



LFX™ Series – Liquid Filtration Excellence Engineered for Results

LFX-CLNG™ – High-Pressure Gas Coalescing Filter Cartridges Technical Overview

Filtracore Asia's **LFX-CLNG™ High-Pressure Gas Coalescing Cartridges** are engineered to deliver high-efficiency removal of aerosols, entrained liquids, and fine particulate in **regasified LNG (gas)** and **high-pressure natural-gas** transfer systems. Used downstream of vaporizers and across compression/metering trains, LFX-CLNG™ helps protect vaporizers, cryogenic heat exchangers, compressors, and downstream pipelines in LNG terminals and industrial gas networks.



A multi-layer **borosilicate microglass** coalescing pack with a **hydrophobic/oleophobic drainage** layer delivers **up to 99.97–99.999 % efficiency at 0.3 μm** (grade-dependent), providing ultra-clean send-out gas while maintaining low clean Δp and long service life. **Large-format 6" (≈ 152 mm) OD \times 40" (≈ 1016 mm)** cartridges maximise effective area and liquid-holding capacity for fewer elements per vessel. **Element limits are defined by differential pressure and temperature** (typical change-out Δp around **1 bar**; element T_{max} commonly ≈ 82 – 93 °C, model-dependent).

Standard elements are supplied in industry-standard large-OD formats for **drop-in adoption** when **length/OD/end-seal** and internal hardware match the

installed housing. **System pressure rating and code compliance** (e.g., ASME VIII/B31.3/B31.8; sour-service per **ISO 15156 / NACE MR0175**) are set by the **vessel and materials specification**, with **elastomer/metal options** available to suit the service.

This robust configuration supports predictable Δp –flow behaviour and extended service life across LNG send-out pipelines, boil-off-gas recovery systems, and industrial gas skids, helping reduce maintenance frequency and protect critical metering and custody-transfer equipment.

Engineered for High-Pressure Gas Duty. Proven in Regas & Pipeline Service.

Technical Specifications

- **Media & construction**

Multi-layer borosilicate microglass coalescing pack with oleophobic/hydrophobic drainage layer; positive O-ring seal. Hardware in metal or polymer by service; 316L stainless-steel options available (caps/cores) for corrosive/sour duty. (Surface treatments are vendor-specific; keep drainage layer generic rather than “PTFE” unless standardised.)

- **Efficiency class (aerosol)**

High-efficiency gas coalescing up to 99.999% at 0.3 μm (DOP) with $\geq 99.7\%$ removal for solids $> 0.3 \mu\text{m}$, depending on element class. State the target aerosol efficiency at 0.3 μm when ordering

- **Element size (industry-standard large-OD)**

Nominal $\varnothing \approx 152 \text{ mm}$ (6") by length 1016 mm (40"); 1524 mm (60") available on selected families. Other large-OD formats exist by OEM. (These are the dominant sizes in midstream/pipeline gas coalescers.)

- **End configuration / sealing**

Supplied as SOE or DOE to match vessel internals (tube-sheets, tie-rods, seat geometry). Specify O-ring size/location and any locator features to suit the installed housing (e.g., PECO Series 75/85 filter-separator; Gemini/PuraSep® gas filter-coalescers). Sanitary 222/226 end styles are not typical for these large-OD gas elements

- **Flow path**

Two-stage coalescing architectures are common (pre-coalesce then drainage); the required direction is element/vessel dependent. Leading designs document staged outside→inside followed by inside→outside within the element family; confirm against your housing. Reverse-flow service is not permitted

- **Clean Δp / sizing reference**

Clean differential pressure depends on element class, gas properties, and vessel internals; use the vendor's grade-specific Δp -flow curves at your operating pressure/temperature/composition. (Avoid fixed “typical” Δp per flow without the exact element curve.)

- **Change-out & element differential limits**

Recommended change-out $\Delta p \approx 1.0 \text{ bar}$ ($\approx 15 \text{ psid}$). Maximum element Δp typically 2.0–3.5 bar (30–50 psid) depending on the element class; do not exceed the lowest rating among element, vessel, and seals

- **Temperature (element)**

Typical maximum element operating temperature $\approx 82 \text{ }^\circ\text{C}$ (non-aqueous service). Some vendors derate when water-wet (e.g., $\approx 60 \text{ }^\circ\text{C}$). Select elastomers accordingly. (These are element limits; cryogenic liquid LNG service is not intended for these cartridges.)

- **System pressure / vessel code**

System pressure rating is set by the ASME-stamped vessel (e.g., gas coalescer housings often in the ~46–99 bar / 665–1440 psig classes). The element sees line pressure but is governed by its Δp and temperature limits

- **Elastomers (O-rings)**

Common options: FKM (Viton®), NBR/HNBR; FFKM available for aggressive service. (Hydrocarbon gas duties often avoid EPDM.) Match to gas composition, temperature, and sour-service requirements (ISO 15156 / NACE MR0175)

- **Chemical compatibility (gas service)**

Suitable for clean, dry to moderately wet natural gas with typical condensates and compressor lubricants. For amine/glycol exposure or sour gas, select the appropriate media class, hardware, and elastomers per site spec; verify compatibility with specific lube oils/additives

- **Cleanliness / identification**
Low-extractables design; each element labelled with series/class, size, end style, elastomer, and lot/traceability code
- **Quality**
Manufactured under ISO 9001 quality systems. Integration is within ASME-rated vessels and piping designed to applicable codes (ASME VIII / B31.3 / B31.8); system-level compliance and materials selection (e.g., ISO 15156) are defined by the vessel/BOM, not by the cartridge alone

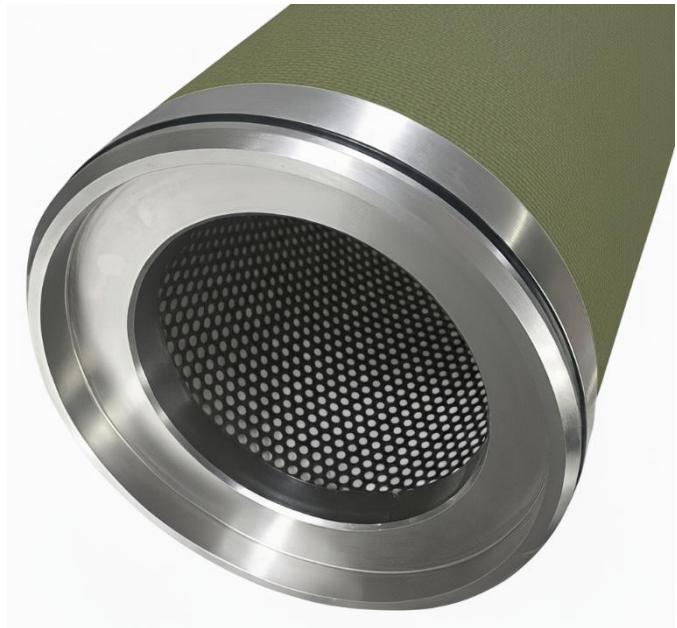
Nominal Dimensions – LFX-CLNG™ (Gas Coalescer Format)

Length (mm) [in]	Outer Diameter (mm) [in]	Form factors / notes
1,016 [40]	≈152 [6]	Standard large-OD gas coalescer cartridge for natural-gas / regasified-LNG service
1,524 [60]	≈152 [6]	Extended length to reduce element count / increase throughput

Other lengths/ODs: available only to match specific OEM vessel internals (confirm with housing drawings).

Nominal Service Life & Maintenance Guidance – LFX-CLNG™

- **Change-out criterion**
Replace elements at a differential pressure of ~1.0 bar (≈ 15 psid) per element (recommended). Do not exceed the maximum element Δp specified for the model (typically 1.7–3.5 bar / 25–50 psid). Follow the lowest applicable limit among element, vessel, and seals
- **Cleaning / reuse**
Coalescer cartridges are single-use; no backwash or chemical regeneration is recommended. Replace at the specified Δp or per process criticality
- **Handling**
Before opening the vessel, isolate, depressurise, and purge per site procedures. Observe gas-service precautions used in regas/pipeline applications. (These elements are for gas-phase duty.)



Regulatory Compliance & Validation – LFX-CLNG™

- **Materials of construction**

Multi-layer borosilicate microglass coalescing media with hydrophobic/oleophobic drainage; hardware and endcaps supplied in polymer or stainless steel (e.g., 304/316/316L) by specification; elastomers selected for the service (e.g., NBR/HNBR/FKM/FFKM). Material options are defined at order to meet process and environment

- **Pressure vessel and piping codes (system level)**

Elements are installed in ASME-stamped vessels within piping designed to ASME Section VIII / ASME B31.3 / ASME B31.8, as applicable to the facility. System code compliance is determined by the vessel and piping, not by the cartridge alone

- **Industry practice / performance**

Element performance (e.g., 99.999% at 0.3 µm, recommended change-out ~1.0 bar) aligns with leading liquid/gas coalescer families; size and efficiency class are selected to meet the site's gas quality targets

- **Sour-gas service**

For environments containing H₂S, materials selection (metals and elastomers) can be specified to meet ISO 15156 / NACE MR0175 requirements at the system/BOM level



¹ Clean, dry natural gas at 15 °C and 100 bar; single 10" element. Values are typical, for sizing guidance only. Actual ΔP varies with gas composition, density/viscosity, temperature, solids/aerosol loading, and vessel internals. For multi-length elements, ΔP per element scales approximately with 1/length (20" ≈ ΔP/2; 30" ≈ ΔP/3; 40" ≈ ΔP/4). Do not exceed the lowest rating among element, housing, and seals; recommended change-out ≈ 1.0 bar (15 psid) or per process criticality.

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