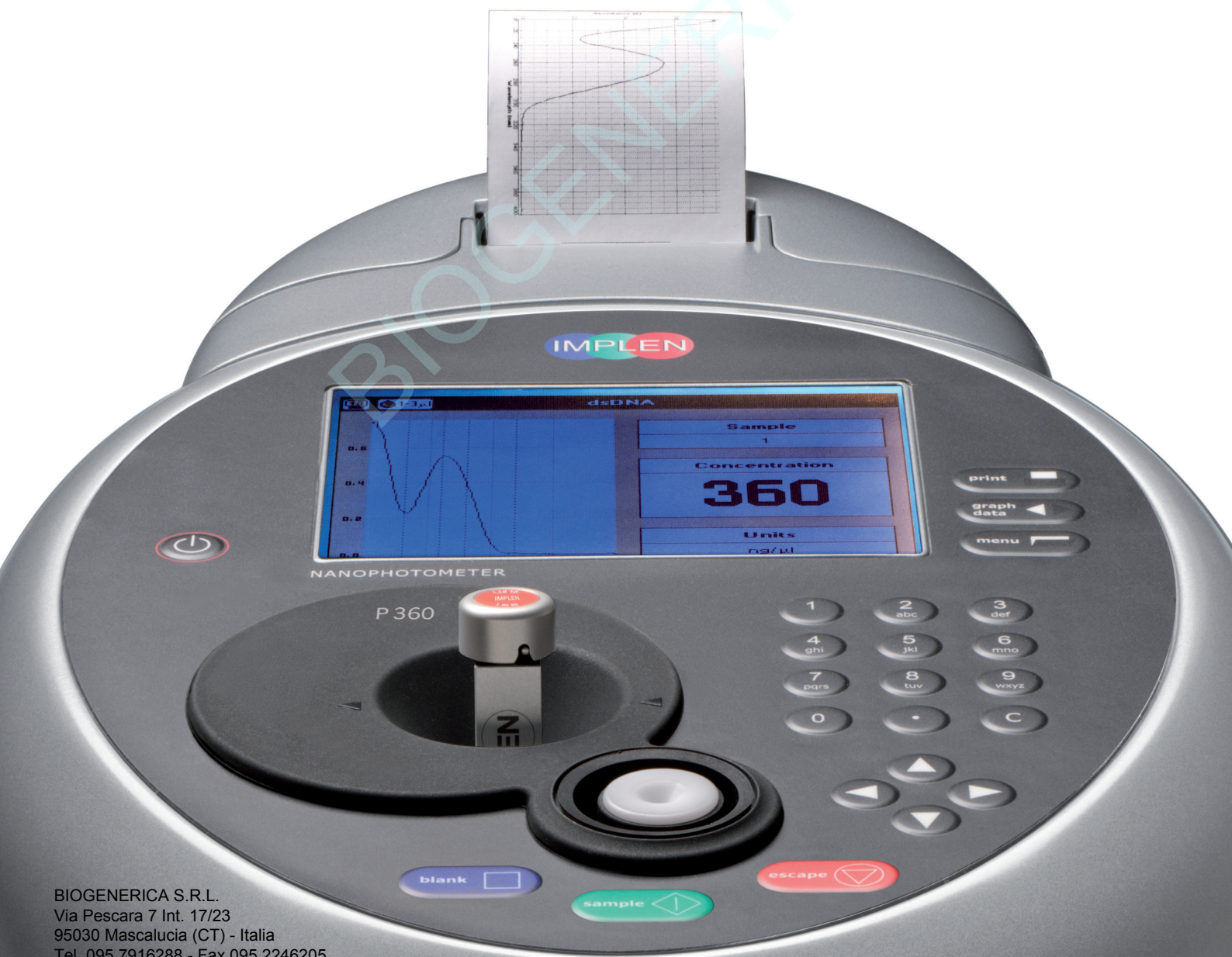


Small. Fast. Accurate.

# NanoPhotometer™ P-Class



# NanoPhotometer™ P-Class



## Small

### 0.3µl sample volume

Sample Compression Technology™ allows for accurate determination of nucleic acids, proteins, and peptides in ultra low sample volumes

## Fast

### 3.5 seconds per reading

Turn on and instantly measure without lamp warm up time; Full scan capability from 200-950nm in 3.5 sec

## Accurate

### Lifetime accuracy without recalibration

Sealed optics without moving parts or pathlength drift eliminates the need for costly and time consuming recalibrations; Avoid evaporation and sample limitations utilizing the patented Sample Compression Technology™

## Flexibility and Mobility

### All-in-One

Small volume and cuvette capability always standard; Standalone mobile design with large LCD display and available thermal printer for convenient direct printing; Electronic data can be automatically generated in a variety of file formats when connected to a PC; Bluetooth or SD-Memory capability is available on select models

## Detection Range

### Widest concentration coverage

Apply NanoVolume samples directly without dilution; Optical alignment, high linearity, and automatic dilution provide the widest concentration range of dsDNA 2-18,750 ng/ul and protein (BSA) 0.08-543 mg/ml

## Standardization

### Optimized Sample Condition

Ensure homogeneous samples with built-in low vibration vortexer option for consistent readings and accurate results over the entire life-time





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### NanoVolume Capability



0.3  $\mu$ l analysis with patented\* Sample Compression Technology™

\*US Patents 20080204755 and 20080106742

### Cuvette Capability



Wide concentration range for cuvettes (up to 2.5 Abs); Removable cell holder for easy cleanup after accidental spills; Methods optimized for OD600, Bradford, Lowry, Biuret, BCA and Kinetics

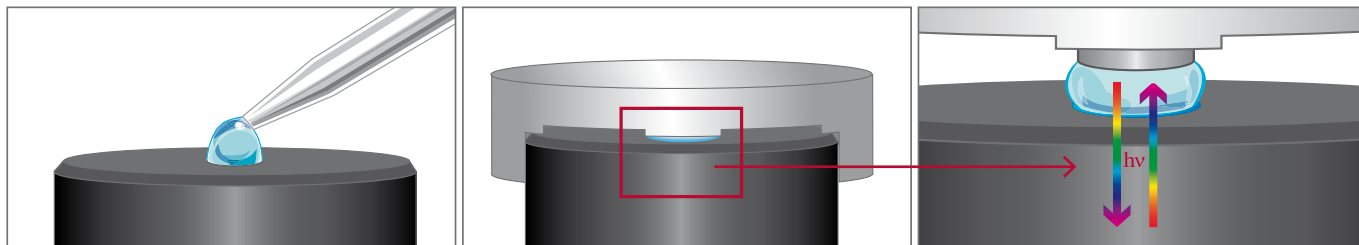
### Built-in Vortexer



Achieve sample uniformity by vortexing prior to each measurement; Obtain readings that represent the accurate concentration of the entire sample

# Performance and Applications

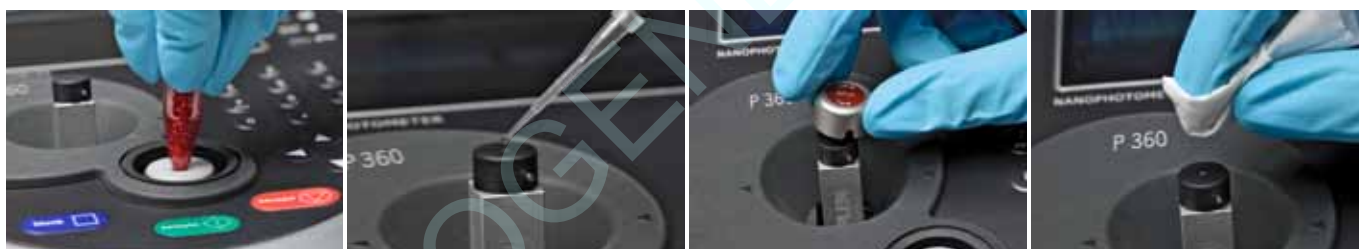
## Sample Compression Technology™



- | Dual Absorption™ of light for ultra sensitivity at low concentrations with minimal sample volumes of 0.3µl
- | Reliable solution for small volume protein measurements due to independence of sample surface tension; No issues of column formation with low surface tension samples

- | Reproducible results due to contained micro sample environment; Applications expanded to analytes in volatile solvents, such as drugs or other challenging sample types
- | No recalibration or maintenance as optical components and pathlengths are fixed without drift; Quartz sample surface is scratch resistant, inert, and does not require regular surface reconditioning

## Easy Handling



Mix sample

Apply sample

Automatic sample dilution

Quick and easy cleaning

## Professional Quantification

**NUCLEIC ACIDS**  
2 – 18,750 ng/µl  
(dsDNA)

**PROTEINS**  
0.08 – 543 mg/ml (BSA)

**OD600**  
0.01 – 2.5 OD

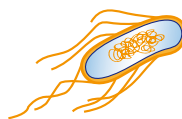
CONCENTRATION RANGE



DNA, RNA, Oligo



BSA, SA, IgG,  
Lysozyme, Custom



Yeast & Bacteria  
in Growth Curves

← Labelling of Nucleic Acids & Proteins →

Colorimetric Protein Assays



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# Technical specifications

## SMALL VOLUME OPTION

Detection range	dsDNA: 2 ng/ $\mu$ l to 18,750 ng/ $\mu$ l, BSA: 0.08 mg/ml to 543 mg/ml
Photometric range	0.01 – 1.5 A (10 mm equivalent: 0.05 – 375)
Minimum sample size	0.3 $\mu$ l
Path lengths	0.04 mm, 0.1 mm, 0.2 mm, 1 mm and 2 mm
Virtual dilution factors	5, 10, 50, 100 and 250

## SPECTROMODULE

Wavelength range	190 – 1,100 nm
Wavelength scan range	200 – 950 nm
System start up time	Less than 5 seconds, no warm up necessary
Measure time for full scan range	3.5 seconds
Wavelength reproducibility	< $\pm$ 0.2 nm
Wavelength accuracy	$\pm$ 2 nm
Bandwidth	Better than 5 nm
Stray light	< 0.5% at 220 nm using NaI and 340 nm using NaNO <sub>2</sub>
Photometric range	-0.3 – 2.499 A 0 – 199% T
Detection Range	dsDNA: 0.5 ng/ $\mu$ l to 125 ng/ $\mu$ l, BSA: 0.02 mg/ml to 3.6 mg/ml
Absorbance reproducibility	$\pm$ 0.003 A (0 to 0.5 A), $\pm$ 0.007 A (0.5-1.0 A) @ 260 nm
Absorbance accuracy	$\pm$ 0.005 A or $\pm$ 1% of the reading, whichever is the greater
Zero stability	$\pm$ 0.003 A/hour after 20 min warm up @ 340 nm
Noise	0.002 A rms at 0 A @ 260 nm 0.005 A (pk to pk) at 0 A @ 260 nm
Optical arrangement	Dual channel Czerny Turner with flat grating, 1024 pixel CCD array, concave mirrors
Lamp	Xenon flash lamp
Lifetime	10 <sup>9</sup> flashes, up to 10 years
Cell types	15 mm centre height (z-height), outside dimension 12.5 mm x 12.5 mm

## OTHER TECHNICAL DATA

Vortexer	2,800 rpm; tube size up to 2.0 ml
Cuvette storage	capacity for eight 10 mm cells
Photometric mode	Abs, %T, concentration, scan, ratio, multi wavelength, kinetics in $\Delta$ Abs x factor / min
Method storage	Up to 81 methods in user methods
Built-in methods	Nucleid acid, microarray (labeling efficiency), protein and cell density
Display formats	320 x 240 pixels
Size	140 mm x 275 mm x 380 mm
Weight	< 4.5 kg
Operating voltage	90 – 250 V, 50/60 Hz, Max 30 VA
Input / Output ports	SD Memory Card, USB or Bluetooth for connection to a PC for direct data download; printout and data storage
Performance verification	Auto diagnostics when switched on



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