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Find the *Thermo / LabSystems Nepheloskan Ascent* at our website: ***Click HERE***

# Nepheloskan Ascent®

**Nepheloskan Ascent is the first nephelometer adapted to measure from microplates. Accurate measurement of light scattering from microwells makes the Nepheloskan excellent for assays requiring detection of particles from low-volume samples. Nepheloskan is ideally suited for high-throughput solubility tests of drug compounds in the ADME phase of drug discovery.**

## Ultra-sensitive detection of particles

Nepheloskan Ascent has a dedicated optical system to measure light scattering of samples in microplate format, allowing excellent sensitivity in particle determinations. A detection limit (theoretical sensitivity) as low as 1.0 ng/ml can be obtained with the Nepheloskan when the diameter of the particles is approximately the same as the wavelength of the incident light (580 – 630 nm).

## No color interference

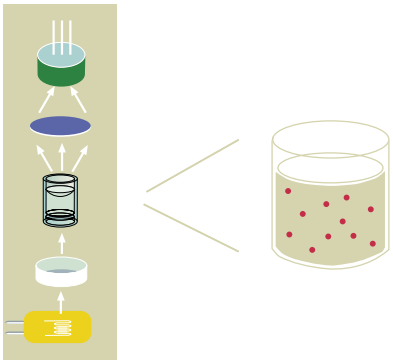
As scattered light is measured instead of absorbance, colored and organic compounds do not interfere with the measurement, thus avoiding the risk of false positives. The signal-to-noise ratio has been shown to be 10 – 50 times higher with the Nepheloskan Ascent than with photometers.

## Adjustable sensitivity

Nepheloskan Ascent allows you to raise the detection limit should your samples require, e.g., samples with very small particles or a blue-greenish suspension. This can easily be done with the powerful Ascent Software by increasing the photomultiplier tube or/and lamp gain, which both dramatically increase the sensitivity and dynamic range of the instrument.

## Incubator, orbital shaker and optional dispenser

The incubator and adjustable orbital shaker provide added advantages for studying factors that affect the solubility of pharmaceutical components.



*The Nepheloskan Ascent has a highly sensitive optical system for detection of particles. A light source and an optical unit filter direct a focused light beam to the sample in the microwell. Another optical unit above the microplate allows only scattered light (angle about 30°) to pass towards the detector.*







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## Minimal sample size

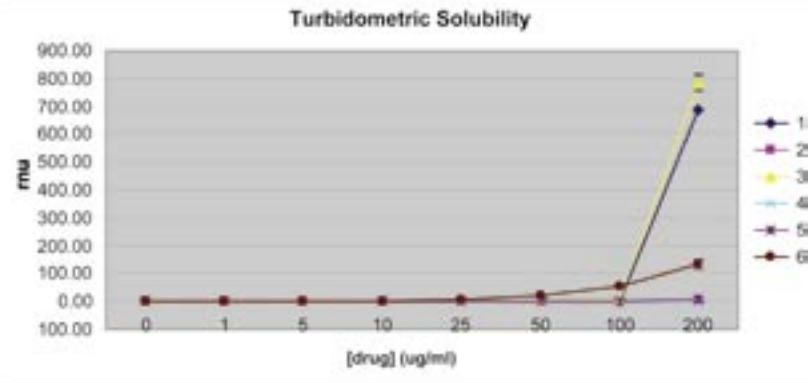
With the microplate format, several samples can be run simultaneously and only small quantities of compounds are needed, saving time and sample compared to conventional methods. The Nepheloskan Ascent measures 96 wells in only 18 seconds; thus measurement of 1000 samples takes just over 3 minutes.

## Easy robotic integration

Specially designed for complete robot compatibility, the Nepheloskan Ascent can be used for high-volume tests. The plate carrier allows convenient access for different types of robotic arms, and Ascent Software enables easy integration with robotic systems.

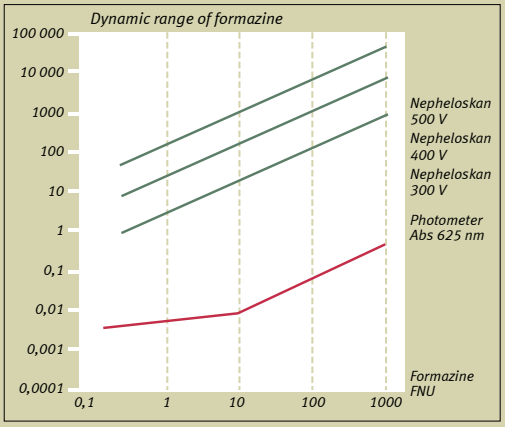
| Technical Specifications | |
|---|---|
| Plate type | 96-well plate |
| Light source | Quartz halogen lamp |
| Detector | Photomultiplier tube |
| Spectral response | 580 – 630 nm |
| Measurement angle | Approx. 30° |
| Measurement speed | Minimum 18 s/plate depending on settle delay time |
| Shaker | Orbital method, speed 60 – 1200 rpm, diameter 1 – 50 mm |
| Temperature range | From RT (25°C) +3°C to +45°C<br>when ambient temperature is 25°C |
| Dispenser | One dispenser as an option |
| Dispensing volume | 5 – 1000 µl in 1 µl increments |
| Recommended assay volume | 300 µl per well in Microtiter 96-Well Plates |

→ Ordering information on pages 54–55.




*Drug solubility test: a drug compound in DMSO solution is added to a microplate well containing deionized water or buffer, and after mixing, the turbidity is measured with Nepheloskan Ascent. One can easily see the precipitates (compounds) upon visual inspection as shown in this study.*

*Calibration: Nepheloskan Ascent is calibrated using NIST calibration standards, latex beads, which are first calibrated against the primary standard, a formazine suspension. The figure also shows the high sensitivity of the Nepheloskan as compared to a photometer.*






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