

quickCONNECTfixture Liquid Cooling high amp

- ⇒ operation at high current densities up to 5 A/cm²
- ⇒ cooling layers in direct contact with flow fields
- ⇒ cold start & deep freeze
- ⇒ quality assurance
- ⇒ reproducibility
- ⇒ increased productivity



technical data qCf LC high amp

item no. 12275	qCf FC 12/100 HA
weight	6 kg
active area	12 cm ²
piston diameter (actuator)	Ø 100 mm; anti-twist, low friction
liquid cooling	cooling/ heating liquids (external thermostat)
max. operating temp.	-20 to 150 °C
ΔT cooling liquid and cathode gas outlet	< 1 K @ 5 A/cm ²
max. force (@ 4 bar/58 psi air supply)	3 kN / 300 kg / 675 lbf / 2.5 N/mm ²
air supply device	Ø 4 mm; electrical 5/2-way valve
media supply (fuel/air)	Ø 6 mm or 1/4" Swagelok or compatible fitting
connecting, heating elements	stainless steel / lapped, gold-plated, Viton sealants
delivery includes	qCf, load plugs (Ø 6 mm / M6; MultiContact), manual

The latest version of our quickCONNECT test cells comes with significant improvements in temperature management. The **qCf LC high amp** was designed for the operation at high current densities where heat generation becomes a critical issue. In cooperation with Fraunhofer ISE, the liquid cooling layers were shifted closer to the flow fields and ended in direct contact to the graphite flow field plates to extract generated heat more efficiently from the cell fixture. A temperature difference between cathode gas outlet and cooling liquid of less than 1 K is realised at 5 A/cm² and 80 °C. All advantages of the quickCONNECT principle like adjustable contact pressure on the active area, independence of thickness of specimens due to a self adjusting monopolar piston and the toolless assembly were retained to assure easy handling and highest reproducibility of results.

- ⇒ maximum power density by determination of optimum contact pressure on active area
- ⇒ continuously adjustable contact pressure assures full reproducibility of test conditions
- ⇒ independence of thickness of internal fuel cell components by self adjusting piston and special sealing concept
- ⇒ quick and easy clamping/assembly of cell fixture without tools and precise exchange of cell internal components
- ⇒ designed for strong demands in the area of quality assurance and lab environments
- ⇒ no hose coupling and electrical wiring for replacement of cell fixture required
- ⇒ time saving assembly due to quick release and automatic plug connections

cell & cooling concept:

