

Lightraulics® Composite Hydraulics

Choose between Cylinder Barrels
in Steel or CFRP Composite

Cylinder Barrel Specification

Bore	50 mm
Stroke	500 mm
Pressure	210 bar

Steel Barrel

Finish - black primer
(standard) or to
customer specification

Density	7.85 g/cm ³
Weight	3.7 kg



For customized specifications or
references, please contact:

**Parker Hannifin Manufacturing
Germany GmbH & Co. KG**

Composite Technologies Europe
CTE

Carl-Zeiss-Str. 38

28816 Stuhr

+ 49 (0)421 56 98-200

lightraulics@parker.com

www.parker.com

CFRP Composite Barrel

Finish - abrasion
resistant aramid fibre
(optional)

Finish - clear coat or
painted to customer
specification. Cosmetic
finish on request.

Finish - pure carbon
(standard)

Density	1.6 g/cm ³
Weight	0.7 kg

**Weight
saving** **81%**



Composite Materials – Advantages

- High strength-to-weight ratio
- High stiffness-to-weight ratio
- Customizable material properties
- Superior fatigue life and manufacturability vs. lightweight alloys (e.g. titanium, aluminium, magnesium)
- Corrosion resistance
- Low thermal expansion
- Superior damping performance
- Non-magnetic
- Good conductivity (carbon fibre)

Composite Materials – Value Proposition

Weight savings of up to **65%**

- minimized axle load (mobile hydraulics)
- minimized stabilizer envelope (e.g. cranes, concrete pumps, material handler)
- maximized horizontal reach (e.g. cranes, concrete pumps, material handler)
- implementation of extra features possible where total weight is limited
- Lighter tools, portable by manpower without additional lifting equipment (e.g. heavy lift cylinders, rescue tools)

Energy savings due to light weight

- cost saving due to lower fuel/ electricity consumption

Superior acceleration due to light weight

- faster cycle times (assembly machines, robotics)

Corrosion resistance

- time and cost savings on maintenance (e.g. offshore, marine, subsea)

Longer product life

- better amortization of investment

Reduced vibration due to excellent damping properties

- Improved performance wherever vibration is undesirable

High customizability

- ability to design different properties in different directions
- versatile manufacturability
- versatile component packaging

Condition monitoring with fibre optics or conductive wires

- pro-active downtime prevention/reduction

Aesthetics

- cosmetic surface finishes available for e.g. leisure marine applications

Integrated heating can be easily fitted due to good conductivity

Suitable for applications sensitive to magnetic fields

High-end technology



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Toll-free number: 1-800-27 27 537

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