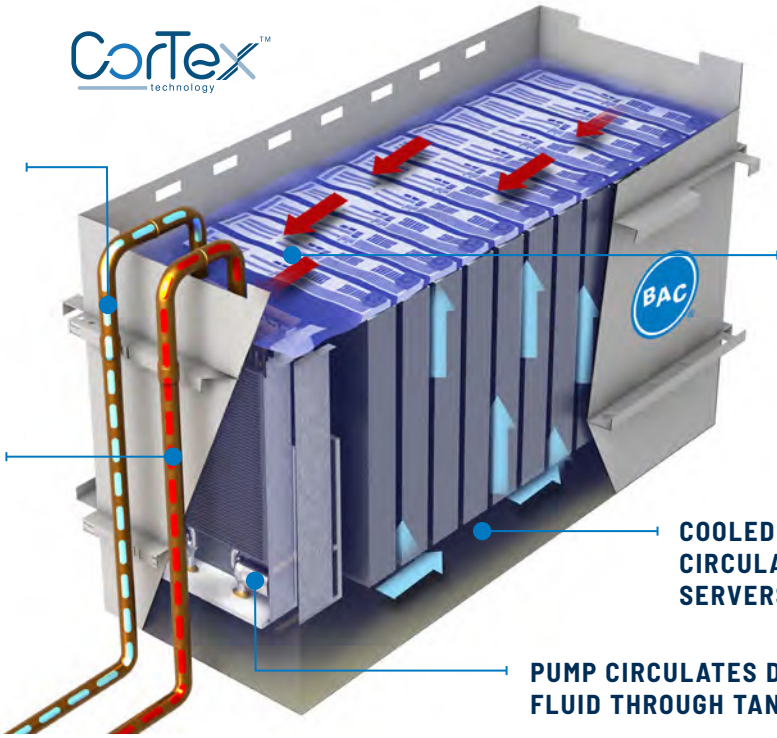
Immersion Cooling Tank



COLD WATER ENTERS HEAT EXCHANGER

WARM WATER EXITS HEAT EXCHANGER

DIELECTRIC COOLING FLUID CARRIES HEAT FROM SERVERS TO BE COOLED BY HEAT EXCHANGER

COOLED DIELECTRIC FLUID CIRCULATES THROUGH SERVERS FOR COOLING

PUMP CIRCULATES DIELECTRIC FLUID THROUGH TANK

ENGINEERING DATA

Tank capacity	26 RU and 30 kW*
Partial PUE (pPUE)	<1.05 (at 30 kW)
Dimensions	59.8 in (L) x 25.9 in (W) x 47.2 in (H), 1520 (L) x 659 (W) x 1,200 (H) mm
Dielectric fluid per tank	~198 gal | ~750 L
System weight	Tank: ~275 lb | ~125 kg, Tank, fluid, heat exchangers: ~1,725 lb | ~ 782 kg
Server width	19.0 in | 483 mm
Server length	33.5 in | 850 mm
PDU dimensions	Supports PDUs up to 7.5 in (190 mm) wide and 55.1 in (1,400 mm) long

*30 kW with 0.24 gal/s (0.9 L/s) cooled water loop at 85°F (29.5° C)

Immersion Cooling Tank Construction Details

1. MATERIAL OPTIONS

The tank shall be made out of high grade galvanized sheet steel, welded at the seams and leak free. Rails and brackets shall be high-grade mild steel to structurally support tank and accessories. All rails and brackets shall be coated in a multi-stage electrostatic thermosetting finishing process that result in an attractive, non-reactive finish that's extremely durable.

2. HEAT TRANSFER MEDIA

Our heat transfer media is the Fluid Control Module (FCM). This is the large heat exchanger that sits at the end of each tank. The FCM provides the heat exchange function between the dielectric cooling fluid in the tank and the cooling water supplied by the external heat rejection system.

3. CIRCULATION PUMPS

The FCM shall have two factory wired submersible fluid pumps. The pumps shall be CE certified. The pumps body is constructed of perlitic gray cast iron and the impeller shall be made of high strength polymer. Each pump is designed for continuous operational flow, with both pumps operating simultaneously during normal operation. In the unlikely event one pump fails, the other can operate the Tank's Dielectric Cooling Fluid loop at slightly reduced capacity until restoration of the failed pump.

4. DIELECTRIC COOLING FLUID

Dielectric cooling fluid (DCF) is generally non-flammable, non-conductive and non-toxid fluid. It acts as an electrical insulator and coolant, directly cooling the immersed IT hardware. DFC comes in various formulas and is selected by the customer based on the IT hardware application.

5. RUBBER MAT

A rubber mat is delivered with every tank. Before installing the tank, this rubber mat needs to be laid down in the desired location to align with the non-FCM end of the tank. It should be placed approximately 2" from the cooling water inlet and outlet piping connections.