

TECHNICAL BULLETIN

OPTIMA XPN NETWORKING AND REMOTE OPERATION

Preparative ultracentrifuges are a staple in life science research labs. Beckman Coulter has long been a leader in useful innovations that aid in the discovery process and contribute to meaningful research. This paper details the innovations aimed at improving the accessibility of today's ultracentrifuges by adding networking and remote operation capabilities.



Brilliance
at every turn.



Optima X Series Networking and Remote Operation

Networking introduces new level of flexibility to the laboratory.

Centrifuges are used worldwide as basic research tools. This paper highlights design elements of the new Optima XPN ultracentrifuge that provide industry-leading capabilities in networking and remote operation. The addition of networking capabilities increases the usefulness of the ultracentrifuge and improves efficiency by untethering users from the instrument via the ability to remotely control and monitor the instrument.

The traditional ultracentrifuge can be thought of as analogous to a wired phone connection. The user had to be at the phone to use it. That is no longer the case with the Optima XPN ultracentrifuge. By incorporating networking capabilities, the researcher can now operate the ultracentrifuge, download information, and set up email notifications to alert them of any unusual occurrences during the centrifuge run. The ability to operate and monitor the centrifuge remotely allows for more efficient use of time in the lab, increased time away from work, and more time with family and friends.

Through a built-in Ethernet port, the Optima XPN can be linked in to the user's existing network. Once connected to a Local Area Network (LAN) and properly configured, the user can export run histories, rotor logs, run graphs, and user manuals to an existing network drive. Data can be exported for easy archiving or further analysis. The user can also print directly to a connected USB printer or to a networked printer.

Once networked and properly configured, the Optima XPN allows remote control and monitoring of the centrifuge. The user can log on from any computer that has network access and VNC® (Virtual Network Computing) software. Using the instrument's Internet Protocol (IP) address, the user can monitor and control

the centrifuge as if they were standing in front of it.

In addition to remote access via personal computer, the Optima XPN is also accessible through a mobile device using a custom Optima XPN application for the iPhone® mobile digital device. Once properly installed and configured, the application allows the user, from their mobile device, to set and monitor basic run parameters and view any diagnostics or alerts that may appear during operation.



Remote operation and control allows the user to track the status of their run from virtually anywhere. This improves efficiency by reducing trips down the hall or upstairs to the shared lab space, or re-gowning to check the status of a run for a centrifuge operating in a bio-safety lab. It even allows you to monitor progress from home during overnight runs.

If remote operation and control are not required, but the user needs notification if a run is interrupted for any reason, the Optima XPN is equipped to send email alerts. Once properly configured, the Optima XPN will send an email alert to the addresses of registered users, notifying them of any potential issues or run interruptions.

Beckman Coulter is dedicated to providing useful innovations that improve the users' quality of life. In today's busy research environment, time can be a very valuable commodity. In fact, much research has been done to tie the importance of balance between work and family time to quality of life. Researchers such as G.S. Shaffer,¹ R. & R.N. Rapoport,² and others have published research showing the importance of work/life balance to quality of life. In their research it was shown that a balance between work

obligations and family time was key to high levels of job satisfaction and high performance. In their published work *Quality of Work Life: Implications of Career Dimensions*³ the authors state “the rising number of two-income households is heightening the concern for employees’ quality of work life. Given that female participation at work is increasing, it is apparent that males and females independently will need to take care of both work and home.”

¹ Shaffer, G.S., 1987. *Patterns of work and non-work satisfaction*. J. Appl. Psychol., 72: 115-124.

² Rapoport, R. and R.N. Rapoport, 1980. Balancing work, family, and leisure: a triple helix model. In C.B. Derr (Ed.). *Work, family and the career*. New York: Praeger.

³ Rose, R.C., L. Beh, J. Uli and K. Idris, 2010. *Quality Of Work Life: Implications Of Career Dimensions*. J. Soc. Sci., 2: 61-67. DOI: 10.3844/jssp.2006.61.67.

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