

Quantum OneTM

THE WORLD'S FIRST...

**Advanced Ceramic Based and Sludge Free, Plug & Play
Modular Water Recycling System for Industrial Laundries**



**LIQUID
CARBON**

Industrial Laundries are facing an unprecedented

Water Crisis



Rising Costs

- 20–80% water price hikes across UK, EU, GCC, ROW; Increasing discharge tariffs
- Ramping electricity rates, with water heating process accounting for 60–70% of laundry energy consumption



Operational Instability

- Chronic system downtime as traditional MBR/RO systems need constant maintenance.
- Biology upsets can result in 3–7 day recovery periods

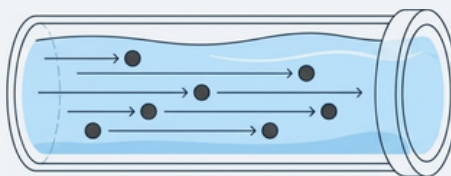


Regulatory Pressure

- Tightening effluent discharge restrictions and compliance requirements by environment agencies

AND THIS is why existing MBR/RO Systems Struggle

Municipal Wastewater
Low, stable chemistry



Industrial Laundry Wastewater
High, variable chemistry



Biological Instability

Biological systems unstable under high surfactant loads

Energy Intensive

24/7 aeration blowers, high-pressure pumps result in higher energy consumption

Sludge Disposal

Recurring sludge disposal leads to financial burden

Poor Scalability

Even modest capacity upgrades require civil work, new tanks, leading to huge CAPEX jumps

Membrane Fouling

Surfactants, oils, fats cause rapid membrane fouling necessitating **replacement every 7–10 years**, creating high recurring CAPEX

Introducing Quantum One™

Advanced ceramic ultrafiltration system engineered for the world's most demanding Industrial Laundries

System Specifications

- Base module capacity: 10 m³/hr
- Scalable to 20, 30, 40 m³/hr with stackable modules
- Recovery rate: 80–90%+
- Turbidity: <0.1 NTU
- Low-footprint, containerised design

Output

- High quality permeate i.e. recycled waste water
- Improved rinse, resulting in better whiteness
- No bacteria
- No oil/fat contamination
- Low-footprint, containerised design

Zero-Hassle

- Plug & Play Skid
- Zero Sludge Generation
- Zero Biological Process
- Zero Odour

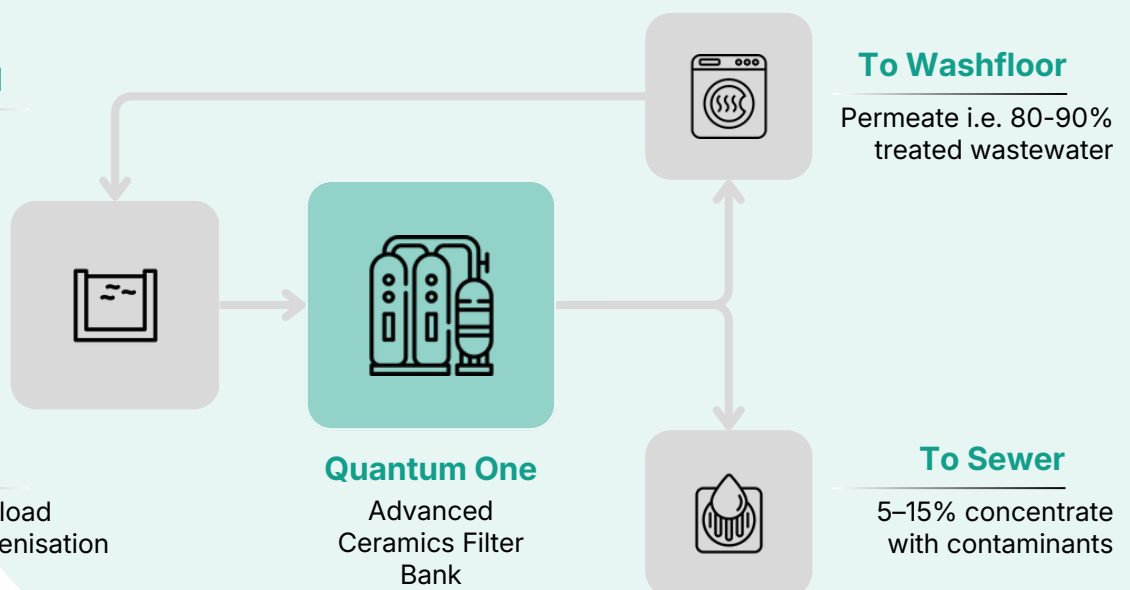
Durability

- 10+ year membrane life
- Chemical Robustness
- Lowest OPEX in the entire category

Inside the Quantum One Recovery Process

Balance Feed

Stable, constant inflow towards ceramic bank



Equalisation

pH, temperature, load chemistry homogenisation

Quantum One
Advanced Ceramics Filter Bank

To Washfloor

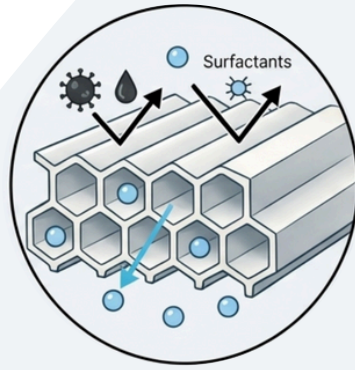
Permeate i.e. 80-90% treated wastewater

To Sewer

5–15% concentrate with contaminants

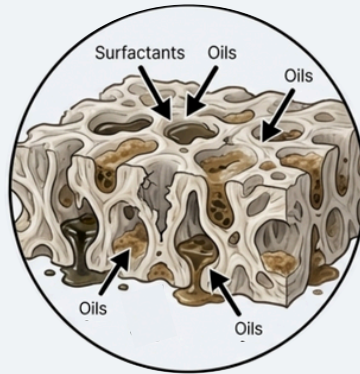
Advanced Ceramics

Outperform
MBR/RO..



Quantum One™ Advanced Ceramics

- No MLSS, no bacteria control
- Withstands chlorine, acids, surfactants without degradation; Resistant to fats, oils
- No aeration blowers
- Less energy expenditure
- 10+ years membrane life
- Easier maintenance

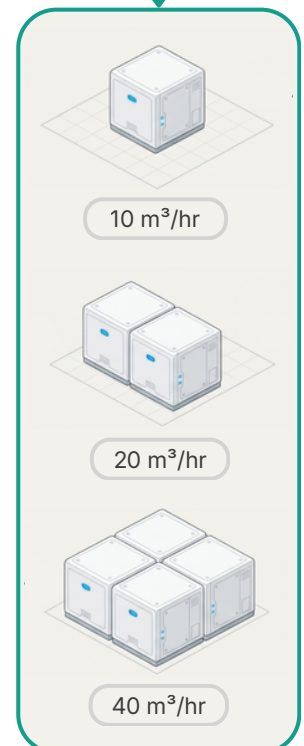


MBR Polymeric Membrane

- Requires constant MLSS, biological monitoring
- High fouling from laundry chemistry (surfactants, oils, disinfectants)
- Surfactant shock loads reduce efficiency (3-7 day downtime)
- High sludge generation leading to higher disposal costs
- High downtime for cleaning and repairs

Scaling up with Quantum One is **Simple**

	MBR/RO Systems	Quantum One
Scaling Capacity	Month-long upgrades & Larger MBR modules required	Instant scaling with 10 m ³ /hr plug-&-play skids
Operational Disruption	Requires shutdowns and reconstruction	Scaling is plug-and-play with no downtime
Site Impact	Significant space requirement for expansion	Minimal space requirement with no civil work required
Process Simplicity	Scaling adds process complexity	Scaling remains plug-and-play simple
Financial Impact	High CAPEX (modules, civil work) & shutdown costs	Low-CAPEX skids with no downtime expenses

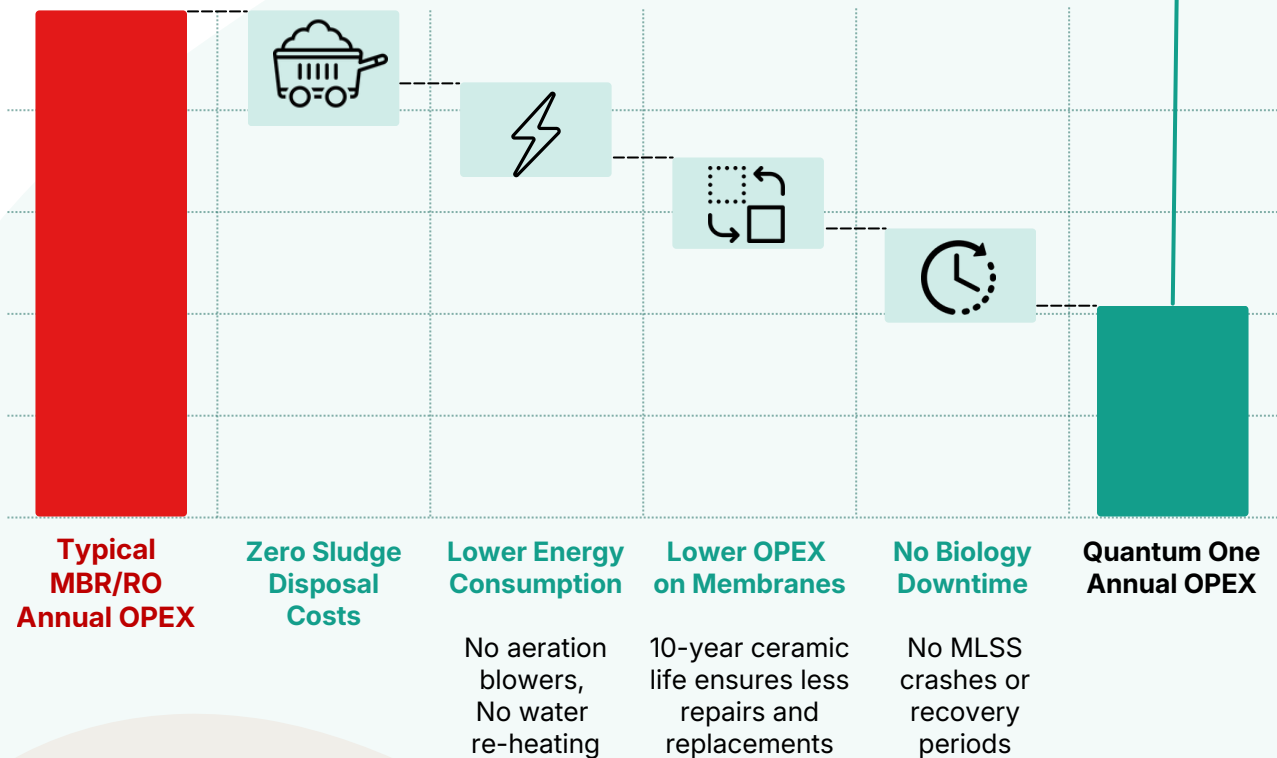


Lowest Cost of Ownership

in the Category

Typical Payback

2-3 Years



Case Study

In a busy industrial laundry running 10 m³/hr for 12 hours each day, operational efficiency was being squeezed by escalating utility costs. Quantum One delivered a step-change in performance, enabling over 90% recovery of wastewater, reducing utility expenditure & driving significant cost savings.

Water Use : 120 m³/day

Water & Discharge Cost : £13–19/m³

Heating Cost of Gas : £2.2/m³

Sludge Disposal Cost : £20,000/year

Total Annual Savings
£280,000 – £530,000

Payback Period
2 – 3 years

Turning Efficiency into Financial Gains

	Industrial Laundry	Industrial Laundry with Quantum One™
Annual Water & Discharge Cost	£405,000 – £595,000 (no water recovery)	£50,000 – £100,000 (80-90% water recovery)
Annual Cost of Heating Water	£70,000 (no heat retention)	£7,000 – £14,000 (minimal heat loss)
Annual Sludge Disposal Cost	£20,000 (treatment & disposal)	£0 (no sludge produced)
Total Annual Cost	£495,000 – £685,000	£57,000 – £114,000
Total Annual Savings	–	£280,000 – £530,000

Built for the world's most demanding Laundries

Become the Benchmark in Sustainable Water Management



Reduce freshwater intake by 80-90%, thereby easing pressure on municipal resources.



Create a circular water economy and eliminate hazardous sludge generation.



Healthcare

Manages disinfectant-heavy loads while meeting strict hygiene standards.



Hospitality

Meets high volume and quality requirements for guest linen.



Industrial Workwear

Handles heavy soiling & high chemical loads with consistent, reliable reuse.

Carbon Footprint Reduction

Lower energy use, reduced heating demand, and less sludge handling collectively cut CO₂ emissions.

Environmental Benefits

Microplastics removal, zero bacteria discharge & cleaner effluent improve overall environmental quality.

Unlock the Quantum Advantage



Advanced Ceramics

10+ year membrane life; Resistant to surfactants, chemicals, oils; Easy to maintain



Modular Scaling

10 m³/hr plug-and-play skid eases scaling to 20-40 m³/hr; low footprint (container design)



Sludge-free

Zero sludge generation,
Zero disposal costs



20-Year Lifetime

Long-term reliability with predictable ROI



Zero Biology

Eliminates the instability and monitoring of biological systems



Lowest OPEX

Energy, maintenance, consumables all minimized

Ready to Transform your Laundry Operations?

Market-leading industrial laundries across
the UK & Europe are **already using Quantum One.**

Saving Money
Saving Water
Saving the Planet

**Are you ready to
start your journey?**

Let's Talk...

Contact us today



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