

EMS-FF-C120

Coolant fill cart, 120 L tank

Single-rack and in-row fill and top-up cart with one 25 µm discharge filter per pump

EMS-FF-C120 is the 120 L class of the fill cart ladder, sized for a single rack or in-row unit on fill and top-up duty with a single or dual pump arrangement. Filtration sits on the discharge of the fill pump, one 25 µm protection-rated element per pump, and the cart is controlled by a PLC with a 7-inch touchscreen HMI carrying digital pressure and flow sensors plus overfill protection. The failure it exists to catch is a loop filled from an unfiltered hose, where the particulate that reaches the cold plate was introduced by the people who filled the loop.

ORDERING INFORMATION

Part number	EMS-FF-C120
Tank volume	120 L
Duty	Single rack or in-row unit, fill and top-up
Pump arrangement	Single or dual pump
Discharge filter	One 25 µm element per pump
Connector formats	UQD04 and FD83
Power	90–267 V AC, 50/60 Hz single-phase
Pump head	Not published for this product; reference figure supplied on request

TANK AND HYDRAULIC DUTY

Parameter	Value	Notes
Tank volume	120 L	Smallest class on the fill cart ladder
Duty	Single rack or in-row unit, fill and top-up	The cart is sized by how many loops are filled in one commissioning window, not by one loop
Fluid-volume comparison	A 200 L cart is roughly 22× the 5.7 L secondary circuit of a 100 kW rack CDU	The 120 L class is about 21× that same circuit; both are far larger than a single rack loop
Pump arrangement	Single or dual pump	Dual pump architecture allows concurrent fill and drain on the larger classes
Pump flow	Not published in the retrieved material for this class	Quoted on request; the 200 L class exceeds 60 L/min
Pump head	Not published for this product	Reference only, not our rating: a rack CDU's own internal fill pump runs at about 1.0 L/min and stops at 15 psi (1.0 bar) inlet pressure
Fill points	Single rack or in-row unit	Up to 8 racks, servers or CDUs at once on the 200 L class
Design envelope of the loop it fills	6.9 bar (100 psig) nominal operating pressure and 60 °C (140 °F) fluid temperature	Published envelope of the technology cooling pipework

FILTRATION

Parameter	Value	Notes
Discharge filtration	One 25 µm element per pump, on the discharge of the fill pump	Cart-level filtration on the fill-pump discharge is a design requirement, not an option. The 25 µm figure is a protection rating.
Micron category of the 25 µm element	Protection rating: the operating element on the cart discharge	It is not a strainer rating and it is not the commissioning staging sequence.
Commissioning staging upstream of it	100 µm, then 50 µm, then 25 µm	Commissioning staging is a procedure, not the protection rating of the cart's element.
Cleanliness end point	0 particles at or above 50 µm	Piping cleanliness class CCC = C(C13/D9/E-N00). The 50 µm figure is a cleanliness acceptance limit: it is not a protection rating, a commissioning staging step or an inlet strainer rating.
External filtration rule	External filtration is installed at the discharge of major equipment	Thermal fill stations must also have a serviceable inline filter in the supply line.
Serviceable element	Replaceable element per pump	Wet filters attract and retain contaminants, so replacement is often preferable to cleaning in a construction environment.

CONTROL AND INSTRUMENTATION

Parameter	Value	Notes
Controller	Industrial PLC	Carries the fill and drain logic and the metering read-out.
Operator interface	7-inch touchscreen HMI	Tilttable HMI on the cart.
Pressure and flow sensing	Digital pressure and flow sensors	Readings at the cart rather than at the loop.
Fluid-quality monitoring	Real-time fluid-quality monitoring at the cart	Monitors the fluid the cart delivers.
Overfill protection	Fitted	Level monitoring plus a metering read-out per fill point.
Metering resolution	Fluid delivered per point is recorded	A 100 kW rack CDU secondary holds 5.7 L, so metering resolution matters more than tank size on a multi-rack round.
Air management after fill	Pumps at 25–30 % for a minimum of 30 minutes, then +10 % every 15 minutes up to 75 %	Minimum allowable pump speed is 15 %; do not leave the circuit in a no-flow condition.

MATERIALS, CONNECTORS AND INSTALLATION

Parameter	Value	Notes
Wetted materials	SUS304 stainless steel with EPDM and PTFE seals	Wetted path of the cart and its hoses.
Seal grade	Peroxide-cured EPDM recommended	Sulfur-cured EPDM can introduce sulfate into the heat-transfer fluid; the technology-cooling limit is <10 ppm.
Brass rule	Brass above 15 % zinc requires dezincification verification to ISO 6509 at ≤100 µm depth	Annual zinc analysis by ICP where brass is wetted. The 100 µm figure is a dezincification penetration depth under ISO 6509: it is not a protection rating, a commissioning staging step or an inlet strainer rating.
Connector formats	UQD04 and FD83	Two of the major formats in this equipment class.

Parameter	Value	Notes
Power	90–267 V AC, 50/60 Hz single-phase	Universal input, so one build ships without modification
Mobility	Portable cart on castors	The 100–500 L tank class is a portable cart for commissioning and maintenance
Reference footprint	Published for the 200 L class at 1 120 × 920 × 1 350 mm	This class is quoted on request against the reference build

APPLICATIONS

- Filling a single rack or in-row CDU loop in a commissioning window
- Top-up duty on a live loop where the make-up volume is small
- Fluid exchange rounds where the cart drains as well as fills
- The first coolant filtration stage a new loop meets

INCLUDED IN THE DELIVERED SET

- 120 L tank on a portable cart with castors
- Single or dual pump arrangement with one 25 µm protection-rated element per pump
- PLC with a 7-inch touchscreen HMI
- Digital pressure and flow sensors with overflow protection and per-point metering
- UQD04 and FD83 connector formats

COMPATIBLE WITH

- EMS-CL-PG15 to EMS-CL-PG55 inhibited propylene glycol coolants
- EMS-CL-PGC concentrate for on-site dilution
- EMS-FF-FL75, EMS-FF-FL340 and EMS-FF-FL1300 flush skids for the flush that precedes the fill
- EMS-FF-FS20, EMS-FF-FS60 and EMS-FF-FS150 filtration skids for the permanent stage that follows it

SCOPE

- The cart fills and drains a loop; it does not distribute coolant to a rack. No coolant distribution units and no cold plates

FILL CART LADDER BY VOLUME

Parameter	Value	Notes
EMS-FF-C120	120 L tank	Single rack or in-row unit, top-up duty; single or dual pump
EMS-FF-C200	200 L tank	Up to 8 racks, servers or CDUs at once; dual pump, over 60 L/min
EMS-FF-C500	500 L tank	Row and room-scale commissioning, partial-fill and top-up rounds; dual pump, concurrent fill and drain

NOTES

- Pump head is not published for this product. The comparable reference is a rack CDU fill pump cutting out at 1.0 bar (15 psi) inlet pressure at about 1.0 L/min, and that figure is a reference, not a rating of this cart.
- Pump flow for this class is not published in the retrieved material and is quoted on request rather than estimated.
- The 25 µm element is a protection rating: the operating element on the fill-pump discharge. The 100 → 50 → 25 µm sequence is commissioning staging and is a separate category.
- Wetted path is SUS304 stainless steel with EPDM and PTFE seals; peroxide-cured EPDM is recommended over sulfur-cured EPDM against a technology-cooling sulfate limit of <10 ppm.

- Certification names are published on the badge cards; approval documents are shown on request.
- Scope: no coolant distribution units and no cold plates.

Full specification sheet and current pricing

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Typical lead time confirmed on order acknowledgement.

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