

qVisc 4320 AX Autosampled Viscometer



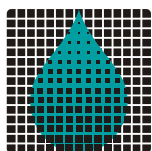
The qVisc 4320 AX viscosity analysis system

Finally, an autosampled kinematic viscometer based on ASTM D445 designed by people in the used oil analysis business for people in the used oil analysis business. Built around our successful manual viscometer with a 6 year track record and extensively field tested in an 800 plus sample per day production used oil analysis laboratory, the qVisc 4320 AX provides the ultimate in high volume viscosity measurements.

Features

- | | |
|------------------------|--|
| Autosampled | Totally automated, unattended viscosity determination at one or two temperatures from one sample. |
| High Throughput | Two baths, two temperatures, and eight tubes delivers up to 47 samples per hour at two temperatures and up to 64 samples per hour at one temperature. The autosampler can hold over 200 samples. Heated sample racks available for even higher throughput, especially on samples over 350 cSt. |
| Wide Range | Covers the range for almost any lubricating fluid viscosity and temperature with no tube selection or splitting samples. Heated sample racks extend the range with the same tubes. |
| Cost Effective | Only 13 cents per sample at two temperatures. That's only \$128 per thousand samples. |

- | | |
|------------------------|--|
| Convenient | Compact floor stand design requires no compressed gases, fume hoods, or special venting requirements. Solvent vapors do not escape. |
| Low Maintenance | Advanced solvent additives and fully automated glass cleaning, work together to keep the instrument soot and build up free. Roll out instrument platform and strategically placed doors and pop off panels allow easy access for maintenance. |
| Easy To Use | Advanced Windows based software controls the instrument and has flexible reporting options including managed daily log files, transfer to LIMS over serial or TCP/IP network links, save and restore sample information files, visually select sample locations, VI computations, and much more. |
| Frugal | Only 80ml of solvent is used for a two temperature measurement and 50ml for a single temperature. |
| Accurate | Patented tube design verifies ASTM D445 method applies by measuring how Newtonian the samples are, and also rejects inaccurate measurements in ways no other instrument can (see our white paper for more information). High speed optical meniscus detection is immune to changes in fluid darkness. |
| Reliable | Advanced computer software automatically runs QC checks, and constantly checks the system for proper operation. At the first sign that a tube is not functioning correctly, or may be returning inaccurate results, the tube is automatically taken offline while functioning tubes remain working. |
| Safe | Smart controllers shut down if unable to maintain steady temperature. Separate over temperature detectors remove power if bath fluid too low or any other over temperature event occurs. At no time is solvent placed under pressure, all cleaning is done by simply drawing up solvent under vacuum. In the unlikely event of a leak, the solvent runs back into its container. |



The
Fluid Life
Corporation

9321 - 48 Street Phone: (780) 462-2400
Edmonton, Alberta T6B 2R4 Fax: (780) 462-2420

This instrument is covered by US Patent 5,756,883, and patents pending.

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Specifications

Viscosity Tubes per Unit:

Temperature #1 (typically 40°C): 4

Temperature #2 (typically 100°C): 4

Sample Throughput:

2 Temperature Operation: up to 47 / hr

1 Temperature Operation: up to 64 / hr

Temperature Range:

Min: Ambient + 10°C

Max: 105°C

Sample Size:

2 Temperature Operation: less than 4.5 ml

1 Temperature Operation: less than 2.5 ml

Usable Viscosity Range:

40°C: 2 - 1000 cSt

100°C: 0.95 - 80 cSt

(Preheater recommended above 350 cSt at 40°C, 40 cSt at 100°C)

Repeatability*:

less than 0.9% 19 times out of 20

Reproducibility*:

less than 1.35% 19 times out of 20

Solvents Recommended:

N-Heptane, Toluene

Solvent Usage:

2 Temperature Operation: approx. 80 ml per sample

1 Temperature Operation: approx. 50 ml per sample

Cleaning Cycle:

After Each Sample: Software controlled automatic

Periodic Glass Cleaning: Automatic, can be scheduled

Viscosity Bath Fluid:

Type: Silicone SIL50

Quantity: 10 liters per bath

Power Requirement:

Voltage/Freq: 120@60Hz or 240@50-60Hz

Max Draw: 1800 Watts

Overall Dimensions, approximate:

38" x 30" x 74"

Width, Depth, Height

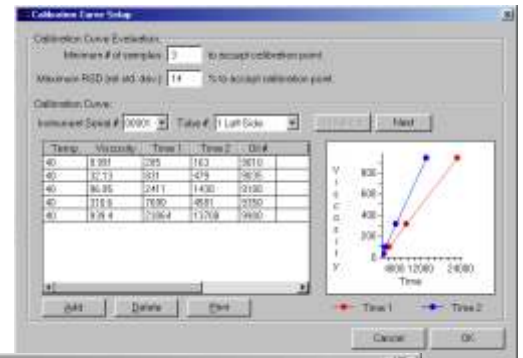
(96.5 x 76 x 188 cm)

Shipping Weight, approximate:

198 lbs (90kg)



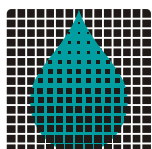
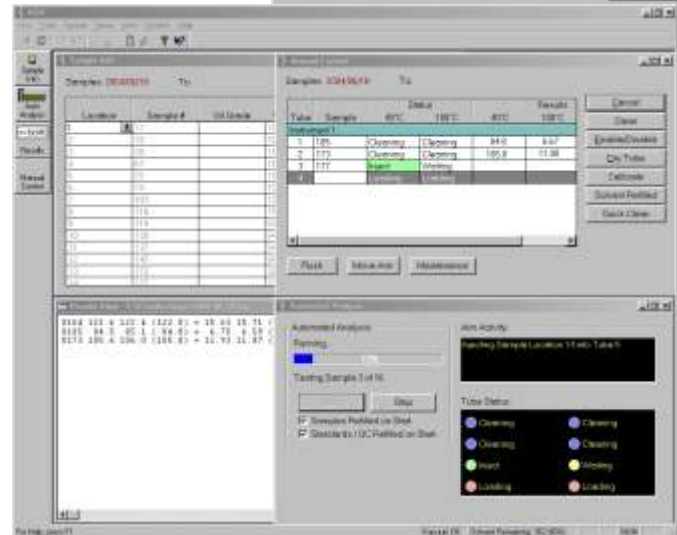
200+ Sample Capacity Autosampler



*As defined in ASTM D445



Innovative patented capillary tube design



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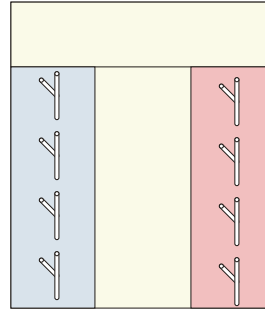
Standard Configurations¹

Instrument

Dual Temperature

- Bath 1 set at Low Temperature
- Bath 2 set at High Temperature
- 4 Low Temperature High Throughput Tubes
- 4 High Temperature High Throughput Tubes

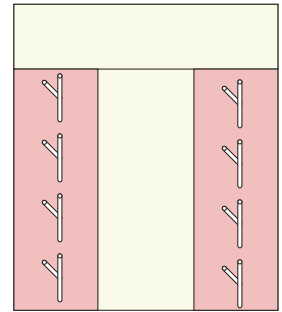
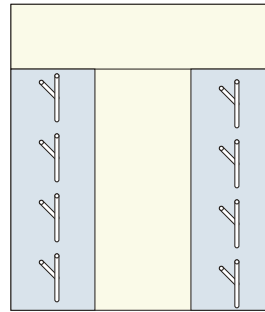
Samples are automatically measured at both temperatures, VI Index is computed.



Single Temperature

- Bath 1 and 2 set at high or low Temperature
- 8 High or Low Temperature High Throughput Tubes

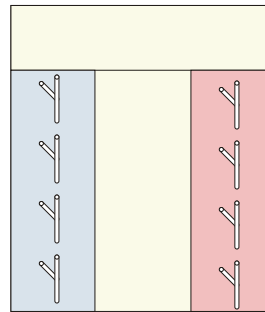
Samples are automatically measured at one temperature, VI Index is not computed.
Up to 64 Samples per hour.



Split Temperature

- Bath 1 set at low Temperature
- Bath 2 set at high Temperature
- 4 Low Temperature High Throughput Tubes
- 4 High Temperature High Throughput Tubes

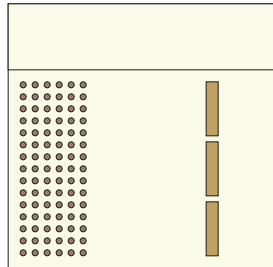
Samples are assigned to one temperature, VI Index is not computed.
Up to 64 Samples per hour.



Autosampler

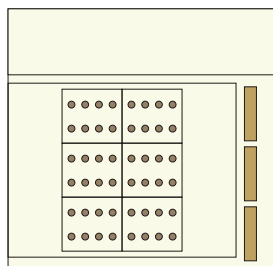
Room Temp

- Room Temp 200+ Capacity Autosampler
- 6, 16 position sample racks
- 3 Calibration, QC, Cleaning Solution Containers



Preheated

- 48 Position Capacity Preheater
- 3 Calibration, QC, Cleaning Solution Containers



¹ Additional instrument and tube configurations are possible. Please contact your sales representative for more information.

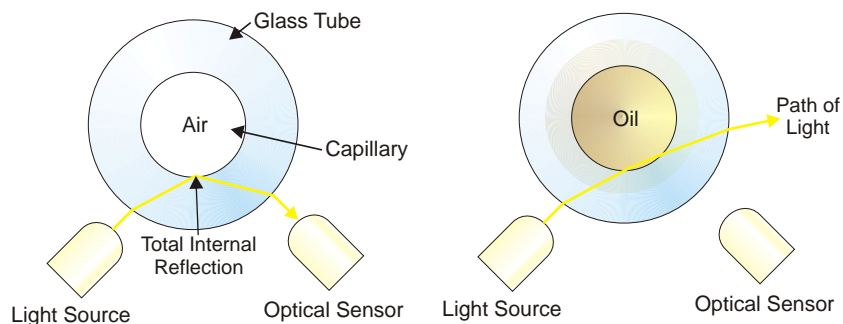
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Optical Detectors

Our high speed optical meniscus detectors measure the change in refraction index of the inside of the capillary tube to detect the flow of oil. This way they are totally immune to how dark the fluid being measured is. Further, as these sensors are located around the tube they are not effected by the harsh chemicals used to clean the glass and are replaceable separately from the tube itself, lowering replacement costs in the unlikely event of a failure, or a broken or clogged tube.

As shown below, when the oil crosses the focus point of the optical sensor, the refractive index of the capillary tube changes from that of air to that of the fluid and the light sent from the transmitter no longer reaches the sensor. This combined with computer controlled circuitry automatically adjusts the level of light used for each measurement to ensure optimal meniscus detection.

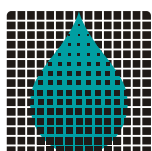


Instrument platform rolls out for maintenance.

Options & Accessories



- Additional Room Temperature Sample Racks (pkg of 6)
- Preheated Sample Rack
- Additional Calibration, QC, Cleaning Fluid Container Rack
- Calibration, QC, Cleaning Fluid Containers (pkg of 10)
- High Temperature High Throughput Tube
- Low Temperature High Throughput Tube
- Replacement Probe Tip
- Replacement Pump Syringe
- Replacement Pump Syringe Seal
- Replacement Tube Plumbing
- Replacement Inject Zero Dead Space Valve



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