The next generation 15 m³/h Scroll Pump, designed for quiet and low vibration operation

AGILENT IDP-15 DRY SCROLL PUMP
CLEAN. QUIET. RELIABLE.

The Measure of Confidence
The state-of-the-art in dry scroll pump technology

The Agilent IDP-15 Scroll Pump is a high performance dry primary vacuum pump, providing rapid pump-down at 15.4 m³/hour (60 Hz). With a single-sided scroll design it offers fast, easy yearly maintenance and low cost of ownership. It is hermetic, with the motor and all bearings completely isolated from the vacuum path and protected from process gases for extended life.

The IDP-15 is exceptionally quiet (<50db) and vibration-free, and is ideal for use in Analytical Instrument and Research applications, and many industrial applications as well.

Applications

The IDP-15 Dry Scroll Pump is the ideal solution for vacuum users in most clean applications, for backing a turbo pump, and for loadlock applications in general. Key target applications include:

### Academic and Research
- Government Research Labs
- University Labs
- High Energy Physics/Beam Lines

### Industrial
- Glovebox
- Crystal Pulling
- LED/Light Manufacturing
- Freeze Drying

### Instrumentation
- Cryogenics
- Electron Microscope
- Helium Recirculation
- Leak Detectors

- Gel Drying
- Sample Preparation
- Mass Spectrometry
- Ion Implant
- Leak Detection
- Surface Science Instruments
Features and Benefits

<table>
<thead>
<tr>
<th>IDP-15 Feature</th>
<th>Advantage</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isolated bearings/motor</td>
<td>No risk of oil or grease back streaming from the pump</td>
<td>Longer Service Interval with condensable vapor apps.</td>
</tr>
<tr>
<td>Single Sided Scroll Design</td>
<td>Easier, quicker basic service</td>
<td></td>
</tr>
<tr>
<td>Solid Tip Seals</td>
<td>Longer Tip Seal Life in most applications</td>
<td>Longer Service Interval with condensable vapor apps.</td>
</tr>
<tr>
<td>Very low noise and vibration</td>
<td>Appropriate for use in laboratory settings</td>
<td>Required in applications such as Mass Spec and Microscopy</td>
</tr>
<tr>
<td>Hermetic Design</td>
<td>Necessary for use in helium and other pure gas apps.</td>
<td>No risk of non-process gases entering the vacuum path</td>
</tr>
<tr>
<td>Optional Integral Isolation Valve</td>
<td>Fast acting isolation valve at relatively low cost</td>
<td>Valve is built into pump module and adds no height to the inlet of the pump</td>
</tr>
<tr>
<td>IEC Power Cord Module</td>
<td>All pumps use standard IEC power cords</td>
<td>Power cord not hard-wired to the motor</td>
</tr>
</tbody>
</table>

Understanding Scroll Pump Technology

IDP Pumps create vacuum using a simple dual scroll mechanism in which one of the nested scrolls orbits about the other, creating moving zones of captured gas. Gas enters the scroll set at the perimeter and is displaced and compressed toward the center hub where it is exhausted.

The uncomplicated dual scroll design offers many benefits including lower noise and vibration levels, simple and infrequent maintenance requirements, plus the elimination of catastrophic failure modes.
**IDP-15 Key Design Elements**

**A state-of-the-art Vacuum Pump**

**Isolated and Hermetic Design**

**Motor and Bearings completely isolated from the vacuum path**
- Motor and Bearings are not exposed to any process gases or water vapor from the application
- Bearings run at atmospheric pressure

**Hermetic Design**
- Appropriate for Rare Gas and Helium recirculation applications
- Gas Ballast normally closed
- Closed system from inlet to exhaust
- Each pump is leak checked

**Optional Integral Isolation Valve**
- The Integral Inlet Isolation Valve is installed inside the module; it adds no height to the pump inlet
- Valve protects against backward migration through the inlet, and sudden venting of customer chamber/instrument
- Spring holds inlet valve normally closed
- Lower pressure in pump causes spring to open
- On power loss, solenoid valve vents pump causing inlet valve to close (20 ms)
- Power is restored, solenoid closes, inside of pump begins evacuating, inlet valve opens (about 10 sec)

**Fixed Speed Motor Supports Global Input Voltages**
- Supports Single Phase Operating Voltages:
  - 100V, 50/60 Hz
  - 115V, 60Hz
  - 220-230V, 50/60Hz
- Simple Switch to change between high and low voltage use.
Designed for Quiet Operation

Low noise
- Agilent consulted with noise experts to aid in designing Pump Module to minimize noise
- Three piece outer cowling acts as a built-in noise enclosure
- IDP-15 is specified at 50 dBA ±2 dBA, much lower than other scroll pumps available

How Quiet is the IDP-15?

<table>
<thead>
<tr>
<th>Noise</th>
<th>dBA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chainsaw; Thunder Clap</td>
<td>120</td>
</tr>
<tr>
<td>Car Horn (1m); Live Rock Music</td>
<td>110</td>
</tr>
<tr>
<td>Lawn Mower; Airplane Take off (1km)</td>
<td>100</td>
</tr>
<tr>
<td>Motorcycle (8m away)</td>
<td>90</td>
</tr>
<tr>
<td>Freight Train (25m); Food Blender</td>
<td>80</td>
</tr>
<tr>
<td>Cars on Freeway; Vacuum Cleaner</td>
<td>70</td>
</tr>
<tr>
<td>Air Conditioner (30m); Office Noise</td>
<td>60</td>
</tr>
<tr>
<td>Best competing scroll pump</td>
<td>52</td>
</tr>
<tr>
<td>Conversation at Home; IDP-15</td>
<td>50</td>
</tr>
<tr>
<td>Library</td>
<td>40</td>
</tr>
</tbody>
</table>

Every additional 10 dBA is a doubling of noise

Low Vibration

The IDP-15 is equipped with integral Vibration Isolation feet, which:
- Decouple vibration from motor and scrolls from the mounting brackets
- Dampen vibration of the pump module

Single Sided Scroll Design

- Only Fixed Scroll needs to be removed to change tip seals
- Very easy basic service, 15 minutes using two tools
- Simple design still achieves a low ultimate pressure of 10 mTorr

Design for Service

IDP-15 Tip Seal Replacement: 15 minutes
# Agilent IDP-15 Dry Scroll Pump

Clean. Quiet. Reliable.

## Technical Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Peak pumping speed:</strong></td>
<td>60 Hz: 256 L/m, 15.4 m³/hr</td>
</tr>
<tr>
<td></td>
<td>50 Hz: 214 L/m, 12.8 m³/hr</td>
</tr>
<tr>
<td><strong>Media:</strong></td>
<td>Not suitable for use with corrosive, explosive or particulate-forming gases</td>
</tr>
<tr>
<td><strong>Ultimate pressure:</strong></td>
<td>10 x 10⁻³ Torr (13.3 x 10⁻³ mbar)</td>
</tr>
<tr>
<td><strong>Maximum inlet pressure:</strong></td>
<td>1.0 atmosphere (0 psig)</td>
</tr>
<tr>
<td><strong>Maximum outlet pressure:</strong></td>
<td>6.5 psig</td>
</tr>
<tr>
<td><strong>Inlet connection:</strong></td>
<td>NW25</td>
</tr>
<tr>
<td><strong>Exhaust connection:</strong></td>
<td>NW16</td>
</tr>
<tr>
<td><strong>Gas ballast:</strong></td>
<td>1/4&quot; NPTF (two positions)</td>
</tr>
<tr>
<td><strong>Water vapor handling per Pneurop 6602:</strong></td>
<td>Gas Ballast Position 1: 20.7 g/hr</td>
</tr>
<tr>
<td></td>
<td>Gas Ballast Position 2: 235 g/hr</td>
</tr>
<tr>
<td><strong>Ambient operating temp.:</strong></td>
<td>5 °C to 45 °C (41 °F to 113 °F)</td>
</tr>
<tr>
<td><strong>Storage temperature:</strong></td>
<td>-20 °C to 60 °C (-4 °F to 140 °F)</td>
</tr>
<tr>
<td><strong>Motor rating:</strong></td>
<td>0.75 HP (560 W)</td>
</tr>
<tr>
<td><strong>Operating voltages:</strong></td>
<td>1Ø / 100 VAC, 50/60 Hz</td>
</tr>
<tr>
<td></td>
<td>1Ø / 115 VAC, 60 Hz</td>
</tr>
<tr>
<td></td>
<td>1Ø / 220-230 VAC, 50/60 Hz</td>
</tr>
<tr>
<td><strong>Motor thermal protection:</strong></td>
<td>Automatic thermal protection</td>
</tr>
<tr>
<td><strong>Operating speed:</strong></td>
<td>60 Hz: 1725 RPM, 50 Hz: 1450 RPM</td>
</tr>
<tr>
<td><strong>Cooling system:</strong></td>
<td>Air-cooled</td>
</tr>
<tr>
<td><strong>Pump weight:</strong></td>
<td>34 kg (75 lbs)</td>
</tr>
<tr>
<td><strong>Shipping weight:</strong></td>
<td>45 kg (100 lbs)</td>
</tr>
<tr>
<td><strong>Dimensions:</strong></td>
<td>364mm (14.3&quot;) h x 333mm (13.1&quot;) w x 485mm (19.1&quot;) l</td>
</tr>
<tr>
<td><strong>Leak rate</strong></td>
<td>&lt;1 x 10⁻⁶ sccs helium</td>
</tr>
<tr>
<td><strong>Vibration level at inlet</strong></td>
<td>&lt; 9 mms⁻¹rms</td>
</tr>
<tr>
<td><strong>Noise level</strong></td>
<td>50 dBA ± 2dBA</td>
</tr>
<tr>
<td><strong>Conformance standards</strong></td>
<td>CE, CSA, RoHS</td>
</tr>
</tbody>
</table>

*(with exhaust and gas ballast sealed)*

## Pumping Speed

![Pumping Speed Graph](#)
Ordering Information

Pump Part Numbers
X3815-64000 IDP15 Scroll Pump, Std
X3815-64010 IDP15 Scroll Pump, Std w/inlt vlv

Service Part Numbers
X3815-67000 IDP-15 Tip Seal Replacement Kit

Spares Part Numbers
X3815-67001 Shipping Box Set, IDP-15

Accessories:
SCRRTRPNW25 Inlet Trap, NW25, HEPA
EXSLRSH110 Exhaust Silencer Kit, SH110

Line Cords:
66494220 Europe, 10A/220-230V, 2.5 meter
66494225 Denmark, 10A/220-230V, 2.5 meter
66494235 Switzerland, 10A/230V, 2.5 meter
66494250 UK/Ireland, 13A/230V, 2.5 meter
66494245 India, 10A/220-250V, 2.5 meter
66494230 Isreal, 10A/220-230V, 2.5 meter
66494240 Japan, 12A/100V, 2.3 meter
66485203 North America, 15A/125V, 2.0 meter
66494255 North America, 10A/230V, 2.5 meter

Outline Drawing

Dimensions inches [millimeters]

Intake NW25
Exhaust NW16

4X Ø0.42[11] THRU

Dimensions: inches [millimeters]
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