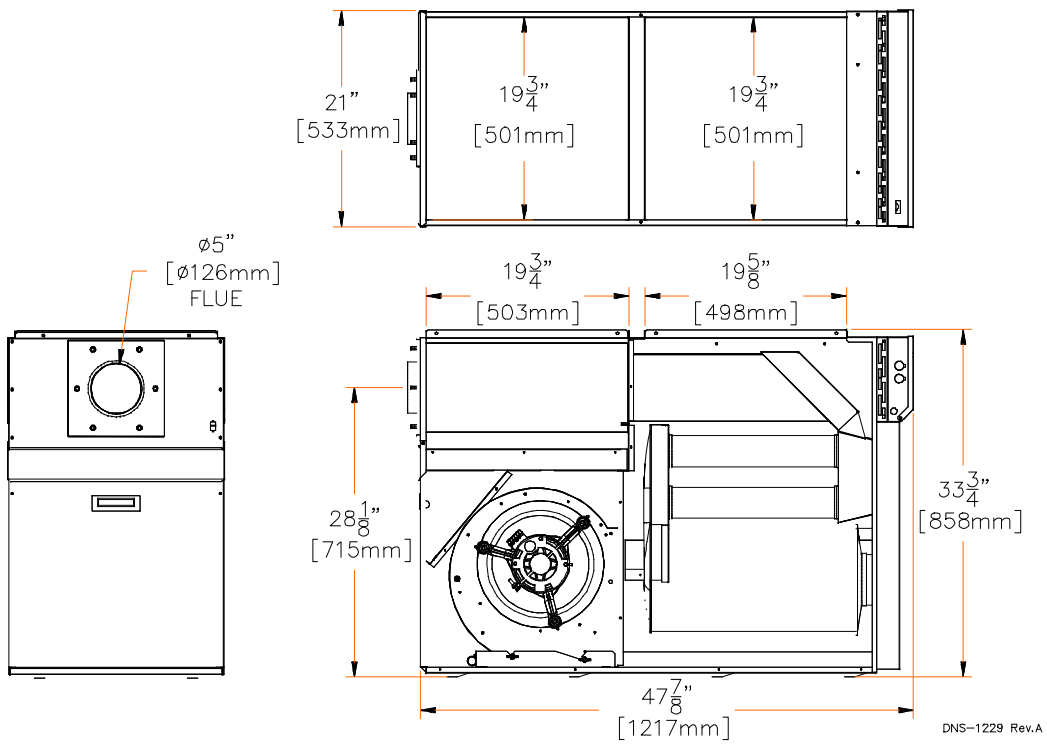
## DIMENSIONS - OBL098 / OVL098



OBL/OVL

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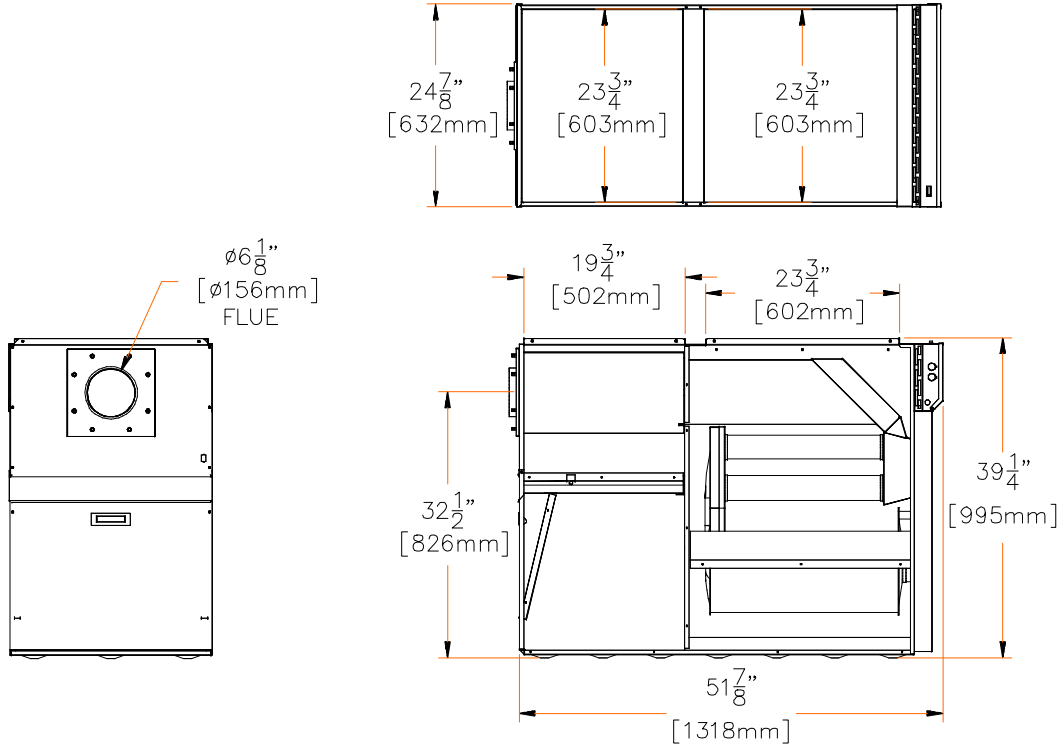
## DIMENSIONS - OBL112 / OVL112



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# DIMENSIONS - OBL154 / OVL154

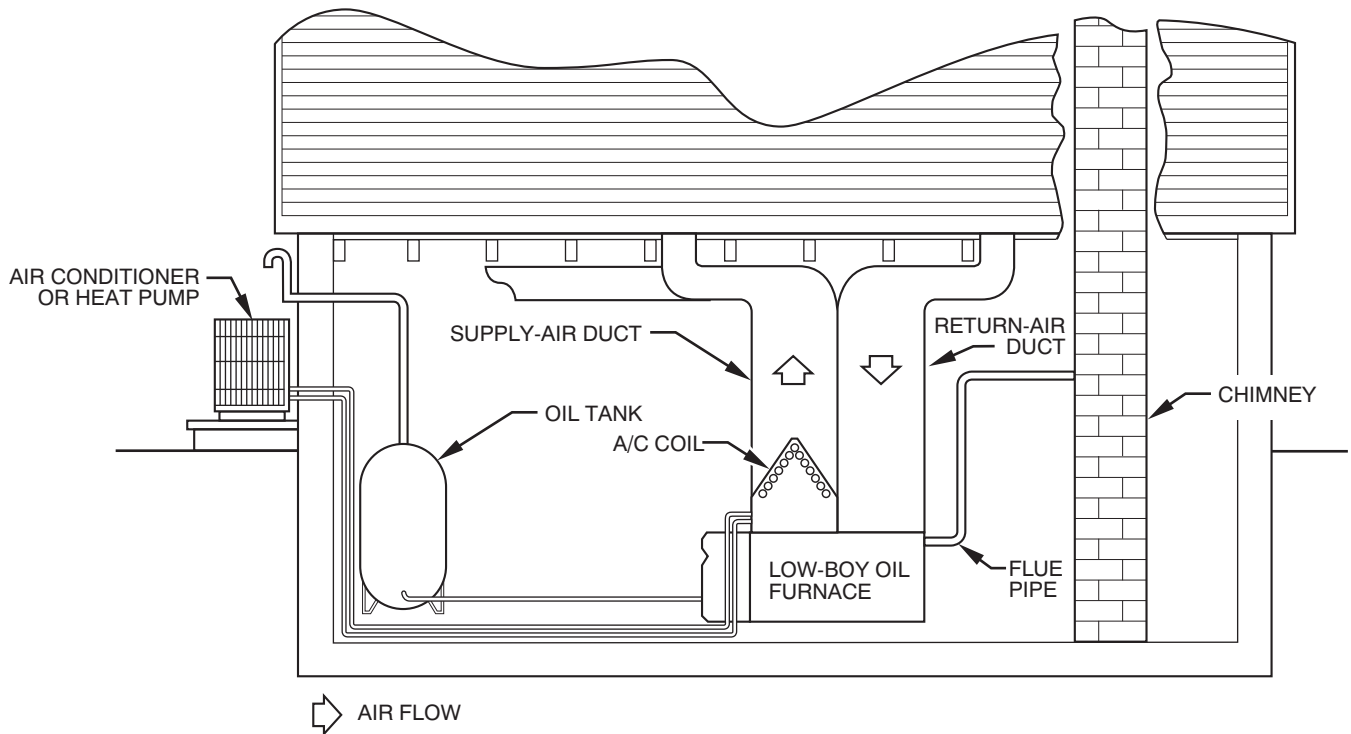
OBL/OVL



DNS-1238 Rev.A

A10191

## TYPICAL INSTALLATION



A98010