

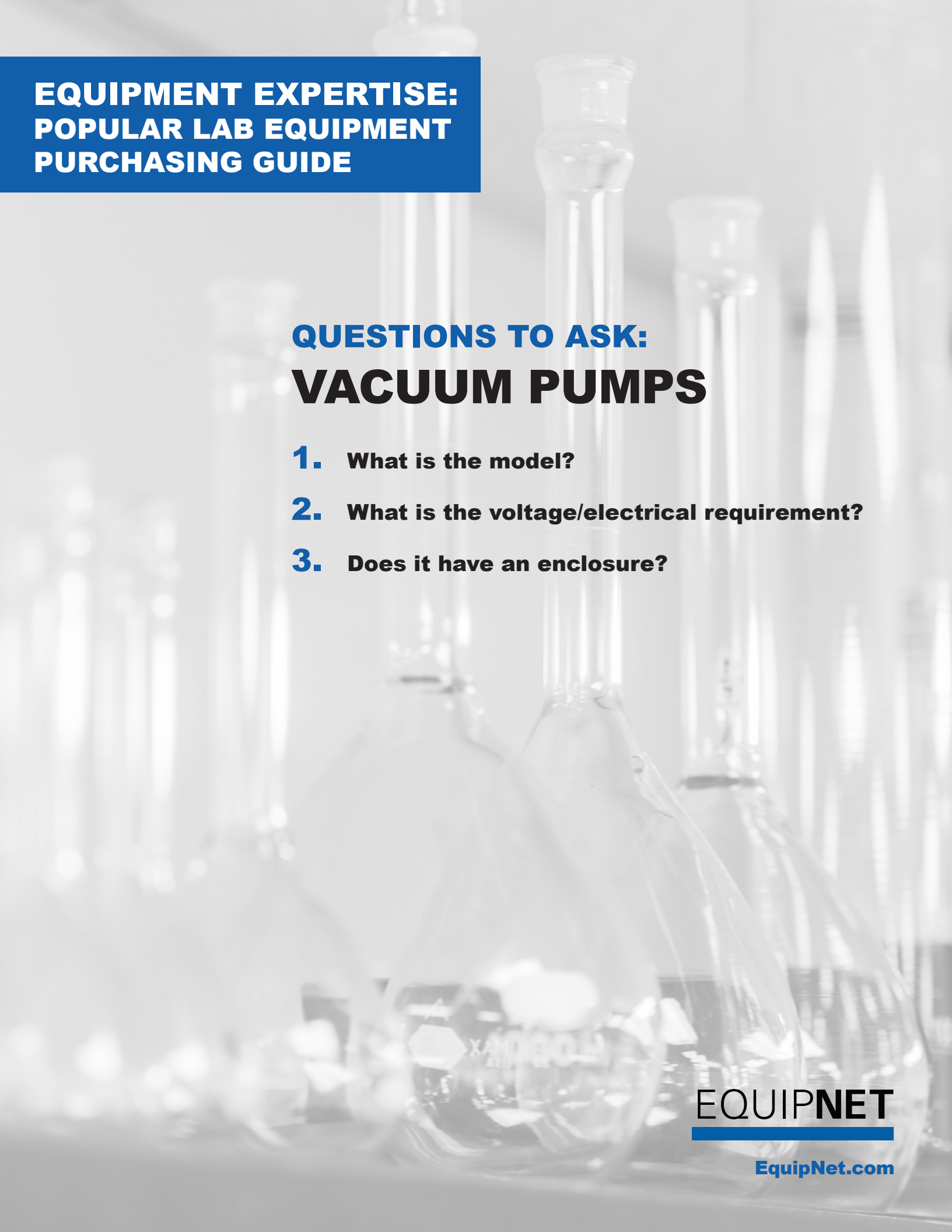


EQUIPMENT EXPERTISE:

POPULAR LAB EQUIPMENT PURCHASING GUIDE

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Introduction.

There are many questions to ask before deciding to purchase a piece of laboratory equipment to ensure the ideal option for your lab needs. Here is a list of popular lab equipment, along with various questions to ask before making a purchasing decision.

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QUESTIONS TO ASK: CENTRIFUGES

1. What style rotors?

A rotor is the device into which samples are loaded. There are two styles of rotors:

- Bucket Rotors
- Fixed Rotors

2. What type?

There are two types:

- Floor Model – higher speed and more output
- Table Top – research and development – slower speeds and less output

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QUESTIONS TO ASK: CENTRIFUGES

3. What manufacturer and model?

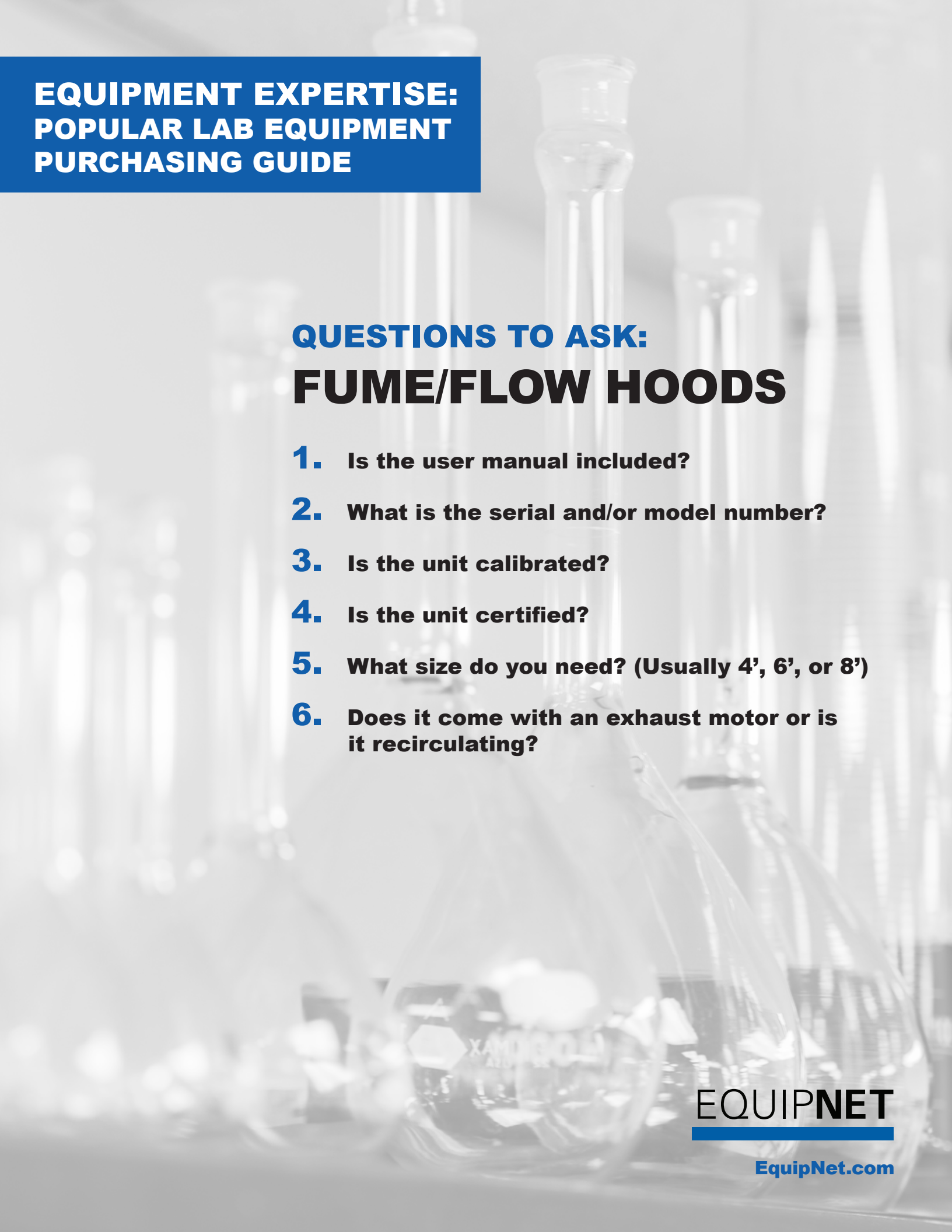
Major Manufacturers:

- Beckman-Coulter
- Eppendorf
- Sorvall

There are various models from each company that are popular; the most important factor is what size rotors come with the centrifuge.

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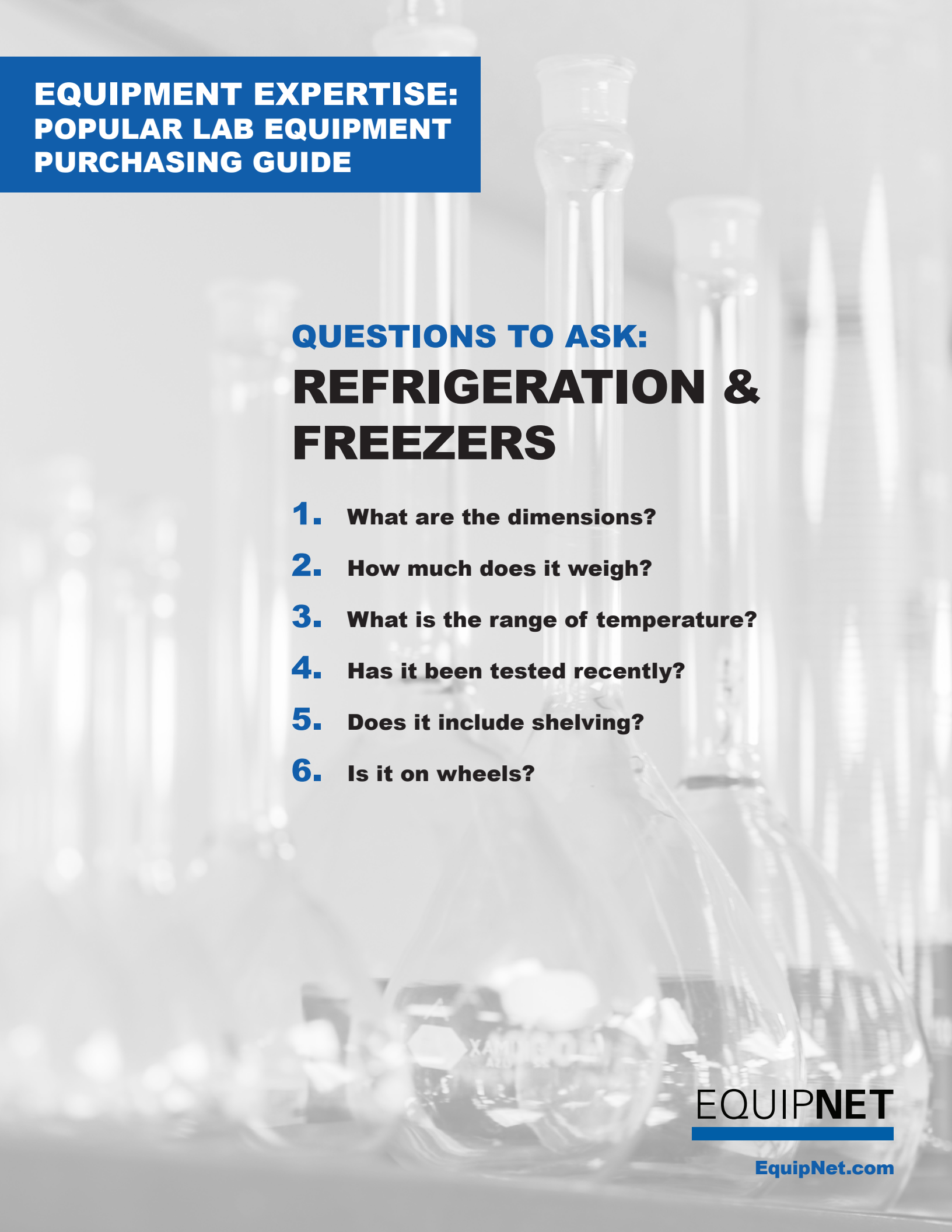
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QUESTIONS TO ASK: FUME/FLOW HOODS

- 1. Is the user manual included?**
- 2. What is the serial and/or model number?**
- 3. Is the unit calibrated?**
- 4. Is the unit certified?**
- 5. What size do you need? (Usually 4', 6', or 8')**
- 6. Does it come with an exhaust motor or is it recirculating?**

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QUESTIONS TO ASK: REFRIGERATION & FREEZERS

- 1. What are the dimensions?**
- 2. How much does it weigh?**
- 3. What is the range of temperature?**
- 4. Has it been tested recently?**
- 5. Does it include shelving?**
- 6. Is it on wheels?**

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QUESTIONS TO ASK:

GAS CHROMATOGRAPHS (GC)

- 1. Does it have an auto sampler?**
- 2. Does it have an injection tower?**
- 3. Does it have detectors?**

Detectors collect data on sample components as they move through the column.

- ECD – Electron Capture Detector
- FID - Flame Ionization Detector
- FPD – Flame Photometric Detector
- TC – Total Carbon
- MS – Mass Spectrometer
- Head Space

- 4. Does it include software?**

Interface Cards – Used to communicate between a computer & equipment.

- NIC, Network Interface Card
- HP-IB, Hewlett Packard Interface Card
- GPIB, General Purpose Interface Card

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QUESTIONS TO ASK: GAS CHROMATOGRAPHS (GC)

5. What is the condition of the equipment?

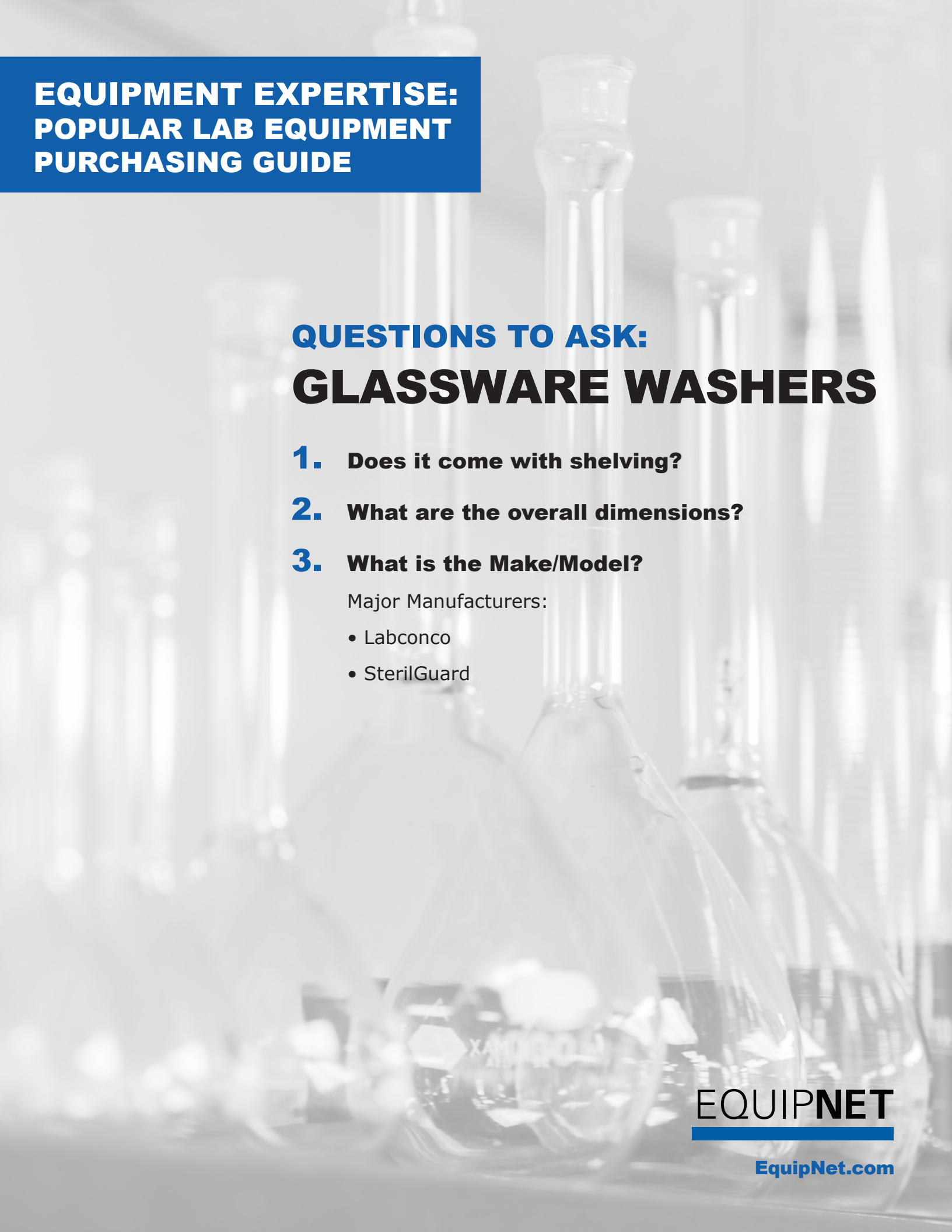
6. What manufacturer and model?

Major Manufacturers.

- Agilent – most desirable
 - 5890 (older unit, value dependent on detectors)
 - 6890 (newer – good resale value)
 - 6890N (newest and most expensive)
- Shimadzu – versatile machines, connect easily with various mass spec models
 - GC-8A
 - GC-14A
 - GC-17A
 - GC-2010
 - GC-2014 (newest model)
- Perkin Elmer
 - PE 8310
 - PE 8500
 - Autosystem XL GC
 - Clarus 400
 - Clarus 500 (new)

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QUESTIONS TO ASK: GLASSWARE WASHERS

- 1. Does it come with shelving?**
- 2. What are the overall dimensions?**
- 3. What is the Make/Model?**

Major Manufacturers:

- Labconco
- SterilGuard

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QUESTIONS TO ASK: HPLC/UPLC SYSTEMS

1. Does it include all components?

- Autosampler
- Solvent Pump
- Degasser
- Column Heater
- Detectors
- Fraction Collectors
- Interface Cards

2. What type of Solvent Pump?

- Isocratic – One type of mobile phase can be used
- Binary – Two types of mobile phase can be used
- Ternary - Three types of mobile phase can be used
- Quaternary - Four types of mobile phase can be used

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QUESTIONS TO ASK: HPLC/UPLC SYSTEMS

3. What type of detectors?

- MWD – Multi Wavelength Detector
- UV/VIS – Ultraviolet Index Spectrometer
- DAD – Photo Diode Array Detector
- FL – Fluorescence Detector

4. Does it include software?

Interface Cards – Used to communicate between a computer & equipment

- NIC, Network Interface Card
- HPIB, Hewlett Packard Interface Card
- GPIB, General Purpose Interface Card

5. What software revisions will be needed?

6. What is the configuration?

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QUESTIONS TO ASK: HPLC/UPLC SYSTEMS

7. What manufacturer and model?

Major Manufacturers

- Agilent – most popular
 - 1090 - oldest
 - 1050
 - 1100
 - 1200 – most recent
- Waters – 2nd most popular
 - Component Systems
 - o 717 + Autosampler + 600E Controller
+ 484 Detector + 515 Pump
(older unit, not much value)
 - Box Systems
 - o 2690
 - o 2695
 - o 2790 – newer model
 - o UPLC – most recent

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QUESTIONS TO ASK: HPLC/UPLC SYSTEMS

7. What manufacturer and model?

Major Manufacturers

- Dionex and Shimadzu – 3rd most popular

Dionex:

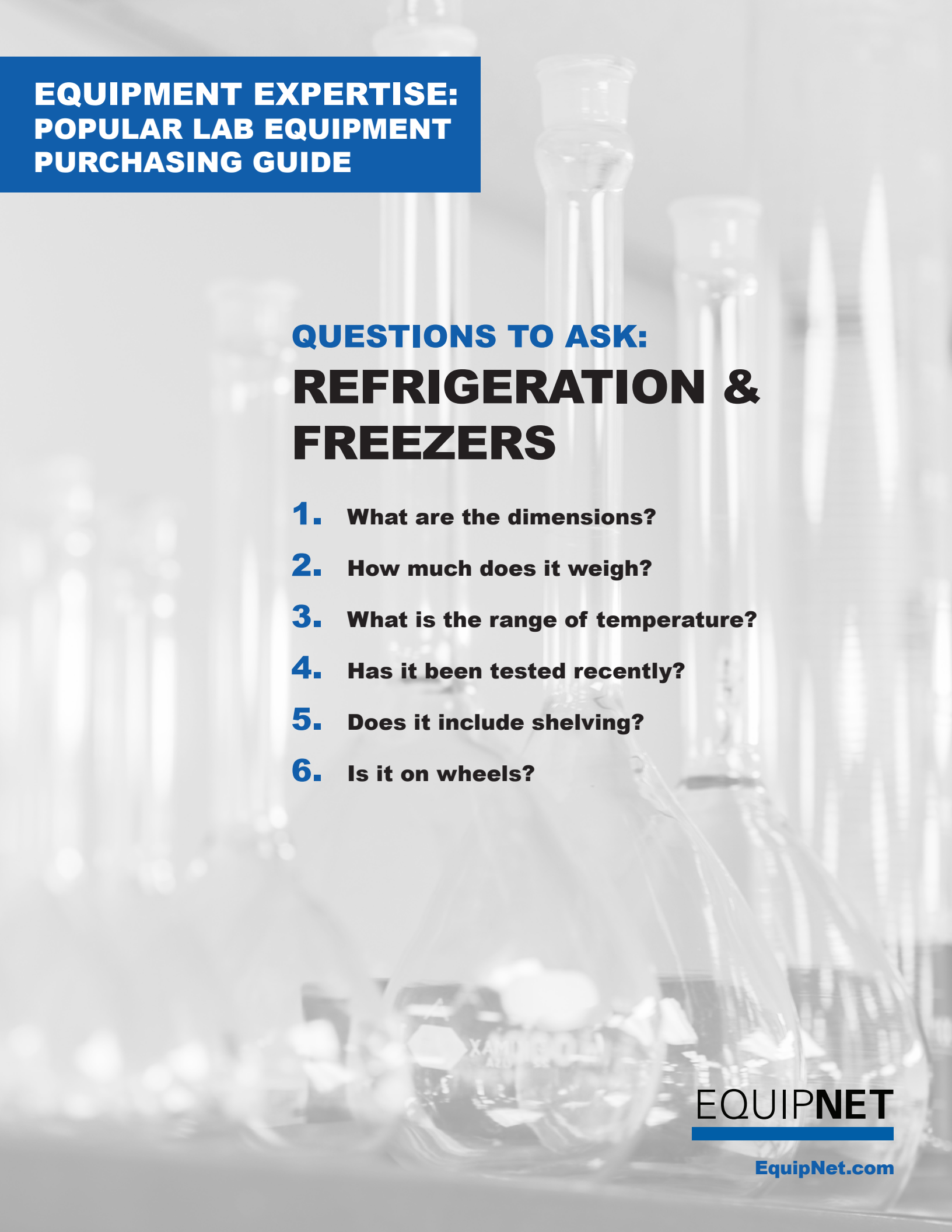
- DX – 300
- DX – 500
- ICS – 3000
- Clarus 400
- Clarus 500 (new)

Shimadzu:

- 10A
- 10AVP
- 10ADVP

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QUESTIONS TO ASK: LC/MS MASS SPECTROMETERS

- 1. What type of LC/MS?**
- 2. Does it have a front end (HPLC or LC) with it?**
- 3. What software is included and what revisions will be needed?**

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QUESTIONS TO ASK: LC/MS MASS SPECTROMETERS

4. What manufacturer and model??

Major Manufacturers:

- AB-Sciex – most popular
 - 365 (oldest)
 - 1000
 - 2000
 - 3000
 - 4000
 - 5000 (newest and most popular)
- Waters
 - Q-TOF
 - LCQ
 - ZMD
 - Quattro
- Agilent
 - 5971
 - 5972
 - 5973
 - 1100MSD

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QUESTIONS TO ASK: ICP/MS MASS SPECTROMETERS

- 1. What type of ICP/MS?**
- 2. What software is included and what revisions are needed?**
- 3. What manufacturer and model?**

Major Manufacturers:

- Agilent
 - 7700
- Perkin Elmer
 - ELAN DRC-e
- Thermo Scientific
 - XSERIES II

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QUESTIONS TO ASK: MICROPLATE READERS

- 1. Does it include Stackers?**
- 2. Does it include software?**
- 3. Does it include computer?**
- 4. Does it include the user manual?**
- 5. What manufacturer and model?**

Major Manufacturers:

- BioTek
 - Synergy
 - ELX808
- Perkin Elmer
 - EnVision
 - EnSpire
- Molecular Devices
 - VersaMax

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QUESTIONS TO ASK: MICROSCOPES

1. What type and style is it?

Major Manufacturers:

- Fluorescence
- Imaging
- Inverted
- Binocular
- Trinocular
- Teaching Microscope

2. What magnification objectives does it have?

3. Does it include a camera with housing?

4. Does it include a light source?

5. Does it include a laser?

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QUESTIONS TO ASK: MICROSCOPES

6. What manufacturer and model?

Major Manufacturers:

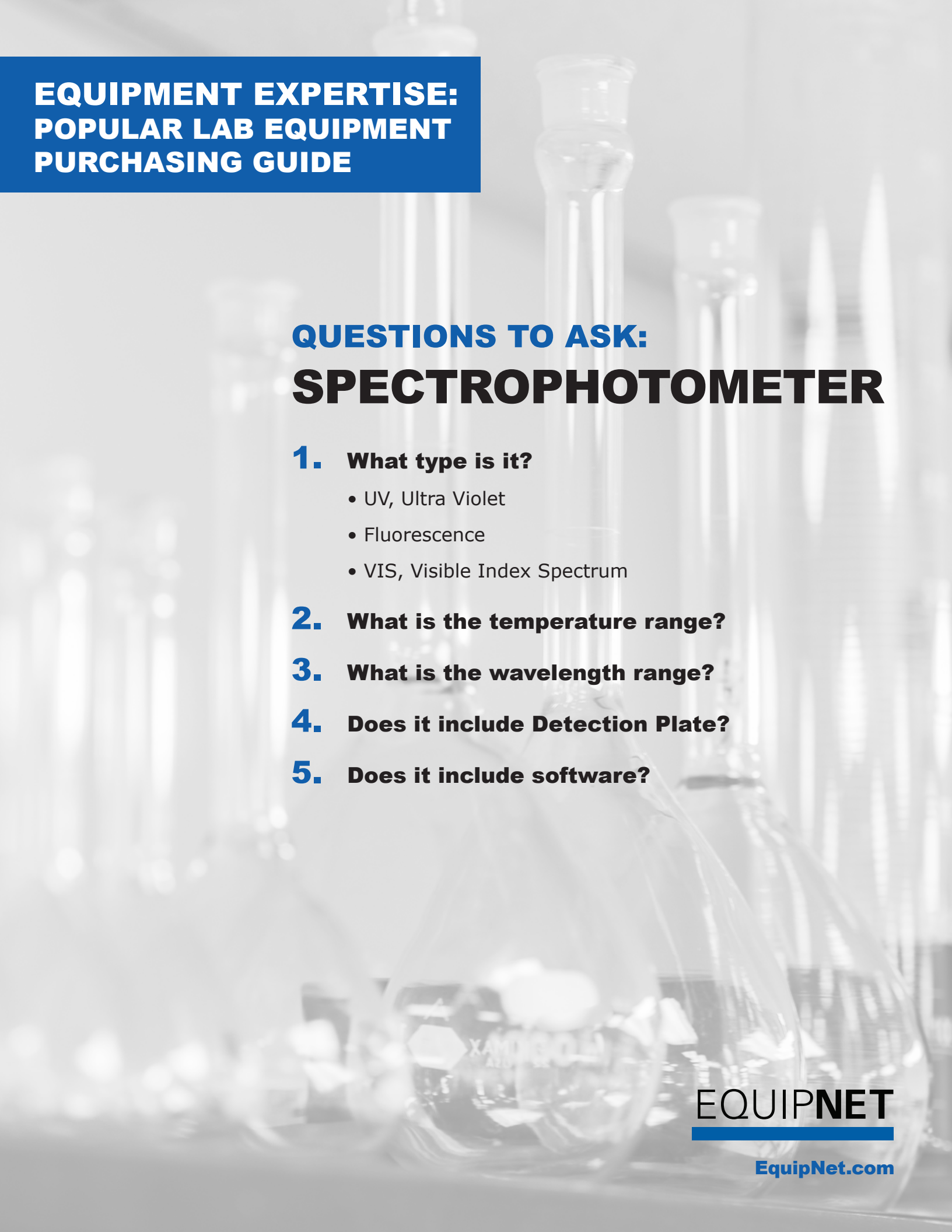
- Nikon – Eclipse TE2000, Optiphot
- Leica – DMRBE, DMLS
- Olympus – AX70, SZ-PT
- Zeiss – Axiophot, Axioskop, Axiovert

7. Is computer and software included?

8. Does it have a mobile or set stage?

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QUESTIONS TO ASK: SPECTROPHOTOMETER

- 1. What type is it?**
 - UV, Ultra Violet
 - Fluorescence
 - VIS, Visible Index Spectrum
- 2. What is the temperature range?**
- 3. What is the wavelength range?**
- 4. Does it include Detection Plate?**
- 5. Does it include software?**

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QUESTIONS TO ASK: SPECTROPHOTOMETER

6. Does it include user manual?

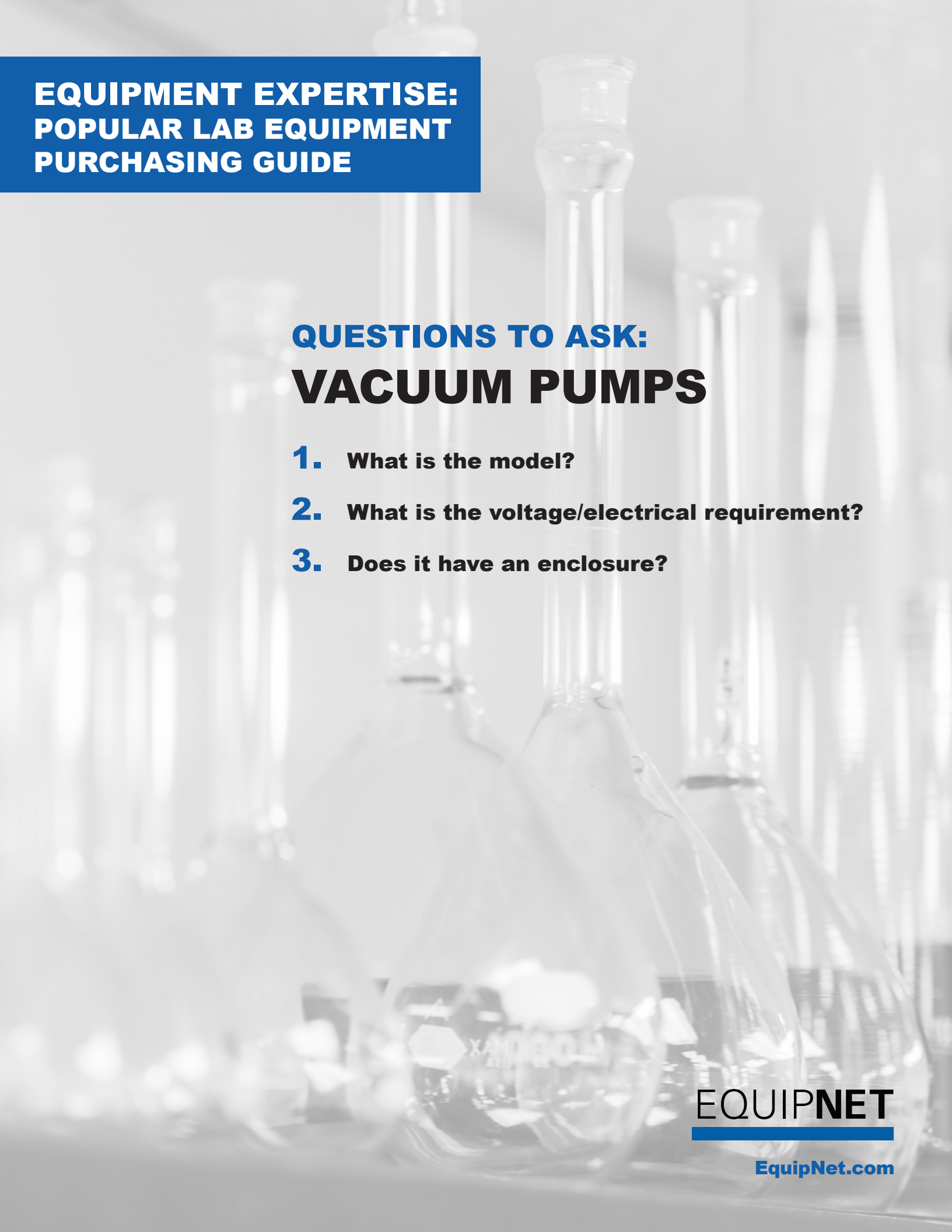
7. What manufacturer and model?

Major Manufacturers

- Agilent – 8453
- Beckman Coulter – DU 800, DU 650
- Shimadzu – UEDEX-1200, UV-2700
- Perkin Elmer – Spectrum 1 FTIR, Lambda

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QUESTIONS TO ASK: VACUUM PUMPS

- 1. What is the model?**
- 2. What is the voltage/electrical requirement?**
- 3. Does it have an enclosure?**

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a lab equipment, please
contact an EquipNet
representative:**

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