



# ***VIS AND UV/VIS SPECTROPHOTOMETERS***



ANALYTICAL INSTRUMENTS

*New generation of VIS and UV/Vis spectrophotometers  
color touch screen display, spectrum scan on-board<sup>1</sup>,  
USB flash drive recovery*

**PASSION - EXPERIENCE - PERFORMANCE - COMFORT - CONVENIENCE**



**Smart design**

A modern design, simple, compact, with all the most common features available directly on the interface. ONDA Touch Series is the perfect instrument for your lab bench top in term of space and solidity



**Touchscreen**

A 5" TFT high definition color display for a new level of experience  
Easy interface, build-in features (photometry, quantitation, spectrum scan<sup>1</sup>)  
In addition to File management, System Utility and Performance verification



**Connectivity and Storage**

USB Flash drive connection for data and methods recovery  
PC remote control<sup>2</sup>, RS-232 port for micro printer connection, Internal memory to save your methods and data



**Easy access, easy maintenance**

Removable front panel, anticorrosive material holder, leaky hole inside sample compartment: all designed to protect the instrument from accidental spills, time wear and damage



**Lamp room**

Removing the top panel for easier and faster access to the source compartment, allows directly control, check of alignment and lamp replacement



**Multi language**

Select the language of your preference and improve your experience with Onda Touch instruments

English, German, Spanish, French, Italian, Portuguese

<sup>1</sup> Spectrum feature available only on SCAN models  
<sup>2</sup> optional software required

**Applications**



**Brewery**



**Winery**



**Food & Beverage**



**Process water**



**Drinking water**



**Bottled water**



**Waste water**



**Vegetable Oil/fat**



**Sugar industry**



**Bacterial cell number**

# THE NEXT GENERATION OF VIS AND UV/VIS SPECTROPHOTOMETERS

## New User Interface

With the new user interface the ONDA Touch series spectrophotometers are ideal for laboratory routine quality control, excellent for applications in education. Work with these innovative instruments as with your smartphone or tablet and enjoy the intuitive, icon-based menu.



### Photometry

Basic photometric measure:  
Absorbance  
Transmittance  
Energy



### Quantitation

Creation of calibration curve from standard solutions  
Comfortable calibration of customized methods



### Spectrum Scans<sup>1</sup>

High-precision live scans  
Analysis and automatic peak detection



### File Management

Save, delete or copy data and methods on internal memory and USB flash drive. Import/export to CSV and TXT files



### System utility

System calibration, lamp management, date/time, memory, multi-language



### Performance verification

Regularly check the instrument functionality for the quality assurance of your results

	Internal memory		USB flash drive		Data transfer USB ↔ device
	Export to CSV file		Export to TXT file		Data point/Peak detection
	Print data and methods		Calibration Curve		Method Detail

## Calibration Report

All Onda Spectrophotometers are supplied with a **Calibration Report** executed according to ISO 17025 requirements, for measuring with traceability.

On the **Calibration Report** are reported:

- Wavelength accuracy
- Photometric accuracy
- Stray light test
- Measurement uncertainty
- Traceability statement

**CERTIFICATE OF CALIBRATION**

**Test Standard for Instrument Performance Validation - Profondità della Certificazione Nazionale (CNC), G.I.P. (P.N.)**

**Test di Calibrazione per la Validazione delle Prestazioni dello Strumento - Esame con Materiali di Riferimento Certificati (CNC, G.I.P. (P.N.))**

**Spectrophotometer: UV/VISIBLE**  
 Model: ONDA UV-20 SCAN  
 Serial Number: 1001000000  
 Wavelength range: 190-1000 nm  
 Optical bandwidth: 2 nm @ 20%

**Environmental Conditions**  
 Temperature: 21.6 °C  
 Humidity: 45%
 Test Date: 09/11/2018

**1. Wavelength Accuracy**  
**Internal Lamp Emission (according to Ph. No. 5.2 (2005))**

Peak Wavelength (nm)	485.0	656.1
Test Result (nm)	485.000	656.40
Error (nm)	-0.000	-0.200
Expanded uncertainty (nm)	0.000	0.200

**2. Stray Light**  
**Potassium Chloride 12g/l solution, traceable to NIST SRM 999:**

Wavelength (nm)	Specification (%)	%R (Transmittance)
255	< 0.05%	0.05%

**3. Photometric Accuracy**

Reference Material	UV200		UV50	
	222	231	227	231
Optical Density (OD)	0.9518	0.6478	0.9214	0.6789
%R	0.9500	0.6488	0.9493	0.6750
Error*	0.0018	0.0010	0.0021	0.0039
Expanded uncertainty	0.0020	0.0010	0.0020	0.0030

\* %R = Specified value - 2 \* %R = Test Result - 0.0100 \* 2.6 = 0.4

**Traceability:**  
 All calibration is performed with one of a series of reference materials. The reference material is tested and confirmed with a reference spectrophotometer. The instrument is tested and confirmed to perform to the manufacturer's written specification over the analytical range used for the reference material calibration.  
 The following reference and procedures are used in the quality performance procedures relating to the qualification of the spectrophotometer performance:  
 Absorbance: Small Quantity Assay glass filter/UV-2000 Reference to NIST SRM 920a  
 Potassium Dichromate 500 214.58 NIST SRM 924a  
 Wavelength: Reference Color Glass 520 23560 51 Traceable to NIST SRM 2034  
 Stray Light: Potassium Chloride NIST SRM 999c

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# UV-31 SCAN

## UV/Visible Spectrophotometer

190 – 1100 nm

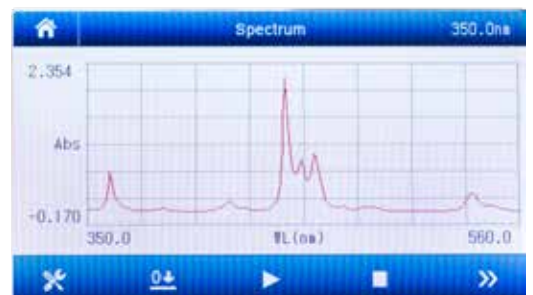
2 nm bandwidth

Scan speed 4200nm/min



**UV-31 Scan** is the complete scanning UV-Vis spectrophotometer, ideal for high level educational, the best choice in precision for your qualitative and quantitative analysis. High level of accuracy for sensible detections.

- *Low level of stray light for high linearity performance*
- *Photometry, quantitation, spectrum scan*
- *Self-calibration system at each switching on*
- *Preheating countdown*
- *USB flash drive for data and methods recovery*



Spectrum scan and detection of peaks

Part No.	Description
11000082	ONDA TOUCH UV-31 SCAN Spectrophotometer, TOUCH SCREEN color display, range 190 - 1100 nm, bandwidth 2 nm, single beam, flash memory USB port, multilanguage OS. Functions: photometric, quantitation, <b>SPECTRUM scan</b> , file management. Including <b>4 optical glass cells, 2 quartz cells</b> , 10mm 4-cell holder, power cable, dust cover, USB flash drive and <b>Calibration Report</b>



# V-11 SCAN

## Visible Spectrophotometer

320 – 1100 nm

4 nm bandwidth

Scan speed 4200nm/min



**V-11 Scan** is the scanning Visible spectrophotometer, ideal for high level colorimetric analysis, quantitative detections and qualitative control in the visible range.

- *Photometry, quantitation, spectrum scan*
- *Self-calibration system at each switching on*
- *Preheating countdown*
- *USB flash drive for data and methods recovery*



*Easy calibration with the online instructions*



Part No.	Description
11000062	ONDA TOUCH V-11 SCAN Spectrophotometer, TOUCH SCREEN color display, range 320 - 1100 nm, bandwidth 4 nm, single beam, flash memory USB port, multilanguage OS. Functions: photometric, quantitation, <b>SPECTRUM scan</b> , file management. Including <b>4 optical glass cells</b> , 10mm 4-cell holder, power cable, dust cover, USB flash drive and <b>Calibration Report</b>



# UV-21

## UV/Visible Spectrophotometer

195 – 1050 nm

4 nm bandwidth



**UV-21** is the UV-Vis spectrophotometer, ideal for routine analysis and quantitative detections. The functionality of **basic photometry** and **quantitation** make it the perfect instruments for fast and accurate analysis in many application fields.



Part No.	Description
11000072	ONDA TOUCH UV-21 Spectrophotometer, TOUCH SCREEN color display, range 195 - 1050 nm, bandwidth 4 nm, single beam, flash memory USB port, multilanguage OS. Functions: photometric, quantitation, file management. Including 4 optical glass cells, 2 quartz cells, 10mm 4-cell holder, power cable, dust cover, USB flash drive and Calibration Report



# V-10 Plus

## Visible Spectrophotometer

325 – 1000 nm

4 nm bandwidth







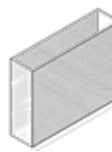

**V-10 Plus** is the Visible spectrophotometer for colorimetric application and routine measurements, widely used in basic photometry, **OD600** in microbiological application and wine color analysis. Solid design and high quality components ensures excellent performance.





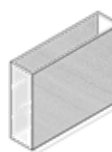

ONDA V-10 Plus is supplied with **Basic Software for PC** (Windows based OS) for the remote control of the device; the application range is expanded to **kinetic** measurement, improving data analysis and file management.







In combination with the optional **ONDA ProWine Color Software for PC** it is the best aid for fast and accurate color analysis of wine (**Chromatic Characteristics OIV-MA-AS2-07B**)

Part No.	Description
11000052	ONDA V-10 Plus Spectrophotometer, including: 4 optical glass cells, 4-position cell holder, power cable with EU plug, Basic PC software, dust cover, Calibration Report

# Cuvettes

<b>Optical glass 335 – 2500 nm</b>						
<b>Path length (mm)</b>	1	10	20	30	50	100
<b>External dimension WxLxH (mm)</b>	12.5x3.5x45	12.5x12.5x45	12.5x22.5x45	12.5x32.5x45	12.5x52.5x45	12.5x102.5x45
<b>Volume (ml)</b>	0.4	3.5	7.0	10.5	17.5	35.0
<b>Polished windows</b>	2	2	2	2	2	2
<b>Teflon lid</b>	✓	✓	✓	✓	✓	✓
<b>Number of cells</b>	2	4	4	4	4	4
<b>Part number</b>	<b>11000382</b>	<b>11000252</b>	<b>11000262</b>	<b>11000272</b>	<b>11000282</b>	<b>11000292</b>

<b>Quartz 190 – 2700 nm</b>						
<b>Path length (mm)</b>	1	10	20	30	50	100
<b>External dimension WxLxH (mm)</b>	12.5x3.5x45	12.5x12.5x45	12.5x22.5x45	12.5x32.5x45	12.5x52.5x45	12.5x102.5x45
<b>Volume (ml)</b>	0.4	3.5	7.0	10.5	17.5	35.0
<b>Polished windows</b>	2	2	2	2	2	2
<b>Teflon lid</b>	✓	✓	✓	✓	✓	✓
<b>Number of cells</b>	1	2	2	2	2	2
<b>Part number</b>	<b>11000522</b>	<b>11000302</b>	<b>11000312</b>	<b>11000322</b>	<b>11000332</b>	<b>11000342</b>

<b>Special cells</b>						
<b>Path length (mm)</b>	10	10	10	10	10	10
<b>External dimension WxLxH (mm)</b>	12.5x12.5x45	12.5x12.5x45	12.5x12.5x45	12.5x12.5x45	12.5x12.5x45	12.5x12.5x45
<b>Beam height (mm)</b>	15	15	15	15	15	15
<b>Volume (µl)</b>	100	200	500	1000 (1ml)	700	700
<b>Material</b>	Quartz	Quartz	Quartz	Quartz	Optical glass	Quartz
<b>Range (nm)</b>	190 -2700	190 -2700	190 -2700	190 -2700	335 -2500	190 -2700
<b>Flowing flux</b>	–	–	–	–	✓	✓
<b>Polished windows</b>	2	2	2	2	2	2
<b>Teflon lid</b>	✓	✓	✓	✓	–	–
<b>Number of cells</b>	1	1	1	1	1	1
<b>Part number</b>	<b>11000352</b>	<b>11000362</b>	<b>11000372</b>	<b>11000392</b>	<b>11000492</b>	<b>11000502</b>

In the following pages useful guide for choice of holder and accessories suitable for your spectrophotometer is provided.

### Software Pro-Wine Color for V-10 Plus

*Pro-Wine Color* is the application software based on Windows operating system for the remote control of **ONDA V-10 Plus Spectrophotometer**. The special application measures absorbance at 420nm, 520nm and 620nm, and calculates automatically Color Intensity and Shade, considering also a Dilution Factor.

#### Functions:

Photometry, Quantitative, *Kinetics*, *Multi wavelength*, *Wine Chromatic Analysis* (*Color Intensity and Shade compliance to OIV-MA-AS2-07B*)

#### Code to order:

**11000962**, including the Installer CD, USB cable, USB dongle key, User manual (the connection PC-instrument requires two USB port on PC)



	4 position for up to 50mm path	4 position for up to 100mm path	Single micro cell, 10mm path	Single test tube ø 8-24mm (max height 110mm)	5° Reflectance measurement	Solid sample (50x30x2mm)	8 position, automatic, 10mm path	5 position automatic Up to 100mm path	Test tube ø 16 mm
<b>UV-31 SCAN</b> 	✓	✓	✓	-	✓	✓	✓	✓	✓
<b>UV-21</b> 	✓	✓	✓	-	✓	✓	✓	✓	✓
<b>V-11 SCAN</b> 	✓	✓	✓	-	✓	✓	✓	✓	✓
<b>V-10 PLUS</b> 	✓	✓	✓	✓	✓	✓	-	-	-
<b>Part number</b>	11000212	11000222	11000232	11000402	11000412	11000422	11000242	11000432	11000532



## Software Easy UV for ONDA TOUCH Series

**Easy UV** is the application software based on Windows operating system for the remote control of **ONDA Touch Series instruments**. The application range, data analysis and file management function are greatly expanded, for example to clinical application (hemoglobin oxygen saturation) and basic biotechnology research (range DNA 0.2-70 µg/ml).

### Functions:

Photometry, Quantitative, **Kinetics**, **Multi wavelength**, Spectrum scan, **DNA/protein** (UV methods)

### Code to order:

**11000972**, including the Installer CD, USB cable, USB dongle key, User manual (the connection PC-instrument requires two USB port on PC)



A-101 Sipper (flowing system)	A-102 Peltier (Thermostatic system)	A-100 Sipper/Peltier (Thermostat flowing system)	Micro Printer (normal paper)	Thermal Printer	PC Software Pro-Wine Color	PC Software ONDA Touch Easy UV	IQ-OQ Paper Manual	Tungsten-Halogen lamp (VIS)	Deuterium lamp (UV)
✓	✓	✓	✓	-	-	✓	✓	✓	✓
✓	✓	✓	✓	-	-	✓	✓	✓	✓
✓	✓	✓	✓	-	-	✓	✓	✓	-
✓	-	-	-	✓	✓	-	✓	✓	-
11000462	11000472	11000482	11000442	11000452	11000962	11000972	11000192	11000912	11000922

In the following pages useful guide for choice of the appropriate holder suitable for different applications.

		4 position for up to 10mm path (standard)	4 position for up to 50mm path	4 position for up to 100mm path	Single micro cell, 10mm path
					
1mm path, 12.5x3.5x45mm		✓	-	-	-
10mm path, 12.5x12.5x45mm		✓	✓	✓	-
20mm path, 12.5x22.5x45mm		-	✓	✓	-
30mm path, 12.5x32.5x45mm		-	✓	✓	-
50mm path, 12.5x52.5x45mm		-	✓	✓	-
100mm path, 12.5x102.5x45mm		-	-	✓	-
Test tube ø16mm, 90mm height		-	-	-	-
Solid sample 50x30x2mm		-	-	-	-
Solid sample 20x20x4mm		-	-	-	-
Micro-cell 12.5x12.5x45mm		-	-	-	✓
Flow-cell 12.5x12.5x45mm		-	-	-	✓
Part Number		11000202	11000212	11000222	11000232

Single test tube ø 8-24mm (max height 110mm)	Test tube ø 16 mm	5° Reflectance attachement	Solid sample (50x30x2mm)	8 position, auto- matic, 10mm path	5 position, automatic, up to 100mm path
					
-	-	-	-	✓	-
-	-	-	-	✓	✓
-	-	-	-	-	✓
-	-	-	-	-	✓
-	-	-	-	-	✓
-	-	-	-	-	✓
✓	✓	-	-	-	-
-	-	-	✓	-	-
-	-	✓	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
11000402	11000532	11000412	11000422	11000242	11000432

# ONDA VIS AND UV/VIS SPECTROPHOTOMETERS

Technical Specification	UV-31 SCAN	UV-21	V-11 SCAN	V-10 PLUS
<b>Spectrophotometer</b>	UV-VIS		VIS	
<b>Optical system</b>	Single beam			
<b>Light source</b>	Tungsten-Halogen / Deuterium Lamps		Tungsten-Halogen	
<b>Detector</b>	Silicon photodiode			
<b>Spectral bandwidth (nm)</b>	2	4	4	4
<b>Wavelength range (nm)</b>	190 - 1100	195 - 1050	320 - 1100	325 - 1000
<b>Wavelength accuracy (nm)</b>	±0.8	±1.0	±1.0	±2
<b>Wavelength repeatability (nm)</b>	±0.2	±0.4	±0.2	±0.8
<b>Wavelength resolution (nm)</b>	0.1	0.1	0.1	0.1
<b>Photometric range</b>	-0.3 to 3 Abs / 0 to 200 %T / 0 to 9999.9 Conc			
<b>Photometric accuracy</b>	±0.5 %T at 0 - 100 %T			
<b>Photometric repeatability</b>	±0.2 %T at 0 - 100 %T			±0.3 %T at 0 - 100 %T
<b>Photometric resolution (Abs)</b>	0.001			
<b>Stability</b>	±0.002 Abs/hr (at 500nm after 2hours warmup)			
<b>Stray light</b>	<0.1 %T	<0.2 %T	<0.1 %T	<0.3 %T
<b>Display</b>	5 inches color touchscreen display, fixed, 480x272 px			LCD display 128x64 px
<b>Keypad</b>	touchscreen			Membrane keypad
<b>Standard cell holder</b>	4 positions, 10mm path square cells, manual holder			
<b>Sample compartment</b>	Accessible from top and front			Accessible from top
<b>Basic photometry</b>	✓	✓	✓	✓
<b>Quantitation</b>	✓	✓	✓	✓
<b>Spectrum scan</b>	✓	-	✓	-
<b>File management</b>	✓	✓	✓	-
<b>System management</b>	✓	✓	✓	-
<b>Performance verification</b>	✓	✓	✓	-
<b>Connectivity</b>	USB-A (flash drive) USB-B (PC connection) <sup>1</sup> RS-232 (printer) <sup>2</sup>			USB-B (PC connection) Serial port (printer) <sup>2</sup>
<b>Memory</b>	236 kB (internal memory) expandable with USB flash drive <sup>3</sup>			200 raw of data
<b>Languages</b>	English, Spanish, French, German, Italian, Portuguese			English
<b>Dimensions WxDxH (mm)</b>	456 x 360 x 185			490 x 360 x 210
<b>Weight (kg)</b>	10.7		10.5	12
<b>Power supply</b>	100 - 240 V AC, 50/60 Hz			
<b>Power consumption (W)</b>	120		75	
<b>Warranty</b>	2 years <sup>4</sup>			
<b>Part number</b>	<b>11000082</b>	<b>11000072</b>	<b>11000062</b>	<b>11000052</b>

<sup>1</sup> Optional PC software required

<sup>2</sup> Optional thermal printer required

<sup>3</sup> USB flash drive included with ONDA Touch series

<sup>4</sup> On electronic and optical part (light source excluded)

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**ISO 9001**