Product Specifications

The NESLAB Merlin Series recirculating chillers provide a wide range of cooling capacity all in a highly reliable, space-saving package for your critical application needs.

NESLAB Merlin Series Recirculating Chillers

Delivers a continuous supply of cooling capacity up to 5045 watts

Typical applications for the Merlin Series:

- **Lasers**
- **Analytical instrumentation**
- **Printing equipment**
- **Electron microscopes**
- **Semiconductor manufacturing**
- **Medical imaging equipment**
- **Reaction vessels**
- **Condensers**

Feature-Packed Compact Chillers

The NESLAB Merlin Series of recirculating chillers provide precise temperature control in the most demanding cooling applications. Engineered for process-fluid cooling, these feature-packed compact chillers include easy-to-use controls, effortless maintenance, and quiet operation. Plus adjustable high and low temperature safeties, an audible alarm, and temperature stability of up to ±0.1°C.

The environmentally-friendly CFC-free air-cooled refrigeration system provides reliable and powerful cooling. With a variety of pumps to choose from, you can configure a chiller that is ideal for your specific application requirements.

While each Merlin recirculating chiller has many standard features, a variety of options and accessories are available to meet specific application needs.

Backed By a Two-Year Warranty

When purchased new from Thermo Electron Corporation, each Merlin unit is warrantied for 24 months. For you, it means peace of mind. For us, it means we believe in our products.

Thermo Electron Corporation has a well-established reputation in temperature control through its NESLAB and HAAKE product lines. Formerly independent companies, NESLAB and HAAKE have joined forces within Thermo to provide proven temperature control technology along with global service and support. With over 75 years of extensive industry experience, Thermo professionals worldwide continue to develop and support the solutions that help you analyze, detect, measure, and control your application with increasingly advanced precision.

NESLAB Merlin Series Specifications

	M 25	M 33	M 75	M 100	M 150
Cooling capacity @ 20°C					
60 Hz	810 watts	1250 watts	2410 watts	3500 watts	5045 watts
	2765 BTU	4266 BTU	8225 BTU	11946 BTU	17219 BTU
	697 Kcal	1075 Kcal	2073 Kcal	3010 Kcal	4339 Kcal
50 Hz	725 watts	1125 watts	2180 watts	3500 watts	4540 watts
	2474 BTU	3840 BTU	7440 BTU	11946 BTU	15495 BTU
	624 Kcal	968 Kcal	1875 Kcal	3010 Kcal	3905 Kcal
Refrigerant	R134A	R134A	R134A	R404A	R404A
Temperature range					
standard	+5°C to 35°C	+5°C to 35°C	+5°C to 35°C	+5°C to 35°C	+5°C to 35°C
low temperature option	-15°C to 35°C	-15°C to 35°C	-15°C to 35°C	-15°C to 35°C	-15°C to 35°C
Ambient temperature range					
C	13° to 35°	13° to 35°	13° to 35°	13° to 35°	13° to 35°
F	55° to 95°	55° to 95°	55° to 95°	55° to 95°	55° to 95°
Temperature stability	+/- 0.1°C	+/- 0.1°C	+/- 0.15°C	+/- 0.15°C	+/- 0.15°C
Pumps					
MD 30 – Mag Drive*	yes	yes	n/a	n/a	n/a
PD 1 – Positive Displacement	yes	yes	yes	n/a	n/a
PD 2 – Positive Displacement	n/a	yes	yes	yes	yes
CP 55 – Centrifugal Pump	n/a	n/a	n/a	yes**	yes**
Reservoir volume					
gallon	0.5	0.5	0.5	0.5	0.5
liter	1.8	1.8	1.8	1.8	1.8
Unit dimensions					
H x W x D in	23.50 x 12.62 x 20.85	23.50 x 12.62 x 20.875	26.125 x 16.25 x 24	30.375 x 21.25 x 29.25	30.375 x 21.25 x 29.25
H x W x D cm	59.7 x 32.1 x 53.0	59.7 x 32.1 x 53.0	66.4 x 41.3 x 61.0	77.2 x 54.0 x 74.3	77.2 x 54.0 x 74.3
Power requirements					
option 1	115V, 60 Hz, 10 amps	115V, 60 Hz, 13 amps	200-230V, 60 Hz, 9 amps	208-230V, 60 Hz, 13 amps	208-230V, 60 Hz, 15 amps
	100V, 50 Hz, 10 amps	100V, 50 Hz, 13 amps	200V, 50 Hz, 9 amps	200V, 50 Hz, 13 amps	200V, 50 Hz, 15 amps
option 2	230V, 50 Hz, 5 amps	200-230V, 60 Hz, 7 amps	230, 50 Hz, 9 amps	230V, 50 Hz, 13 amps	230V, 50 Hz, 16 amps
		200V, 50 Hz, 7 amps			
option 3	n/a	230, 50 Hz, 7 amps	n/a	400V, 50 Hz, 3 ph 8 amps	400V, 50 Hz, 3 ph 8 amps
Unit weight					
lb	118	120	176	254	254
kg	54	54	80	115	115
Compliance					
60 Hz	UL/cUL, CE	UL/cUL, CE	UL/cUL, CE	UL/cUL, CE	UL/cUL, CE
50 Hz	CE	CE	UL/cUL, CE	CE	CE

Specification listed for standard units circulating water at 20°C fluid temperature and 20°C ambient. Other fluids, fluid temperatures, or ambient temperatures will affect performance. Cooling capacity and amperage ratings based on units with PD 1 pumps (PD 2 with M 100 and M 150). Other pumps will affect performance. Specifications are subject to change.

*Available in 60 Hz configuration only.

**M 100 and M 150 units with CP 55 pump have a height of 36.4", and unit weight of 275 lbs.

Standard Features

Feature	Benefit
Variety of pumps	Meets your specific application needs
Refrigeration system	Provides CFC-free refrigeration system for precise temperature control and optimum stability
Hot gas bypass	Extends chiller life
Reservoir isolation valves	Eliminates reservoir overflow when pumping vertically
Fluid reservoir	Enables you to view the liquid level and fluid condition at a glance
Removable front grille	Allows quick release of front grille for routine cleaning
Integrated fluid pressure and flow adjustment	Meets specific application needs
Easy access reservoir drain	Allows fast and easy access when changing fluids
Pressure gauge	Provides fluid system diagnostics at a glance
Digital temperature controller	Provides intuitive controller with an easy-to-view digital display for simple operation
High/low temperature safeties	Ensures your application maintains critical operating parameters
Compact design	Maximizes valuable floor space
Two-year warranty	Provides you with peace of mind

Options

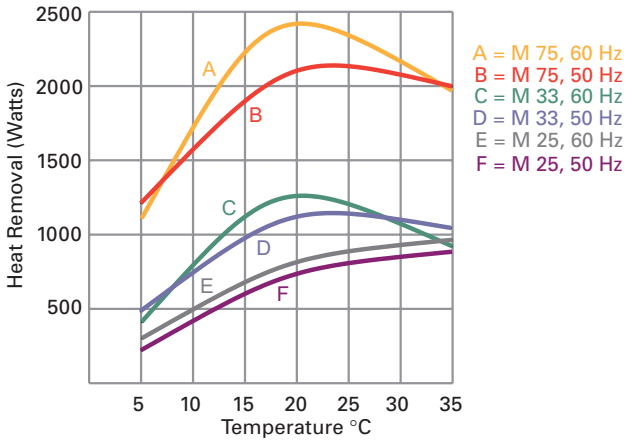
Feature	Benefit
Communications package:	
• RS-232 or RS-485	Allows for remote operation, monitoring, and data logging
• Remote start/stop	Allows the unit to be remotely turned on and off for convenient operation
• Status relay	Allows for remote monitoring
• Remote sensor port	Allows remote temperature control of the application
Low level/low flow safety package	Ensures fluid level and fluid flow safety to ensure continuous operation

Accessories

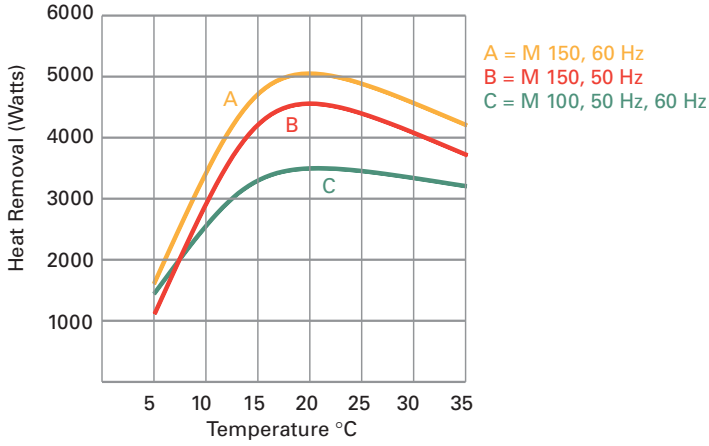
Feature	Benefit
NESLAB NEScom software	Allows you to easily program and automate your temperature control process from a PC system
Plumbing kits	Provides tubing, insulation, and connectors for easy installation
External temperature gauge	Allows you to monitor system operating temperature any point in-line between the chiller and the application
External pressure gauge	Allows you to monitor system pressure any point in-line between the chiller and the application
Air filter kits	Protects your chiller from dusty environments
Deionized water package	Maintains a water resistivity level between 1 and 3 megohm/cm2 for cooling application requiring ultra pure water
Fluid particulate filters	Maintains particulate-free operating fluid. Available with 5, 10, 25 or 40 micron filters
Ethylene glycol	Allows circulation to temperatures down to -20°C in a 50/50 mixture with water

Cooling Capacity

M 25, M 33, M 75

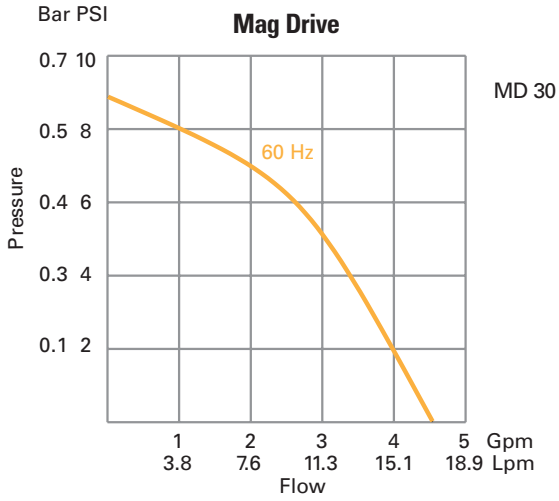


M 100, M 150

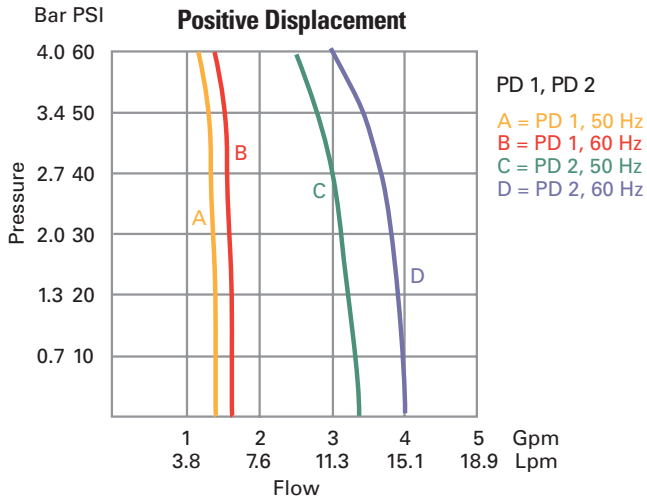


Pumping Capacity

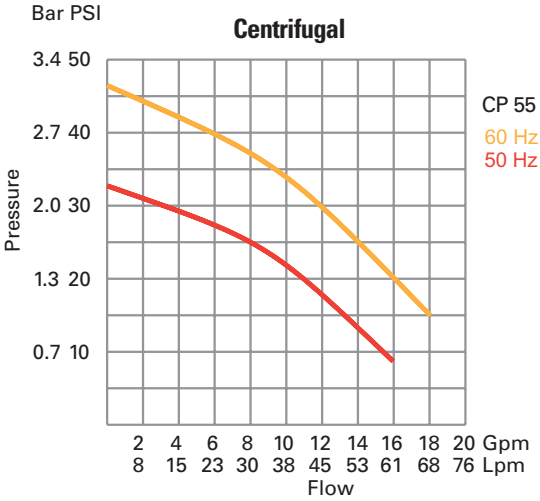
Mag Drive



Positive Displacement



Centrifugal



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