

PRODUCT DESCRIPTION

CASING

- All KLPP unit casing panels are constructed of 20 gage galvanized steel.
- Removable bottom panel allows easy access to all internal components.
- The KLPP unit is equipped with a backdraft damper to prevent primary air entering ceiling plenum through induced inlet.

INLET COLLARS

- All round, 20 gage inlet collars accommodate standard spiral and flex duct sizes. Size 4 units also offer an 8" x 14" rectangular inlet.
- The primary air inlet is located on either the left-hand or right-hand side of the unit inlet panel of KLPP unit. (Hand is determined by looking at the unit in the direction of airflow with the unit in the installed position.)

OUTLET CONNECTIONS

- All outlet connections are rectangular and require a flanged duct connection.

DAMPER ASSEMBLY

- All unit sizes on the KLPP with exception the rectangle inlet option on unit size 4, utilize a round volume control damper. The unit size 4 with 8" x 14" inlet on the KLPP have a rectangular volume control damper.
- All damper assemblies are equipped with a solid shaft that rotates in self lubricating Delrin® bearings.
- Damper blade incorporates a flexible gasket for tight airflow shutoff and operates over a full 90 degree rotation.
- The damper position is marked by an arrow embossment on the end of the damper shaft.

INDUCED AIR INLET

- Induced air inlet filters (disposable, construction type) are available. These filters are typically used for job start-up and are provided with clip frames for easy filter replacement.

CASING LINERS

All liners are attached to the unit casing with both adhesive and weld pins to ensure long term durability (excludes Sterilwall and Perforated Doublewall). The standard liner option is 1/2" thick, 1 1/2 lb. dual density fiberglass insulation that meets UL 181 and NFPA 90A.

- **(Optional)** Cellular Insulation: 1/2" thick, 1 1/2 lb. density, smooth surface, polyolefin, closed-cell foam insulation for fiber free application. Cellular insulation meets UL 181 and NFPA 90A and does not support mold or bacteria growth.
- **(Optional)** Sterilwall Insulation: 1/2", 1 1/2 lb. dual density fiberglass insulation that meets UL 181 and NFPA 90A, enclosed between the unit casing and a non-perforated internal sheet metal cover extending over the fiberglass insulation, as well as covering the liner cut edges.

- **(Optional)** Perforated Doublewall Insulation: 1/2", 1 1/2 lb. dual density fiberglass insulation that meets UL 181 and NFPA 90A, enclosed between the unit casing and a perforated internal sheet metal cover extending over the fiberglass insulation, as well as covering the liner cut edges.
- **(Optional)** Foil Encapsulated Insulation: Foil reinforced, wrapped edges, 1/2" thick, 1 1/2 lb. density fiberglass insulation that meets UL 181 and NFPA 90A.

AIRFLOW SENSOR

- All units are equipped with a factory installed inlet airflow sensor device.
- K4 LineaCross: A four-quadrant, multi-point, center averaging airflow sensor.
- **(Optional)** A linear, multi-point, velocity averaging airflow sensor with an amplified signal.
- Balancing taps are provided for easy airflow verification.

FAN MOTORS

- Fan motors are single-voltage (120,208/240 and 277) 1-phase, permanent split capacitor (PSC) type.
- **(Optional)** [120, 208/240, or 277 volt, 1-phase] ECM (electronically commutated motor) fan motor is available.
- Units equipped with [120, 208/240 or 277 volt, 1-phase] electric heat have fan motors wired with the same line voltage. Units with [208 volt, 3-phase, 3-wire] electric heat utilize 208/240 volt fan motors. Units with [480 volt, 3-phase, 4-wire] heat are equipped with 277 volt fan motors.
- Quick electrical disconnects are provided on the motor wiring.
- A motor disconnect switch is available. (This option is not available if the unit is equipped with electric heat including the door locking disconnect option.)
- Motor fusing is available.

FAN SPEED CONTROL

- All units with PSC motors are equipped with SCR fan speed controller capable of reducing fan output by as much as 50 to 55%.
- All units with optional ECM motors include either a manual or remote adjustable speed controller. The manual adjustable speed controller features a digital display that alternates between the RPM of the motor and percentage of flow and can be set and adjusted in the field. The remote adjustable speed controller communicates with a DDC controller to remotely set and/or adjust the fan speed using either a 0-10 VDC or 2-10 VDC signal and provides a manual override capability to set and/or adjust the fan speed in the field.

CONTROLS

- Pneumatic, analog or direct digital control types are available. Digital controls can be provided by others or Krueger for factory mounting. A "no control" unit is also available for field mounting of direct digital controls.

PRODUCT DESCRIPTION (CONTINUED)

HOT WATER HEAT

- One or two row coils are constructed of 10 aluminum fins per inch with 1/2" O.D. sweat type, left-hand or right hand, tubing connections. The coil tubing is water leakage tested to 400 psig.

ELECTRIC HEAT

- Heaters are UL listed and are constructed of 20 gage galvanized steel.
- Available combinations are: [120, 208/240, or 277 volt, 1-phase], [208 volt, 3-phase, 3-wire], [480 volt, 3-phase, 4-wire]
- See fan motor description for electric heat/fan motor combinations.
- Standard heaters are equipped with automatic reset thermal cutout, magnetic contactors, airflow proving switch, and 80/20 Ni-Cr heating elements.
- Electric heater options include fused or non-fused door interlocking disconnect switch, fuse-block, manual reset cutout, and dust tight enclosure construction.
- AC solid state relays offer silent operation for staged electric heat.
- LineaHeat solid state electronic proportional control of electric heat is available with or without leaving air temperature control. See Krueger's Terminal Unit Engineering section for additional information.

CONTROL TRANSFORMERS

- Units with and without electric heat include a factory supplied, mounted and wired control transformer, mounted inside the electric heat enclosure for electronic control applications.

LABELS

- Label information adhered to each unit includes model name, unit size, configuration code, airflow (CFM), balancing chart, tagging data, electrical ratings, removal of fan protection packing material information, and all required agency listings.

PACKAGING

- Units are palletized. Each pallet of units is banded and stretch wrapped with cellophane.

UNIT CAPACITIES

UNIT SIZE	INLET SIZE	PRIMARY AIRFLOW		FAN AIRFLOW		MOTOR HP	MOTOR TYPE	MOTOR FLA		
		MAX	MIN	MAX	MIN			120V	208/240V	277V
2	6	515	90 or 0	665	350	1/6	PSC	3	1.4	1
	8	920	160 or 0							
	10	1430	250 or 0							
4	8	920	160 or 0	855	420	1/4		4.3	1.7	1.4
	10	1430	250 or 0							
	8 x 14	2060	360 or 0							

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		MAX	MIN	MAX	MIN			120V	208/240V	277V
2	6	515	90 or 0	820	125	1/3	EC	5	2.8	2.6
	8	920	160 or 0							
	10	1430	250 or 0							
4	8	920	160 or 0	885	135	1/3		5	2.8	2.6
	10	1430	250 or 0							
	8 x 14	2060	360 or 0							

NOTES: KLPP maximum primary airflow (CFM) is based on 1.00" WG differential pressure signal from inlet airflow sensor. Minimum recommended airflow (CFM) is based on 0.03" WG differential pressure of the inlet airflow sensor, or 0 CFM. 0.03" WG is equal to 15%–20% of the nominal flow rating of the terminal. Less than 15%-20% may result in greater than +/-5% control of box flow. Maximum/minimum fan airflow (CFM) based on 0.25" WG external downstream static pressure. KLPP airflows based on water coil on induction port. See page B2-145 for complete fan curves.

DAMPER LEAKAGE

INLET SIZE	DAMPER LEAKAGE		
	1.5" WG	3.0" WG	6.0" WG
	CFM	CFM	CFM
6	4	5	7
8	4	5	7
10	4	5	7

NOTES: Damper leakage is measured with the damper fully closed using an actuator. A precision low flow orifice is used upstream of the unit to measure the leakage rate as a function of the measured upstream static pressure. Leakage testing conducted in accordance with ASHRAE 130-2008.