## DUG Cool26 Single-phase immersion-cooling

### Efficient, low-maintenance data-centre cooling Built by an operator, for operators



#### DUG COOL TECHNOLOGY OVERVIEW

DUG Cool cuts power usage by up to 51% and significantly reduces maintenance. Hardware is completely immersed in a non-flammable, non-conductive fluid. The fluid maintains a consistent operating temperature while protecting hardware from dust and oxidation. In these conditions hardware fails less and has a much longer life. DUG's patented design places the heat exchanger in the tank, simplifying the system and ensuring the fluid never leaves. The thermal efficiency of the fluid means hardware can be cooled by a warm water loop. With no chillers or fans, power usage is materially reduced, cutting OPEX and CAPEX.

DUG has been delivering immersion-cooling at scale for over a decade. With hundreds of tanks in operation, DUG Cool is elegantly simple, scalable and safe.

#### **EFFICIENCY & EMISSIONS**

- mPUE of 1.03
- Up to 51% less power overall
- Up to 95% less power for cooling
- Up to 85% less embodied CO<sub>2</sub>
- Up to 85% less synthetic refrigerants
- Over 1.5 kW per RU with warm water
- Heat reuse ready

#### HARDWARE & INFRASTRUCTURE

- Cut CAPEX & OPEX no chillers, no fans & less maintenance
- Extend equipment life thermal capacity of fluid keeps the temperature consistent & components happy
- Future proof cool next-gen IT equipment
- Scale with ease modular design makes scaling your data centre simple
- Reduce fire risk fluid provides protection with a high flash point and oxygen-free environment



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# DUG Cool26 Datasheet

| SYSTEM SPECIFICATION                                  |   |       |  |
|---|---|-------|--|
| IT equipment RU per tank                              | 26 *  |       |  |
| Mechanical PUE (mPUE)                                 | 1.03  |       |  |
| Dimensions  | 1500 (L) x 655 (W) x 1200 (H) mm<br>59.0 (L) x 25.8 (W) x 47.2 (H) in       |       |  |
| Dielectric fluid temperature (top of tank)            | 46 ± 3°C   115 ± 5°F  | 4     |  |
| Dielectric fluid per tank                             | ~750 L   198 gal  |       |  |
| System weight   | Tank: ~120 kg   ~265 lb<br>Tank, fluid, heat exchangers: ~750kg   ~1,650 lb |       |  |
| Server width  | 483 mm   19.0 in *  |       |  |
| Server length   | 850 mm   33.5 in *  |       |  |
| COOLING WATER REQUIREMENTS                            |   |       |  |
| Water connection (per tank)                           | 32 mm (1.25 in) BSP male flow, with return at ~850 mm (33.5 in) AFFL        |       |  |
| Water temperature - entering                          | 29.5°C   85.0°F   |       |  |
| Water temperature - delta T                           | 4 to 6°C   7 to 11°F  |       |  |
| Water flow rate (per tank)                            | ~0.9 L/s   0.24 gal/s   |       |  |
| Heat exchanger pressure drop                          | 32 kPa   4.6 psi  |       |  |
| Maximum operating pressure                            | 1000 kPA   145 psi  |       |  |
| ELECTRICAL REQUIREMENTS (PER                          | TANK)   | mPIJE |  |
| Dielectric fluid circulation pumps                    |   | 1.8   |  |
| • Number of pumps                                     | • Two (2) per tank  |       |  |
| Electrical supply                                     | • 1 phase 240 V, 50/60 Hz   | 1.6   |  |
| • Max current   | • 1.1 A per pump  |       |  |
| • Connection  | • 10 A IEC C13 plug   | 1.4   |  |
| Grounding connection                                  | Bare terminal on bottom rail  | 1.2   |  |
| * The DUC Cool tenk design can be sustanting the most | vour opecific peede list's talk   |       |  |

The DUG Cool tank design can be customised to meet your specific needs. Let's talk.

(1) Based on 12-month rolling average measurement values

[2] https://www.missioncriticalmagazine.com/ext/resources/whitepapers/2020/2020AnnualSurvey\_EndUser\_v4s.pdf





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