Description
The Precision Micro-Orifices® are constructed of brass or stainless steel with orifice sizes from .003" to .005" diameter. The orifices are used to accurately meter very low flow rates of gases or liquids. Optional stainless steel screens are available to protect the tiny orifices from minute contamination particles.

Applications
- Precision metering of very low flow rates – gases or liquids
- Standard for flow or leak rates
- Accurate timing in pneumatic or hydraulic circuits
- Flow limiting

Features
- High temperature capability (Type BLP, IB LP, K4LP, IALP)
- High pressure capability (Type BLP, K4LP, IB LP, IALP)
- Bi-directional flow
- High accuracy
- NIST traceable
- Optional in-line screens available (except Type IBLP, IALP)
- Orifice calibration available

Kits
See page 30 for kit selection.

AIR FLOW — SCCM

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Above data applies to Types BLP, MLP, QXL, K4LP, IBLP, K4LP, IBLP and Y2LPSS.

TEST PROCEDURE

CONVERSION FACTORS
SCFH = .00212 X SCCM
SLPM = .001 X SCCM

STANDARD CONDITIONS
68°F (20°C)
14.7 psi

UNITS
SCFH = Standard cu. ft. per hr.
SLPM = Standard liters per min.

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e-mail ca@okcc.com • website www.okcc.com
General Specifications

Maximum Operating Pressure –
- Type BLP (Brass) 2000 psig
- Type BLP (SS) 4000 psig
- Types MLP, QXLP 100 psig
- Type IBLP (SS) 4000 psig
- Type K4LP (SS) 4000 psig
- Type IALP (Brass) 2000 psig
- Type IALP (SS) 4000 psig
- Type Y2LPSS 200 psig

Materials of Construction –
- Type BLP - 303 SS or Brass
- Type MLP - Brass/Viton gasket
- Type QXLP - 303 SS or Brass/Viton gasket
- Type IBLP - 303 SS
- Type K4LP - 316 SS
- Type IALP - 303 SS or Brass
- Type Y2LPSS - 303 SS or Brass with Viton gaskets

Accuracy

Standard Precision Micro-Orifices® are produced with very accurate characteristics and are production tested at an air supply pressure of 25 psig. The chart on page 25 lists the nominal flow at 25 psig and the accuracy of the measured flow for each orifice size.

Calibration

Measured air flow data is optionally available. Twenty flow data points, over the specified supply pressure range, are measured with NIST traceable instruments.

Flow Direction – Suitable for flow in either direction. Data in flow table is measured for the direction shown in construction drawings.

Flow – See chart on page 25 for air flow.

Flow Accuracy – See chart on page 25.

Orifice Diameter – .0003” to .0050” (eleven standard sizes). Consult factory for special sizes.

Cv Range – .00002 to .000545

Fluid Media – Air, Water, Gases and Liquids compatible with materials of construction. Fluids must be free of solid particles, .03 microns or larger.

Custom Orifice Sizes

Custom orifice sizes, .0003” diameter and larger, can be produced to exacting air pressure and flow specifications. Using electronic pressure and flow measuring equipment that is NIST traceable, the custom Micro-Orifices® are produced to customer specifications. These custom orifices are available in types BLP, MLP, QXLP, IBLP, K4LP, IALP and Y2LPSS. A certificate of compliance to customer specifications is provided for all custom Micro-Orifices®. Contact factory for further details.
### Dimensions

**Type BLP**
- [Image of Type BLP diagram]

**Type IALP**
- [Image of Type IALP diagram]

**Type IBLP**
- [Image of Type IBLP diagram]

**Type K4LP**
- [Image of Type K4LP diagram]

**Type MLP**
- [Image of Type MLP diagram]

**Type QXLP**
- [Image of Type QXLP diagram]

**Type Y2LPSS**
- [Image of Type Y2LPSS diagram]

### Specifications

#### HEX NIPPLE
- **Maximum Operating Pressure**
  - Brass – 2000 psig
  - 303 SS – 4000 psig
- **Orifice Sizes** – .0003" to .005"
- **Orifice Size Numbers** – see chart on page 28

#### INSERT
- **Maximum Operating Pressure**
  - Brass – 2000 psig (body only)
  - 303 SS – 4000 psig (body only)
- **Orifice Sizes** – .0003" to .005"
- **Orifice Size Numbers** – see chart on page 28

#### INSERT
- **Maximum Operating Pressure** – 4000 psig
- **Material** – 303 SS
- **Orifice Sizes** – .0003" to .005"
- **Orifice Size Numbers** – see chart on page 28

#### TUBE
- For compression fittings
- **Maximum Operating Pressure** – 4000 psig
- **Material** – 316 SS
- **Orifice Sizes** – .0003" to .005"
- **Orifice Size Numbers** – see chart on page 28

#### ADAPTER
- **Maximum Operating Pressure** – 100 psig
- **Material** – Brass/Viton gasket
- **Orifice Sizes** – .0003" to .005"
- **Orifice Size Numbers** – see chart on page 28

#### BLEED PLUG
- **Maximum Operating Pressure** – 100 psig
- **Material** – Brass or 303 SS with Viton gaskets
- **Orifice Sizes** – .0003" to .005"
- **Orifice Size Numbers** – see chart on page 28

#### REPLACEABLE ORIFICE
- **Maximum Operating Pressure** – 200 psig
- **Material** – Brass or 303 SS with Viton gaskets
- **Orifice Sizes** – .0003" to .005"
- **Orifice Size Numbers** – see chart on page 28
- Replaceable Orifice – Type IALP

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Optional Screens

Micro-Orifices® must be used with extremely clean fluids (filtered to .03 microns). Otherwise, there is a high probability of clogging the orifice with solid particles. Even with clean fluids, there is also the possibility of introducing contaminants during assembly of the fluid system. To minimize the possibility of clogging small orifices, it is recommended that screens be installed on the upstream and downstream sides of the orifice, to protect against handling contamination.

Fifteen micron screens are normally used with Micro-Orifices®, to minimize contamination that occurs during handling or assembly. Screen material is stainless steel.

Ordering Information

Identify the part number of Micro-Orifices® using the complete detail on the chart at right. See examples also.

For orifice assemblies without optional screens, use the base number only. For assemblies that include screens, add the suffixes shown in the table. Both inlet and outlet screens are rated for 15 microns.

### EXAMPLES

1. **Type BLP**
   - Orifice .0015" diameter
   - Material: Stainless Steel
   - No Options
   - P/N BLP-1E-SS

2. **Type BLP**
   - Orifice .0010" diameter
   - Material: Stainless Steel
   - Inlet Screen
   - Outlet Screen
   - P/N BLP-1(2) 1E-2/BR/DSO-2-2/BR

3. **Type QXLP**
   - Orifice .0007" diameter
   - Material: Stainless Steel
   - Inlet Screen
   - Outlet Screen
   - P/N QXSLP-0G-0G-2-2/BR/DSO-2-2/BR

4. **Type MLP**
   - Orifice .0035" diameter
   - Material: Brass
   - Inlet Screen only
   - P/N MLP-3E-3E-3E-2-2/BR/DSO-2-2/BR

5. **Type QXLP**
   - Orifice .0025" diameter
   - Material: Stainless Steel
   - Inlet Screen only
   - P/N QXLP-2E-2E-2E-2/BR/DSO-2-2/BR

6. **Type IBLP**
   - Orifice .0005" diameter
   - Material: Stainless Steel
   - No Options
   - P/N IBLP-0E-0E-0E-2-2/BR/DSO-2-2/BR

7. **Type IALP**
   - Orifice .002" diameter
   - Material: Stainless Steel
   - Inlet Screen only
   - P/N IALP-2E-2E-2E-2/BR/DSO-2-2/BR

8. **Type K4LP**
   - Orifice .001" diameter
   - Material: 316 SS
   - Inlet Screen
   - Outlet Screen
   - P/N K4LP-1E-1E-1E-2/BR/DSO-2-2/BR

9. **Type Y2LPSS**
   - Orifice .0005" diameter
   - Material: Brass
   - Inlet/Outlet Screen - Standard
   - P/N Y2LPSS-0E-0E-0E-2/BR/DSO-2-2/BR

### SIZE CHART

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<th>Size Number</th>
<th>Orifice Dia. In.</th>
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