Taking photometry to the cyber-physical space

Multiskan Sky Microplate Spectrophotometer with Thermo Fisher Cloud connection.

Scientists are embracing the phenomenon known as the Internet of Things (IoT), which refers to technology driven by machine-to-machine communication. In the life sciences context, the IoT translates into research and medical laboratory instruments that are connected to the internet [1]. Integral to the IoT is the cyber-physical space—the interconnected system of physical devices and computer-based algorithms that control and regulate the instrumentation. By 2020, the IoT is projected to comprise approximately 20 billion discrete devices, surpassing the number of human internet users [2].

In the midst of this digital revolution, Thermo Fisher™ Cloud offers an innovative ecosystem tailored to the needs of life science researchers. It harbors well-designed, user-friendly tools for secure remote instrument access, scientific analysis, and data storage. As the first microplate reader connected to Thermo Fisher Cloud, the Thermo Scientific™ Multiskan™ Sky Microplate Spectrophotometer enables researchers to perform photometric measurements while also taking advantage of the cyber-physical space provided by the IoT.

Multiskan Sky microplate reader: Redefining photometry

The Multiskan Sky Microplate Spectrophotometer (Figure 1) is ideal for multiuser environments and is compatible with a variety of endpoint, kinetic, and spectral assays. This UV/Vis microplate reader is exceptionally convenient for virtually any photometric application, especially nucleic acid and protein analyses. Here we highlight two Multiskan Sky spectrophotometer models (without and with a cuvette port) that have a touchscreen user interface (Figure 1) as well as access to Thermo Fisher Cloud–based tools. These models offer:

- Monochromator-based detection, with a freely adjustable selection of wavelengths from 200 nm to 1,000 nm (in 1 nm steps)
- Compatibility with 96- and 384-well microplates (with and without lids), cuvettes, and the Thermo Scientific™ µDrop™ Plate, a 16-well reusable plate for microvolume DNA, RNA, and protein quantitation
- Onboard shaking and incubation (up to 45°C) for temperature-sensitive assays
- Touchscreen access to built-in protocols for nucleic acid and protein quantitation
- Access to more complex protocols (e.g., cell viability assays) in the Online Protocols Library of Thermo Scientific™ SkanIt™ Software v5.0

Figure 1. Multiskan Sky Microplate Spectrophotometer with touchscreen.

To access cloud-based tools for secure, powerful remote data management, users can link the Multiskan Sky Microplate Spectrophotometer to their Thermo Fisher Cloud accounts via the instrument's touchscreen, from a laptop using the Thermo Fisher Cloud site, or from a cell phone using the Instrument Connect app. Once linked, users can log in to their Multiskan Sky instrument with a simple access code, perform photometric measurements, and upload their data directly to the cloud, where it can be shared within their team or with colleagues around the world. When several Multiskan Sky instruments are used together in an application, users can manage them from the cloud dashboard. In a multiuser setting, a Multiskan Sky instrument can be booked via the "Schedule Instrument" tool of Thermo Fisher Cloud.

Propelling photometry into the IoT space

The cloud-connected Multiskan Sky Microplate Spectrophotometer allows you to access research results remotely, facilitating data analysis, management, and storage. To learn more and stay up to date as resources expand, go to **thermofisher.com/multiskansky**. ■

References

1. Perkel JM (2017) *Nature* 542:125–126.
2. Joyce J (2018) *Laboratory Manager*, 07 May 2018. labmanager.com/laboratory-technology/2018/05/how-the-internet-of-things-is-affecting-laboratory-equipment

Product	Cat. No.
Multiskan™ Sky Microplate Spectrophotometer, with touchscreen	51119600 51119600DP*
Multiskan™ Sky Microplate Spectrophotometer, with touchscreen and cuvette-reading capability	51119700 51119700DP*
µDrop™ Plate	N12391

*Also includes a µDrop™ Plate.