

**Model Type R2F**  
Detailed Specifications

**General:** Provide steel double panel radiators of the lengths and in locations as indicated, and of capacities, style and having accessories as scheduled. The double heating panel radiation shall be of one-piece all-welded steel construction, consisting of a pair of flattened water tube panels welded to headers at each end. Welded to the inside of each panel shall be steel corrugated fins to increase the convective output of the radiator. The fins shall start at no less than 3" from the end of the radiator, and shall have no less than 32 fins per foot. The radiators shall include an integral heavy gauge (0.09" minimum) all-welded perforated top grille, which will cover the top of all of the finned areas (**for curved radiators the grille is omitted**).

The headers shall include all necessary inlet, outlet and vent connections as required. Standard connection sizes are ½" NPT tapered thread for supply and return piping, and 1/8" for the vent connection. Internal baffling is provided where required for proper water flow.

The radiant heating panels shall be available in lengths from 2'-0" to 29'-6" in two inch even increments without the need for splicing. The panel radiation shall be capable of being mounted to typical stud wall construction without additional blocking or strapping. Appropriate wall mounting brackets shall be provided with the radiation.

The panel radiation shall be manufactured in the USA.

**ALTERNATE:** The double panel radiators (up to four tubes tall) are to be provided with floor-mounted pedestals (OR Cantilever Wall Brackets) in lieu of the wall mounting brackets.

**Pressure Ratings:** Pressure ratings for the radiation shall be as follows:

STANDARD: Working pressure-56 PSI maximum, Test Pressure-74 PSI maximum

**OR**

MEDIUM: Working pressure-85 PSI maximum, Test Pressure-110 PSI maximum

**OR**

HIGH: Working pressure-128 PSI maximum, Test Pressure 184 PSI maximum

Panel radiation expansion shall not exceed 1/64" per foot of radiation at 215°F. The installer shall provide adequate expansion compensation for each radiator.

**Finishes:** The panel radiation shall be cleaned and phosphatized in preparation for the powder coat finish. The radiation is then finish painted with a gloss powder coat finish, for a total paint thickness of 2-3 mils (0.002" - 0.003"). The color shall be selected from the Runtal's standard colors, or optional colors shall be available at an additional cost.

**Warranty:** All Runtal radiators are covered by a 5-Year Limited Warranty

**Manufacturer:** Subject to compliance with requirements, provide flat tube panel radiation as manufactured by Runtal North America, Inc.

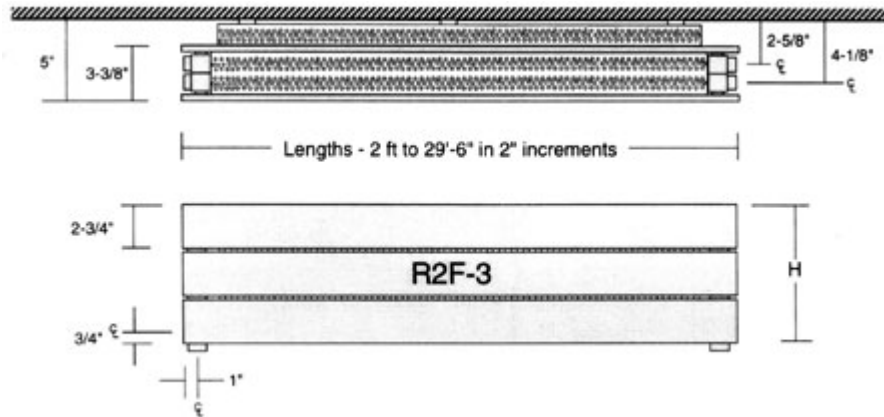
**OPTIONAL ITEMS WHICH MAY BE ADDED TO THE SPECIFICATION:**

Ribbed pipe cover trims, finished to match the radiators shall be provided with the radiation.

The radiation manufacturer shall provide combination shutoff valve/union fitting of less than two inches in width for the supply and return to each panel radiator, to be field installed by others.

Runtal-Flex connectors shall be used where appropriate to provide expansion compensation for the radiators.

## Model Type R2F Quick Specifications



R2F-3 with Both Side & Vertical Connections - Shown for Example Only

### Panel Radiator Specification

1. Radiators are manufactured of cold rolled low carbon steel, fully welded and consisting of header pipes at each end, connected by flat oval water tubes.
2. Three tube thicknesses are available:
  - Standard Pressure - 0.048" min wall thickness
  - Medium Pressure - 0.058" min wall thickness
  - High Pressure - 0.078" min wall thickness
3. Radiator header pipes are square 0.109" min wall thickness and include all necessary supply, return, and air vent connections. Internal baffling is provided as required.
4. Standard piping connections are 1/2" NPT taper threaded sockets, located in either side, or vertical positions. Optional 3/4" NPT connections are available. Air vent connections are 1/8" NPT taper threaded sockets.
5. Three working pressures are available:
  - Standard Pressure - 56 psi max (Tested at 74 psi)
  - Medium Pressure - 85 psi max (Tested at 110 psi)
  - High Pressure - 128 psi max (Tested at 184 psi)
6. Radiator expansion does not exceed 0.016 inch per linear foot at 215°F. Expansion compensation to be provided in the piping as required, by others.
7. Radiators are cleaned and phosphatized in preparation for the powder coat finish.
8. Radiators are painted with a gloss powder coat finish, for a total paint thickness of 2 to 3 mils (0.002"-0.003").
9. Color of the finish paint shall be selected from available standard or optional colors prior to ordering.
10. Wall mounting brackets are provided with radiators, unless floor posts are specified.
11. Necessary wall support blocking for proper radiator mounting shall be by others.
12. Radiators are manufactured in the USA to the sizes, capacities, and quantities as shown on the plans and schedules.