Pall Corporation

# XpressKleen™ G2
# XpressKleen™ G2 KC

## Surface-modified PTFE filter with ultimate initial cleanliness

## Description

The XpressKleen™ G2 filter advances PTFE membrane filtration to enable semiconductor makers to meet the critical chemical filtration requirements of leading edge device manufacturing processes. The XpressKleen filter provides control of critical size particles as well as maintaining critical fluid purity with a guarantee of less than 3 ppb of total metal ion extractables per single length filter[1]. The XpressKleen filter's surface cleanliness includes removal of organic contamination and surface particles. This make the filter suitable for use from the point of supply (POS) to point of process (POP) to help define a contamination control system that delivers the required fluid purity to the wafer.

This is accomplished by Pall's completely integrated manufacturing capability that extends from the PTFE resin to the finished filter device. Pall's advanced manufacturing process (AMP), incorporates the latest clean room manufacturing and state-of-the-art proprietary cleaning steps with improved statistical process control to ensure reliability and performance.

The XpressKleen G2 filter medium is made using Pall's proprietary Molecular Surface Tailoring (MST) technology. The nondewetting XpressKleen G2 filter is qualified for use in aggressive high temperature cleaning chemistries, including aqueous chemistries such as SC1 and SC2.

- Low extractables <3 ppb total of 13 elements <0.1ppb(Ni), <0.2ppb(Cu)
- >40nm particle rinse up control in UPW
- TOC control
- 100% prewetted shipment with ultrapure water package
- High flow rates
- G2 KC assembly available with downstream venting
- Disposable filter unit with filter cartridge integrally sealed in housing
- Sealed assembly for safer handling and faster changeout
- 100% integrity tested

[1] Total metal concentrations in 13 elements: Li, Na, Mg, Al, K, Ca, Cr, Mn, Fe, Ni, Cu, Zn, Pb. Consult factory for details.

Kleen-Change® (downstream venting)

Cartridge

### Removal Ratings and Operating Conditions

### Kleen-Change® (KC)

| Removal ratings | 12nm | 15nm | | 30nm | 50nm |
|---|---|---|---|---|---|
| Media code | XP12 | XP15 | XP15L | XP30 | XPD |
| Filter area | 2.2m² | 1.9m² | 3m² | 1.9m² | 2.2m² |
| Flow | Flow Inline, L-flow, T-flow | | | | |
| Maximum operating temperature | 180°C / 356°F | | | | |
| Maximum operating pressure | 0.49 MPaG (71 psig) @ 25°C (77°F)<br>0.39 MPaG (56.6 psig) @ 60°C (140°F)<br>0.34 MPaG (49.3 psig) @ 90°C (194°F)<br>0.20 MPaG (29.0 psig) @ 120°C (248°F)<br>0.15 MPaG (21.8 psig) @ 150°C (302°F)<br>0.12 MPaG (17.4 psig) @ 180°C (356°F) | | | | |

### Cartridge

| Removal Ratings | | 12nm | 15nm | | 30nm | 50nm |
|---|---|---|---|---|---|---|
| Media Code | | XP12 | XP15 | XP15L | XP30 | XPD |
| Filter Area | ABFG1 | 2.2m² | 1.9m² | 3m² | 1.9m² | 2.2m² |
| | ABFG2 | 4.4m² | 3.8m² | 6m² | 3.8m² | 4.4m² |
| Maximum Operating Temperature | | 180°C / 356°F | | | | |
| Maximum Operating Pressure | | 0.59 MPaG (85.6 psig) @ 50°C (120°F) | | | | |

## Specifications[2]

### Materials of Construction

| Parts | Material |
|---|---|
| Filter medium | Surface-modified PTFE |
| Media support | PTFE / PFA |
| Core, cage and end caps | PFA |
| Housing | PFA |
| O-ring options[3] | FEP-encapsulated fluoroelastomer |

[2] All fluoropolymer materials are PFOA-free

[3] Consult factory for other options.

## Part Numbers / Ordering Information

### XpressKleen G2 KC Asssemblies

**LDF** [1] [2] **1XP** [3] [4] **E** [5]

**Table 1**

| Code | Downstream vent |
|---|---|
| G | N / A |
| V | Available |

**Table 2**

| Code | Flow |
|---|---|
| T | T-flow |
| N | In-line |
| L | L-flow |

**Table 3**

| Code | Removal rating |
|---|---|
| 12 | 12 nm |
| 15 | 15 nm |
| 15L | 15 nm |
| 30 | 30 nm |
| D | 50 nm |

**Table 4**

| Code | Inlet / Outlet | Vent / Drain | | Type |
|---|---|---|---|---|
| | | Head End | Bowl End | |
| 12 | ¾ in. male | ½ in. male | ½ in. male | T-flow / L-flow |
| 12 | ¾ in. male | ½ in. male | ½ in. female | DV type |
| 12 | ¾ in. male | ⅜ in. male | ⅜ in. male | In-line |
| 124 | ¾ in. male | ¼ in. male | ½ in. male | In-line |
| 128 | ¾ in. male | ½ in. male | ½ in. female | DV type |
| 13 | ¾ in. male | ½ in. female | ½ in. female | T-flow |
| 16 | 1 in. male | ½ in. male | ½ in. male | T-flow |
| 16 | 1 in. male | ½ in. male | ½ in. female | DV type |
| 16 | 1 in. male | ⅜ in. male | ⅜ in. male | In-line |
| 164 | 1 in. male | ¼ in. male | ¼ in. male | In-line |
| 168 | 1 in. male | ½ in. male | ½ in. male | DV type |
| 17 | 1 in. female | ½ in. female | ½ in. female | In-line |

DV: Downstream venting

**Table 5[4]**

| Code | Connections |
|---|---|
| 1 | 20 series Flowell[5] |
| 2 | Super Pillar type[6] |
| 51 | Flare style |
| 6 | FinalLock[7] |
| 71 | Super Pillar 300 P series |
| 72 | Super Pillar 300 P series L type |
| 8 | 60 series Flowell |
| 9 | 11CR series Flowell |

[4] Disposable capsules are not available with every option. (Refer to codes for options.) Contact your local Pall representative for option availability.

[5] Flowell is a trademark of Flowell Corporation.

[6] Super Pillar is a trademark of Nippon Pillar Packing Co., Ltd.

[7] FinalLock is a trademark of Kurabo Industries Ltd.

### XpressKleen G2 KC Asssemblies

**ABFG** [1] **XP** [2] **3EH1**

**Table 1**

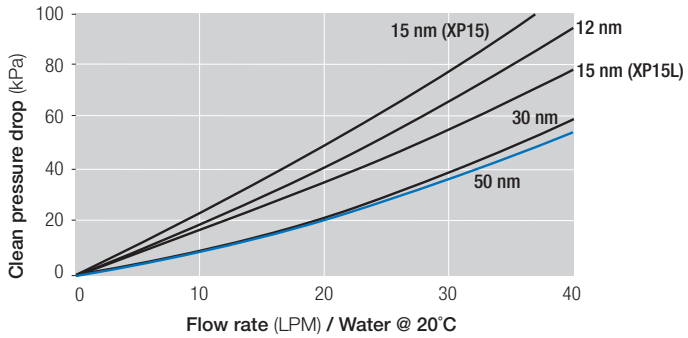
| Code | Length (nominal) inch | mm |
|---|---|---|
| 1 | 10 | 225 |
| 2 | 20 | 468 |

**Table 2**

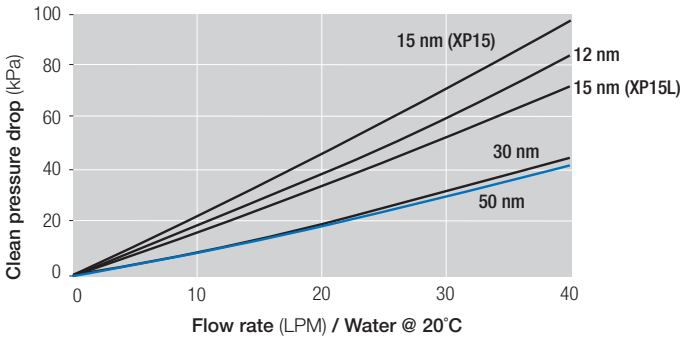
| Code | Removal rating |
|---|---|
| 12 | 12 nm |
| 15 | 15 nm |
| 15L | 15 nm |
| 30 | 30 nm |
| D | 50 nm |

## Pressure Drop vs. Liquid Flow Rate[8]

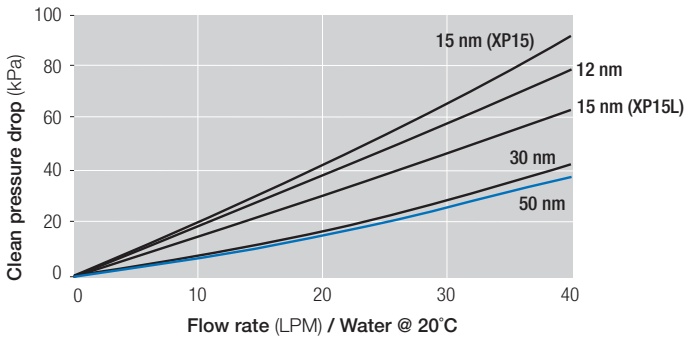
### 3/4 in. KC (L-flow, T-flow)



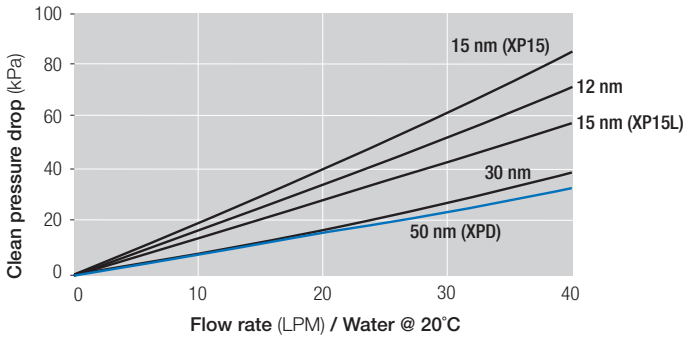

### 3/4 in. KC (In-line)




### 1 in. KC (In-line, T-flow)




### 10 in. cartridge




[8] Typical flow rate. For liquids with a viscosity differing from water, multiply the pressure drop by the viscosity in centipoise.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