

SPECIFICATION SECTION 22 35 23

PRODUCT: LYNC AEGIS HEAT EXCHANGER MODULE MARK II

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract apply to this Section, including General and Supplementary Conditions and Division 01 Specification Sections.

1.2 WORK INCLUDED

- A. Manufacturer shall furnish a heat exchanger module for connecting the Aegis unit to the tanks in a primary / secondary loop configuration.
- B. The heat exchanger module is a part of the overall water heating package and shall be manufactured by the provider of the heat pump system complete on a skid as a single component.
- C. Skid shall be designed for indoor mounting. An optional outdoor enclosure shall be provided for outdoor installations, designed and built by the skid manufacturer.
- D. All components necessary to operate the heat pump in conjunction with the primary and secondary loop shall be included on the skid.

1.3 SUBMITTALS

- A. Submit shop drawings and product data as specified. Include scope of supply, installation instructions, description of operation and standard of construction. Include mechanical layout drawings, flow schematic drawing and symbols.
- B. Submit electrical power distribution, signal, symbols, and control wiring.
- C. Submit manufacturer's certified capacity data.
- D. Submit installation, operation, and maintenance manual, including replacement and spare parts lists and maintenance procedures.

1.4 QUALITY ASSURANCE AND COMPLIANCE

- A. Reference Standards
  - 1. International Building Code (IBC)
  - 2. International Plumbing Code (IPC)
  - 3. Uniform Plumbing Code (UPC)
- B. Each submittal shall be provided with documentation certifying that all materials, products, components, and test reports comply with the design requirements for this project.
- C. Furnish all equipment, materials, and accessories new and free from defects.

## PART 2 – PRODUCTS

### 2.1 CONSTRUCTION

- A. The system shall be mounted on a sheet metal skid that is suitable for outdoor installation.
- B. All piping shall be copper and the connections shall be either threaded tapered NPT or crimp fittings.
- C. The system shall be suitable for indoor or outdoor installation and shall operate at ambient temperatures as low as -4 °F and as high as 113 °F. It shall allow for cold water temperatures from 41°F – 121°F and delivered hot water temperatures from 140°F to 170°F. It is the responsibility of the installing contractor to determine the level of heat trace and/or piping insulation required for outdoor installations.

### 2.2 COMPONENTS

#### A. PUMPS

- 1. The skid shall include a constant speed stainless steel domestic loop pump integrated into the skid. The pump shall have a check valve to allow the operation of two skids in parallel with one another with no additional components. The pump shall operate at 120 VAC.
- 2. The skid shall include a constant speed primary loop pump integrated into the skid. The pump shall operate at 120 VAC.

#### B. HEAT EXCHANGER

1. One or two double walled heat exchangers with positive leak detection capable of handling domestic hot water shall be included with the pump skid. Plates within the exchanger shall be 316 stainless steel and shall be brazed together with lead free solder. Heat exchanger shall be designed for an operating performance of 300,000 BTU/hr per heat exchanger. at the highest output operating condition of the heat pump.

Aegis Model	Heat Exchanger Module	Number of Heat Exchangers
250	LC2.5CMI	1
350	LC3.5CMI-LC5.0CMI	2
500	LC3.5CMI-LC5.0CMI	2

C. EXPANSION VESSEL

1. The expansion vessel shall be designed with a pressure rating of at least 150 PSI and shall include an EPDM rubber bladder. Air pressure shall be set on the site to the appropriate value and the tank shall include a pressure gage and an indicator that the bladder is in proper operating condition.

D. CONTROL VALVES

1. Motorized characterized control valves shall be included on the skid to control flow during operation, and to prevent flow when the skid is not in operation. The valves shall be wired to open when the pump is activated by the heat pump controller and to open and close via a 0-10V signal provided at the heat pump. One valve shall be included on the primary loop, and one on the domestic water loop.

E. OTHER CONNECTIONS

1. In addition to the main components, the skid shall include: ball valves on each connection to isolate either circuit, flush ports for the heat exchanger, fill ports for the primary loop and strainers to protect the heat exchanger. These components shall come mounted on the skid by the manufacturer and not be added in the field.

F. ELECTRICAL PANEL

1. A single point of electrical connection for a 120V 15A dedicated circuit shall be provided on the heat exchanger skid. In addition, connections to the heat pump shall be provided for a 0-10V modulation signal and pump/valve activation.

## PART 3 – EXECUTION

### 3.1 INSTALLATION

#### A. PIPING AND CONNECTIONS

1. All package piping shall be completed by the manufacturer prior to shipping. Field connections to be made by installing contractor.
2. Connection dimensions for the domestic water in, domestic water out, cool recovery water in, and cool recovery water out shall be of the following dimensions:

Aegis Model	Heat Exchanger Module	Domestic Water In	Domestic Water Out	Heat Pump In	Heat Pump Out
250	LC6CMI	1.5"	1.5"	1.5"	1.5"
350	LC3.5CMI- LC5.0CMI	1.5"	1.5"	1.5"	1.5"
500	LC3.5CMI- LC5.0CMI	1.5"	1.5"	1.5"	1.5"

### 3.2 START-UP AND TRAINING

- A. Engage a factory-authorized service representative to provide startup of the heat pump water heater, inspect components, assemblies, and equipment installations, including connections, and to assist in testing and training upon completion of the startup.

### 3.3 WARRANTY

- A. For warranty information, please refer to Warranty for Aegis™ Heat Pump Water Heaters document.

## PART 4: PERFORMANCE

### 4.1

- A. The primary loop temperature shall be adjustable in the heat pump controller from 140°F to 180°F.
- B. Maximum potable water temperature from the pump skid shall be 170°F with the value able to be adjusted between 140°F and 170°F on the heat pump controller.

END OF SECTION