

SUGGESTED SPECIFICATION & CONFIGURATION

Furnish and install Krueger model LMHS-VP single duct (variable or constant) terminal units of the sizes shown in the plans.

Terminals shall be certified by use of the AHRI Standard 880 Certification Program and carry the AHRI seal.

Unit casing shall be constructed of not less than 22 gauge galvanized steel.

- **(Optional)** Unit casing shall be constructed of not less than 20 gauge galvanized steel.

Unit labels shall be adhered to each unit including model size, airflow (CFM), balancing chart, and tagged data.

The control air damper assembly shall be constructed of heavy gauge galvanized steel with solid 1/2" shaft rotating in Delrin® bearings. Damper shaft shall be marked on the end to indicate damper position. Damper blade shall incorporate a flexible gasket for tight airflow shutoff and operate over a full 90° rotation.

LMHS unit shall be equipped with a factory installed airflow sensing device. Provide a K4 LineaCross, four quadrant, multi-point center averaging sensor with an amplified signal.

- **(Optional)** Provide a linear, multi-point, velocity averaging sensor with an amplified signal.

Provide balancing taps to allow for easy airflow verification.

The radiated and discharge attenuation factors for the specified NC levels shall be based on either room absorption, plus an environmental adjustment factor or the attenuation factors from AHRI Standard 885-08 Appendix E, which includes room absorption, environmental adjustment factor, duct insertion, end reflection and duct branching.

SOUND ATTENUATOR

- **(Optional)** The single duct terminal units shall be provided with a 1-piece integral sound attenuator section. The sound attenuator section shall consist of a continuous extension of the standard galvanized coated steel casing. Separate slip and drive attached attenuator will not be accepted.

CASING LINERS

Unit casing shall be lined with 1/2" thick, 1 1/2 lb. dual density fiberglass insulation that meets UL 181 and NFPA 90A. Insulation shall be attached to the unit casing by adhesive and weld pins.

- **(Optional)** 1" Thick Insulation: Unit casing shall be lined with 1" thick, 1 1/2 lb. dual density fiberglass insulation that meets UL 181 and NFPA 90A. Insulation shall be attached to the unit casing by adhesive and weld pins.
- **(Optional)** Cellular Insulation: Unit casing shall be lined with 1/2" or 1" 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. Insulation shall be attached to the unit casing by adhesive and weld pins. Units with electric reheat

1/2" cellular insulation is enclosed between the unit casing and a non-perforated internal sheet metal cover extending over the cellular insulation, as well as covering the liner cut edges.

- **(Optional)** Steriliner Insulation: Unit casing shall be lined with 13/16" thick, 4 lb. density, rigid board insulation with nylon reinforced foil covering insulation fibers that meets UL 181 and NFPA 90A. Liner shall be attached to unit casing by adhesive and weld pins with full-seam-length Z-strips to enclose and seal the insulation cut edges.
- **(Optional)** Sterilwall Insulation: Unit casing shall be lined with 1/2" or 1" thick, 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: Unit casing shall be lined with 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)** No Liner: Unit casing shall be equipped with no internal insulation liner.

HOT WATER COILS

Hot water coil casing shall be constructed with minimum 20 gauge galvanized steel with slip and drive discharge for attachment to downstream duct work. Coils shall be factory attached to the terminal unit. Fins shall be rippled and corrugated heavy gauge aluminum, mechanically bonded to tubes. Tubes shall be copper with minimum wall thickness of 0.016" and with male solder header connections. Coils shall include vent and drain ports for startup and servicing. Coils shall be leak tested to 400 psi. Number of coil rows, circuits, and fins per inch shall be selected to provide performance as required by the plans. Coil performance data shall be based on tests run in accordance with AHRI Standard 410.

VALVE PACKAGE

Valve package shall be factory assembled and tested to 100 psi and consist of unions to separate valve package from water coil, PT test ports on supply and return, and manual shutoff ball valves to isolate water coil and valve package from water supply. Actuated valve shall be 2-way valve with on/off 24vac controlled actuator, normally closed.

- **(Optional)** 3-way valve.
- **(Optional)** 3-point floating actuator, fail in place.
- **(Optional)** Y-strainer with blowdown port.
- **(Optional)** Automatic flow control.

ACCESS PANEL

Access panel shall be in the unit casing for viewing of damper components and/or for upstream cleaning of the hot water coil fins. (Access panel not available with electric heat.)

SUGGESTED SPECIFICATION & CONFIGURATION (CONTINUED)

1. SERIES: (XXXX-XX)

LMHS-VP - Single Duct Terminal Unit with Factory Valve Package

2. SENSOR TYPE: (X)

1 - Linear Averaging (Standard)
3 - K4 LineaCross (Four Quadrant)

3. UNIT STYLE: (X)

0 - Standard LMHS
1 - LMHS with Attenuator
6 - LMHS Low Profile
7 - LMHS Low Profile with Attenuator

4. LINER TYPE: (X)

0 - 1/2" Liner
1 - 1" Liner
2 - Steriliner
3 - No Liner
4 - Sterilwall with 1/2" Dual Density
8 - Sterilwall with 1" Dual Density
A - Perforated Doublewall with 1/2" Dual Density
B - Perforated Doublewall with 1" Dual Density
F - 1/2" Cellular
H - 1" Cellular

5. UNIT CASING: (XX)

(CONTROLS HANDING, GAUGE, ACCESS)

0L - Left-hand Side, 22 Gauge
1L - Left-hand Side, 22 Gauge & Access Panel
2L - Left-hand Side, 20 Gauge
3L - Left-hand Side, 20 Gauge & Access Panel
0R - Right-hand Side, 22 Gauge
1R - Right-hand Side, 22 Gauge & Access Panel
2R - Right-hand Side, 20 Gauge
3R - Right-hand Side, 20 Gauge & Access Panel

6. INLET CODE: (XX)

04 - 4"	05 - 5"	06 - 6"
07 - 7"	08 - 8"	09 - 9"
10 - 10"	12 - 12"	14 - 14"
16 - 16"	20 - 13 1/2"x 7 7/8"	22 - 24"x16"

7. CONTROL TYPE: (XXXX)

(2XXX) - Analog
(7XXX) - Digital, BACnet Compatible
(6XXX) - Digital, Standalone
(XXXX) - Factory Mounted, Provided by Others
(1XXX) - Pneumatic

8. CONTROL ACCESSORIES: (X)

0 - None
4 - 2-Pipe DA Thermostat *
5 - 2-Pipe RA Thermostat *

9. UNIT ACCESSORIES: (X) (X) (X) (X) (X) (X)

0 - None
S - Hangers
D - Disconnect for Controls
E - Dust-tight Control Enclosure **
G - 24-24 VAC Transformer
H - 120-24 VAC Transformer
J - 208-24 VAC Transformer
K - 240-24 VAC Transformer
L - 277-24 VAC Transformer
P - Cam Locks (for Liner Codes 1 - 5)
Y - Cam Locks (for Liner Codes 4 & A)

10. WATER HEAT: (XXX)

(ROWS/CONNECTION HAND)

000 - N/A / None
W11 - 1-Row/Right, 10 FPI U11 - 1-Row/Right, 12 FPI
W12 - 2-Row/Right, 10 FPI U12 - 2-Row/Right, 12 FPI
W13 - 3-Row/Right, 10 FPI U13 - 3-Row/Right, 12 FPI
W14 - 4-Row/Right, 10 FPI U14 - 4-Row/Right, 12 FPI
W21 - 1-Row/Left, 10 FPI U21 - 1-Row/Left, 12 FPI
W22 - 2-Row/Left, 10 FPI U22 - 2-Row/Left, 12 FPI
W23 - 3-Row/Left, 10 FPI U23 - 3-Row/Left, 12 FPI
W24 - 4-Row/Left, 10 FPI U24 - 4-Row/Left, 12 FPI

11. HEAT COIL ACCESSORIES: (X)

0 - None
P - Vent & Drain (standard)

12. VALVE MOUNTING (X)

M - Factory Mounted
L - Shipped Loose

13. VALVE/ACTUATOR MANUFACTURING (X)

K - Krueger Provided Valve/Actuator
X - Provided by others

14. VALVE (XX)

20 - 2-Way Sweat Connection
30 - 3-Way Sweat Connection

15. ACTUATOR (XX)

20 - 2-Position ON/OFF, NC
30 - 3-Point Floating, Fail-In-Place

16. VP ACCESSORIES (X)

0 - None
Y - Y-Strainer with Blow Down

17. AUTOMATIC FLOW CONTROL (GPM) (X.X)

0.0 - None
0.5-7.0 - GPM (1/2" GPM increments)
8.0 - 8 GPM
9.0 - 9 GPM

* Control accessory code '4' and '5' require a pneumatic controller.
** Dust-tight control enclosure not available with pneumatic control types.

SAMPLE CONFIGURATION: LMHS-VP - 3 - D - 1 - 0L - 12 - 7105 - 0 - HSDE00 - W12 - P - MK2020 - Y - 2.5