

MUELLER

Where Efficient Cooling is Best



FALLING FILM CHILLERS



3 x 5 Falling Film Chillers

Benefits of the 3 x 5 Falling Film Chiller

Mueller 3 x 5 falling film chillers are easy to clean and inspect, and require minimal downtime for maintenance. These chillers bring a faster return on investment by reducing chilling time and increasing production.

Design and Construction

- Built for lower-capacity applications
- Fully welded cabinet with a hinged and gasketed door for easy access
- Equipped with a 173- or 365-gallon self-contained storage tank

Distribution Pan Options

Distribution pans are available in extra-low, low, and high flow rates, based on chilled water usage:

- Extra-low flow: 4–10 gpm
- Low flow: 8–15 gpm
- High flow: 16–30 gpm (per evaporator)

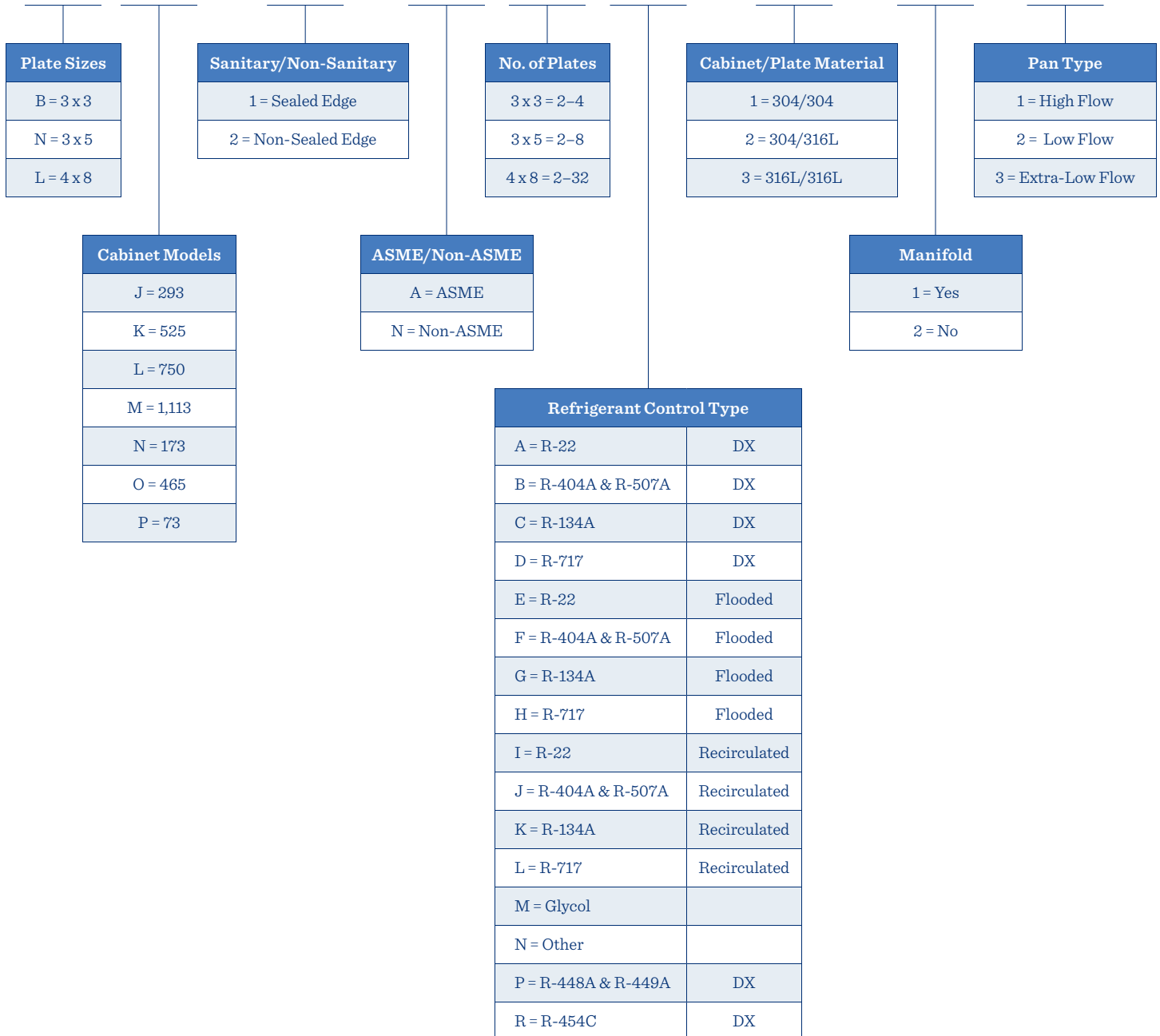


3 X 5 FALLING FILM CHILLER SPECIFICATIONS AND SIZING						
Cabinet Size	Number of Plates		Length x Width x Height in (cm)	Maximum Shipping Weight lb (kg)	Tank Capacity gal (l)	Distribution Pan Connection Size
	Minimum	Maximum				
N	2	8	68.5 x 39.125 x 77.75 (174 x 99.4 x 197.5)	1,520 (689.5)	173 (654.4)	2" or 3"
O	2	8	68.5 x 39.125 x 99.25 (174 x 99.4 x 197.5)	1,720 (781)	365 (1,382.6)	2" or 3"

NOTES:

- The refrigerant inlet connection size per plate is 1.125" tube. The outlet size is 1.25" tube.
- Maximum weight is based on the chiller's plate capacity.
- Low flow/extra-low flow distribution pan connection size is 2".
- High flow distribution pan connection size is 3".

Model Number Breakdown



Why Choose Mueller®?

Cool Products

Mueller® falling film chillers are designed to cool any liquid to within 2°F of its freezing point. Key applications include:

- Mueller falling film chillers cool food-grade liquids that will be used as ingredients in food products or will come into contact with food products.
- Our falling film chillers cool liquids with an initial temperature up to 105°F, a task most conventional chillers cannot handle.

Paul Mueller Company has cool products for all your refrigeration needs.



Chilling Solutions

To be classified as food-grade, chillers must comply with USDA and FDA standards. Consider these key requirements:

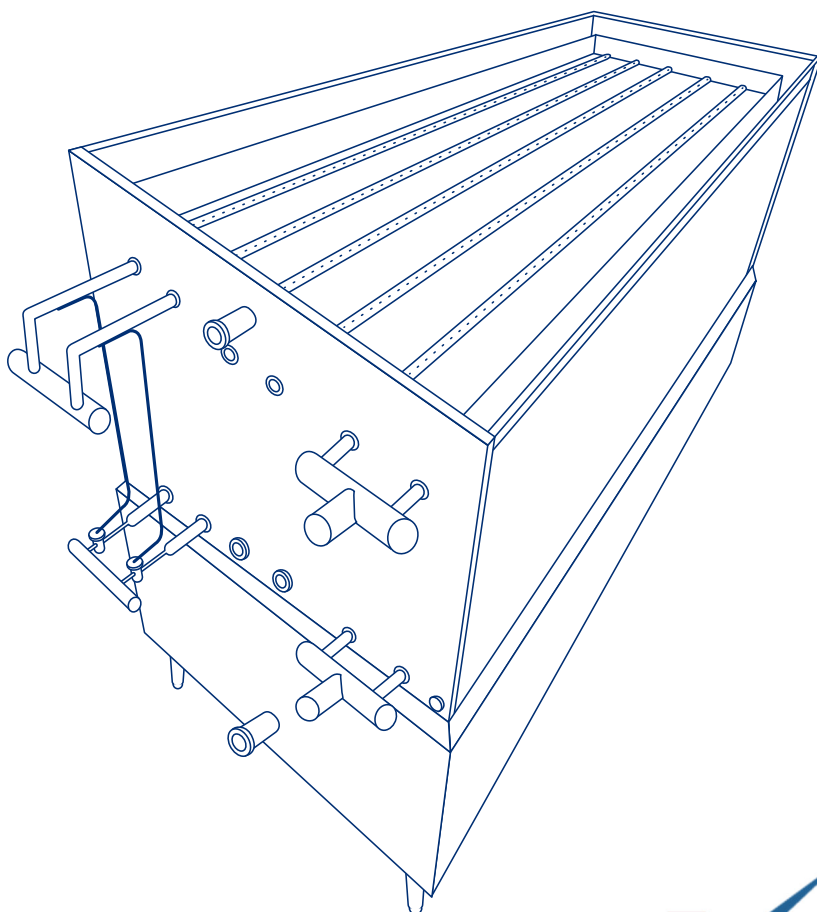
- Use of approved materials for construction
- All product contact surfaces must be visible for inspection
- All product contact surfaces must be smooth and without pits, crevices, or scale
- Product zones should be free of recesses, open seams, and gaps
- Internal corners or angles in the product zone must have a smooth, continuous radius of at least .25"
- The equipment must be capable of draining all the fluid it contains
- Gaskets and O-rings should be made from certified food-grade materials

Mueller falling film chillers are specifically designed to meet these requirements, providing an effective solution for all your chilling needs.

Expertise

Paul Mueller Company has decades of extensive experience in designing, engineering, and manufacturing falling film chillers for refrigeration applications.

Our expertise allows us to provide customized chilling solutions tailored to your specific needs.



Falling Film Chiller Components

Cabinet

Cabinets are designed to meet specific chilling needs. Standard units accommodate four 3 x 3 plates; eight 3 x 5 plates; or 8, 16, 24, or 32 4 x 8 plates.

Construction Features

Standard units are made of Type 304 stainless steel with a 2B finish, and all welds are bead-blasted. Optional materials include 316L stainless steel.

Evaporator

The evaporator chills water to 34°F and other solutions within a few degrees of their freezing points without freezing or damaging the chiller. Multi-size evaporators (3 x 3, 3 x 5, and 4 x 8) are available to meet specific load requirements. Plates are designed for optimal oil return and refrigeration efficiency.

The system is compatible with R-404a, R-448a/R-449a, R-454c, and R-717 refrigerants in flooded, recirculated, or direct-expansion systems. It meets ASHRAE 15 standards, rated at 300 psi at 400°F. ASME code-stamped evaporators are available upon request.

Fill Connection

Chillers feature a threaded fill connection for electronic level controls, located on the water pan inlet.

Overflow Connections

Chillers include a threaded overflow connection for easy piping of excess fluid.

Tank Reservoir

Tank sizes range from 73 to 1,113 gallons. The insulated holding tank (with a minimum of 2-inch insulation) prevents heat loss and condensation. A sloped bottom ensures complete drainage, while adjustable legs allow the chiller to sit level on uneven surfaces, ensuring optimal pan operation and laminar flow for maximum cooling.

Water Distribution Pan

The distribution pan has holes above each vertical evaporate plate to ensure uniform flow of solution on both sides. Hole size and spacing are tailored to flow rate requirements. Pans are available in extra-low, low, and high flow, with flow rates from 1.2 to 6.2 gpm per linear foot of plate..

Options, Accessories, and Other Equipment

Refrigerant Controls

Refrigerant controls for ammonia and other refrigerants, including direct expansion, flooded, and recirculated systems, are available.

Refrigerant Circuit Manifolds

Refrigerant circuit manifolds simplify installation. DX system manifolds come with valves and external equalizers premounted. Flooded and recirculated manifolds are available in copper or stainless steel.

Refrigerant Manifolding

Optional manifolding for all refrigerants is available, including expansion valves for direct expansion systems. Copper or stainless steel are recommended materials.

Temperature Control

Temperature control assembly packages are available to manage temperature, circulating pumps, and makeup water levels.

Pumps

Circulating pumps are available in various flow ranges and materials to meet your specific needs.

Condensing Units

Condensing units with semi-hermetic or scroll compressors are offered in air-cooled, remote air-cooled, or water-cooled models.



Falling Film Chiller Features and Benefits

Standard Option Concept

Cabinets are designed to meet specific chilling needs. The falling film chiller is designed around a standard option concept to improve quotation lead time, delivery time, and reduce costs. By predesigning the product line, we eliminate the need for custom engineering with each order. This approach also ensures customers only pay for what they need, providing the lowest cost and fastest lead times in the industry. Mueller falling film chillers also handle incoming fluid temperatures over 105°F.

Cabinet Sizes

Mueller offers three falling film chiller sizes: 3 x 3, 3 x 5, and 4 x 8. The 3 x 3 chiller comes in a 4-plate cabinet, while the 3 x 5 chiller comes in either a 4- or 8-plate cabinet, and the 4 x 8 chiller is available in a 4-, 8-, 16-, 24-, or 32-plate cabinet. Each chiller is paired with a tank sized to meet its requirements. Mueller also offers tankless chiller cabinets in the following sizes: a 4-plate 3 x 5, 8-plate 3 x 5, 4-plate 4 x 8, 8-plate 4 x 8, 16-plate 4 x 8, or a 24-plate 4 x 8.

Cabinet Top Options

Cabinets are available with either a welded-in top or a hinged door over each distribution pan, providing access to the chiller top based on your needs.

Cabinet Expandability

Expanding a falling film chiller by adding plates (up to the cabinet's capacity) is easy due to its advanced design. Select a cabinet that allows for future expansion, so when the time comes you will only pay for additional plates and distribution pans instead of a new chiller and costly installation.

Evaporator Features and Options

We offer 3 x 3, 3 x 5, and 4 x 8 plate sizes, suitable for DX, recirculated, and flooded refrigerant controls with R-404A, R-448A/R-449A, R-454C, and R-717 refrigerants. The plate design eliminates the need for special refrigerant controls, making DX more affordable and suitable when appropriate. All plates meet ASHRAE 15 standards, rated for 300 psi at 400°F. Optional ASME-rated plates are available.

Evaporator Internal Plate Capacity

Mueller's Temp-Plate® heat transfer surface is the most efficient evaporator available, using the smallest refrigerant charge possible. The 3 x 3 plate has an internal volume of 0.09 cubic feet, the 3 x 5 plate has an internal volume of 0.15 cubic feet, and the 4 x 8 plate has an internal volume of 0.42 cubic feet, which is 8 to 10 times less than our competitors.

Tank Connection Options

Chillers feature multiple tank connection locations. You can select the connection size and location from our standard options listed on the submittal drawing for each cabinet.

Refrigerant Controls

Mueller provides DX and flooded refrigerant controls for all refrigerants. For specific component details, refer to our Falling Film Chiller Operations and Installation Manual.

Water Level Control Option

All Mueller falling film chiller systems come with connections for installing an optional water level control. The system includes the following:

- Dual level probes
- Water valve(s)
- A water level control module

Refrigeration Units

Mueller provides a complete line of condensing units tailored to the falling film chiller's performance requirements.

Condensing units are available in outdoor air-cooled, water-cooled, and remote air-cooled configurations.

These units range from 5 to 80 horsepower. Some sizes may not be available in all configurations.

Control Panel Options

An optional Mueller multi-stage chiller control panel includes the following:

- Temperature control box to cycle up to 10 compressors based on water temperature
- Water inlet temperature sensor
- Three-phase pump motor starters, quantity of two

Quotation Lead Time

For chillers with standard options, quotations are typically available within 24 hours of receiving your request.

Quotes for non-standard options may take longer.

