thermoscientific

Thermo Scientific NanoDrop Products

Instruments for rapid microvolume analysis of DNA, RNA and protein samples

ThermoFisher SCIENTIFIC

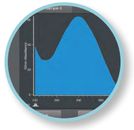
NanoDrop—trusted by scientists worldwide

Rely on fast, accurate quantification of DNA, RNA and protein samples using only 1–2 µL with Thermo Scientific™ NanoDrop™ microvolume instruments. No dilutions needed even for highly concentrated samples with pioneering sample-retention technology* using optical measurement pedestals. For over 20 years and with over 55,000 citations, NanoDrop instruments have been helping scientists around the world do their best work. With preconfigured methods for common life science applications, NanoDrop instruments make a novice perform like an expert. It's as simple as pipette, measure, know!

Pipette.

Measure.

Know.



NanoDrop One/One^{C} UV-Vis Spectrophotometer

Intelligent analysis, streamlined workflows

- Contaminant identification and corrected concentrations with Thermo Scientific™ Acclaro™ Sample Intelligence technology
- Touchscreen interface with guided troubleshooting and pre-programmed methods for life sciences
- Modern connectivity allows seamless data transfer to PC or network via Wi-Fi, USB, or Ethernet. Export data to Thermo Fisher™ Connect cloud-based storage and access it anytime, anywhere from any device!

NanoDrop Eight UV-Vis Spectrophotometer

Advanced analysis, 8 samples at once

- Measure 8 samples at a time for improved efficiency
- Acclaro Sample Intelligence technology identifies contaminants in your sample
- Pharma ready with 21 CFR Part 11 compliance software and LIMS integration

NanoDrop Lite UV Spectrophotometer

Simple analysis, compact design

- Purified DNA and RNA concentration using A260
- Purified protein sample concentration from A280
- Palm-sized, portable instrument requires no PC control
- Optional docking printer prints cryogenic labels

NanoDrop 3300 Fluorospectrometer

Microvolume fluorescence analysis

- Wide excitation range without filter changes or monochromators
- Diverse range of measurements from routine (e.g., Thermo Scientific™ RiboGreen™ fluor, Thermo Scientific™ PicoGreen™ fluor, GFP) to advanced fluorescence analysis (e.g., nanoparticles, quantum dots, FRET)

NanoDrop products comparison—

choose the instrument that's right for you

					NUCLEIC ACIDS SAMPLES				PROTEIN AND PEPTIDE SAMPLES										
Instrument		Measures 1–2 µL sample	Pre-programmed methods for life sciences	Full-spectral data	A260	A260/A280	A260/A230	Acclaro contaminant ID	A280	A260/A280	A205	Colorimetric assays[1]	Acclaro contaminant ID	Custom methods editor	High-res touchscreen interface	Requires computer to operate	Can evaluate FLR-labeled samples[2]	21 CFR Part 11 software option	Auto-measure capability
NanoDrop One/One^{C}	UV-Vis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
NanoDrop Eight	UV-Vis	✓	✓	✓	✓	✓	✓	✓	✓	✓	**	**	**	**		✓	✓	✓	✓
NanoDrop Lite	UV	✓	✓		✓	✓			✓										
NanoDrop 3300	Fluorescence	✓	✓	✓										✓		✓	✓		

1. Bradford, BCA, Lowry, Pierce 660 2. NanoDrop One and NanoDrop Eight systems use absorbance to measure fluorescently-labelled nucleic acids and proteins

**US Patents 6628382 and 6809826*
***Coming soon*

NanoDrop instrument specifications

Description	NanoDrop One/One^{c} Spectrophotometer	NanoDrop Eight Spectrophotometer	NanoDrop Lite Spectrophotometer	NanoDrop 3300 Fluorospectrometer
21 CFR Part 11 Compliance	Yes	Yes	No	No
Instrument Control	Built-in touchscreen or computer software	Computer software	Local control	Computer software
Minimum Sample Size	1 µL	1 µL	1 µL	1 µL
Sample Number	1	Up to 8	1	1
Pathlength(s)	0.030 to 1.0 mm auto-ranging	1.0, 0.2, 0.1 mm, auto-ranging	0.5 mm	N/A
Light Source(s)	Xenon flash lamp	Xenon flashlamp	Light emitting diodes	Light emitting diodes
Excitation Maxima of LEDs	N/A	N/A	N/A	UV: 365 nm, Blue: 470 nm, White: 460–650 nm
Detector Type	2048-element CMOS linear image sensor	2048-element CMOS linear image sensor	Silicon photodiode	2048-element linear silicon CCD array
Wavelength Range	190–850 nm	190–850 nm	260 and 280 nm	400–750 nm
Wavelength Accuracy	±1 nm	±1 nm	N/A	±1 nm
Spectral Resolution	≤1.8 nm (FWHM at Hg 254 nm)	≤ 1.8 nm (FWHM at Hg 254 nm)	<8.0 nm	8.0 nm (FWHM at Hg 546.1 nm)
Typical Measurement Repeatability	0.002 A (1.0 mm path) or 1% CV, whichever is greater	0.002 A (1.0 mm path) or 1% CV, whichever is greater*	0.002*	<5% CV (10 nM fluorescein)
Absorbance Accuracy**	3% (at 0.97 A, 302 nm)	3% at 0.97 A, 302 nm, 23 ± 2 C°	3% (at 1.05 Abs at 260 nm)	N/A
Absorbance Range (10 mm equivalent)	Pedestal: 0–550A, Cuvette: 0–1.5A	0.04–200 Abs (10 mm equivalent)	0–30 Abs	N/A
Lower Limit of Detection	Pedestal: 2 ng/µL (dsDNA) 0.06 mg/mL (BSA) Cuvette: 0.2 ng/µL (dsDNA) 0.006 mg/mL (BSA)	2.0 ng/µL (dsDNA) 1.6 ng/µL (RNA) 0.06 mg/mL (BSA) 0.03 mg/mL (IgG)	4 ng/µL (dsDNA) 0.12 mg/mL (BSA)	<1 fmol fluorescein
Maximum Concentration	Pedestal: 27,500 ng/µL (dsDNA) 820 mg/mL (BSA)	10,000 ng/µL (dsDNA) 8,000 ng/µL (RNA) 300 mg/mL (BSA) 145 mg/mL (IgG)	1,500 ng/µL (dsDNA) 45 mg/mL (BSA)	N/A
Measurement and Data Processing Time	8 seconds	< 20 seconds	<5 seconds	2–10 seconds
Footprint	20 × 25.4 cm	24 cm x 33 cm x 17 cm (wdh)	16 × 11.5 cm	14 × 20 cm
Weight	3.6 kg	3.7 kg	0.8 kg	1.5 kg
Sample Pedestal	303 stainless steel and quartz fiber	303 stainless steel and quartz fiber	303 stainless steel and quartz fiber	303 stainless steel and quartz fiber
Cuvette Position	Optional (with stirring)	N/A	N/A	N/A
Operating Voltage	12 V (DC)	12 V (DC)	6 V (DC)	5 V (DC)
Operating Power Consumption	12–18 W	15 W	18 W	2 W
Standby Power Consumption	5 W	3 W	<2.5 W	1 W
Software Compatibility	Standalone control. PC Software: Windows® 10 Professional (64 bit)	Windows® 10 Version 1607 Professional or Enterprise	Standalone control with data export via USB Flash Drive	Windows® 7 and 10 Professional (64 bit)
Advanced Connectivity	NanoDrop One Cloud Application*** Thermo Fisher Connect Platform	USB 3.0 port	N/A	N/A

** SD of 10 individual measurements at 0.74 Abs*
*** Absorbance expressed as Abs/mm measured at 25 °C*
**** Visit www.thermofisher.com/connect for details*

Find out more at **thermofisher.com/nanodrop**

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