

**PENTAX**

# R-400V Series

CAPTURE THE FULL PICTURE!

R-400V | R-400VDN **VISIO**



**PENTAX**

## R-400V Series



- 400m reflectorless EDM range
- USB, SD connection
- Dual axis compensator 3" and 5" models
- Triple axis compensator 2" model
- Adjustable laser plummet

### INCREASED PRODUCTIVITY / FASTER TURNAROUND

#### CONNECTIVITY

The measured data and detailed pictures taken can easily be transferred to a PC via USB cable, SD card or RS-232C interface for possible further processing and printing if needed, allowing immediate feedback.

#### CUSTOMISATION

Depending on your need (of the moment) you can adapt the settings of your V-325DN by flipping a toggle; you can easily switch to image capturing mode.



**PENTAX**

# R-400VDN Series *VISIO*



**3.1**  
MEGA  
PIXELS



- 400m reflectorless EDM range
- Effective 3.1 MP camera
- USB, SD connection
- Dual axis compensator 3" and 5" models
- Adjustable laser plummet



## Technical Specifications Digital Camera R-400VDN Series

Model	R-423VDN	R-425VDN
<b>Digital Camera(DSC)</b>	CMOS 3.1 megapixels	
Sensor	2048x1536 / 1600x1200 / 1280x960 / 640x480	
Image resolution	1.5" Color TFT 34mm x 24 mm (502x240 dot.)	
LCD	-2EV~+2EV ( 0.5EV step )	
EV compensation	Auto/Daylight/Light Bulb/Fluorescent/Cloudy	
WhiteBalance	100/200/400	
ISO Sensitivity	JPEG ( FQ:1/4, NQ:1/8, EQ:1/16 )	
File format	DCF(Ver1.0) / FAT16	
File management	1x / 2x / 3x	
Digital zoom	Yes	
Play back function	SD ( up to 1GB )	
External memory	50mm	
Focus length	20m ~ ∞ (fixed focus length)	
Focus range	8.8°	
Field of view	f/5.6	
Effective Diameter	USB 2.0	
I/F	Internal (Supplied from TS battery)	
Power		





# UPGRADE YOUR R-400

Upgrade kit digital camera module



R-400V



R-400VDN

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## R-400VDN



### 2=1 DUAL FUNCTION

Communicate and collaborate without ambiguity

Data measurements can be misinterpreted by anyone, from office team members to clients. And changes due to poor communication become exponentially more expensive with each step in the project's development. The R-400VDN total station combines a non-prism total station with an advanced 3.1-megapixel digital camera, enabling you to visualise the points measured. Detailed pictures made with the Pentax Visio Total Station enable all to accurately review the actual situation at the time of measurement – helping catch possible mistakes in the process. Detailed pictures provide immediate visual feedback.

#### SIMPLY MEASURING

##### MEASURE

Rectangular and polar data can easily be recorded at the same time. All data is saved to the SD card in CSV format, ready to use on your PC.

##### CAPTURE

The point mark can easily be placed on the measured point, just like operating a digital camera. The colour of the point mark can be changed depending on the image to increase its visibility.

##### ANALYSE & COMPARE

The point attributes and the measurement values can be superimposed as a layer on the image captured. All recorded data is now shown on one image, combining the imaging and measuring functionalities of the R-400VDN.



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# R-400VDN applications

## VERIFIABILITY with geotagged photo of the target



Accident Investigation



Archaeology & Palaeontology



Architecture & Cultural Heritage



Forensic & Crime Scene Investigation



Geology



Surveying



Infrastructure & Road construction



General Construction

The R-400VDN goes one step beyond the competition for verifiable results: each location capture results in a digital image that displays exactly what the user was viewing and targeting at the time of measurement. This provides an extra level of verification and eliminates potential confusion over data and their associated targets.



Quarrying



Stockpiles

### KEY FEATURES

3.1  
MEGA  
PIXELS

3x  
DIG  
ZOOM

INTERNAL  
MEMORY

45.000 pt

SUPERIMPOSE  
FUNCTION

ALPHANUMERIC  
KEYBOARD

USER-  
FRIENDLY  
ON-BOARD  
SOFTWARE  
POWER  
TOPO LITE



Model	R-422VN	R-423VN	R-425VN	R-435VN	R-423VDN	R-425VDN
<b>Telescope</b>	Magnification	30 x				
	Effective aperture	45mm (EDM45mm)				
	Resolving power	3.0"				
	Field of view	2.6 % (1° 30')				
	Minimum focus	1.0 m				
	Focus	Manual				
<b>Distance measurement</b>	Laser Class	Visible laser: Class III a (3R) (Reflectorless) / Class II (2) (Prism, sheet)				
<b>Measurement range (Good conditions) (*3)</b>	Reflectorless (*1)	1.5 ~ 400 m				
	Reflector sheet (*2)	1.5 ~ 600 m (800 m)				
	Mini Prism	1.5 ~ 1,600 m (2,000 m)				
	1 P	1.5 ~ 5,500 m (7,000 m)				
	3 P	1.5 ~ 7,000 m (9,000 m)				
<b>Accuracy</b>	Prism / Reflector sheet	1.5 ~ 10 m: ± (3 + 2 ppm x D) mm / 10 m ~: ± (2 + 2 ppm x D) mm, Quick: ± (3+2ppmxD) mm (*5)				
	Reflectorless	1.5 ~ 300 m: ± (5 + 2 ppm x D) mm / 300 m ~: ± (7 + 10 ppm x D) mm				
	Minimum count	0.1 mm (Fine mode) / 1 mm (Normal mode) / 10mm (Track mode)				
<b>Measuring time (*4)</b>	Repeat meas. Normal (1 mm)	Prism / Reflector sheet 2.0 sec - Reflectorless 2.0 sec				
	Quick (1 mm)	Prism / Reflector sheet 1.2 sec (*5)				
	Track (10 mm)	Prism / Reflector sheet 0.4 sec - Reflectorless 0.4 sec				
	Initial meas. Normal (1 mm)	Prism / Reflector sheet 2.5 sec - Reflectorless 2.4 sec				
	Quick (1 mm)	Prism / Reflector sheet 1.7 sec (*5)				
	Track (10 mm)	Prism / Reflector sheet 2.5 sec - Reflectorless 2.5 sec				
<b>Angle measurement</b>	Measurement method	Absolute rotary encoder				
	Direction method	Vertical / Horizontal angle: 2 sides		Vertical / Horizontal angle: 1 side		V/H angle: 2 sides / V/H angle: 1 side
	Minimum count	1" / 5" selectable				
	Accuracy (ISO 17123-3)	2"	3"	5"	3"	5"
<b>Compensator</b>	3 Axis		2 Axis			
<b>Target screw</b>	1 speed					
<b>Sensitivity of vials</b>	Plate level	30" / 1 mm			30" / 2 mm	
	Circular level	8' / 2 mm				
<b>Plummet</b>	Laser Plummet					
<b>Base</b>	Detachable		Shifting		Detachable	
<b>Dust &amp; water resistance</b>	IP56 (instrument only)					
<b>Ambient temperature</b>	-20°C ~ +50°C / -4°F ~ 122°F (working range)					
<b>Tripod thread</b>	5/8" x 11		35 mm P2		5/8" x 11	
<b>Dimensions / Weight</b>	Dimensions	180 (W) x 342 (H) x 177 (L) mm				
	Weight (incl. battery)	5.7 kg			5.5 kg	
	Carrying case	250 (W) x 365 (H) x 425 (L) mm				
<b>Battery pack</b>	Power source	Ni-MH 4300 mAh (rechargeable) DC 6.0 V				
	Operation time	Approx. 7.0 hrs (ETH + EDM) / 15 hrs (ETH) with approx. 2.2 hrs of charging time				
	Weight	380 g				
<b>Battery charger and AC adapter</b>	Input Voltage	AC 100 ~ 240 V				
	Output Voltage	DC 7.5 V				
	Weight	280 g				
<b>Data Process</b>	Data recording method	Internal Memory				
	Coordinates data (*6)	45,000				
	Special function	PowerTopoLite		PowerTopoLite + DSC		
	I / F	RS-232C, SD CARD, USB				
<b>Display / keyboard</b>	Display type	Graphic LCD / 20 characters x 8 lines / 240 x 96 pixels				
	Quantity	1 (2nd optional)				
	Keys	22 each (12 numeric / 5 function / 5 special)				
	Display back light	Intensity settings: 10 steps				
<b>Laser Pointer</b>	Yes					
<b>Date clock</b>	Yes					

- \*1 The measurement range and accuracy of reflectorless, and time required to measure may vary by the shape, size of surface area and reflection rate of the target and its environment. The measurement range of reflectorless is determined by the white side of the Kodak Gray Card.  
(KODAK is a trademark of Eastman Kodak Company)
- \*2 Reflector sheet: PENTAX genuine Reflector sheet
- \*3 The measurement range may vary by conditions of the environment.  
Normal conditions: 20km visibility with slight shimmer Good conditions: 40km visibility, overcast, no heat, no shimmer and moderate wind.
- \*4 EDM measuring time is determined in good conditions. It may take longer than usual to measure the distance exceeding 400m in prism mode and 300m in reflectorless mode.  
Also the measurement time in reflectorless mode is influenced by the share, size and surface area and reflection rate of the target and its environment.
- \*5 Quick mode, which functions with prism and reflector sheet, is effective only under normal mode (1mm) and up to 500m.
- \*6 Number of points to be recorded may vary by usage.  
Maximum number of point to be recorded per job site: 3000 points  
Maximum number of job file to be recorded: 50 job files  
Maximum data points to be sent from PC to the instrument: 3000 points

You should be able to use any SD card in your camera.  
While Pentax does not guarantee compatibility with any particular manufacturer or model, we have seen consistent compatibility with SD cards from Panasonic (1GB), SanDisk (1GB), and Toshiba (1GB)

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**DANGER**  
LASER RADIATION - DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENT INTO SUNLIGHT.  
620-690 nm/4.75mW max.  
CLASS IIIa LASER PRODUCT  
Laserclass IIIa, conform FDA 21 CFR Ch. 1 § 1040

**CAUTION**  
LASER RADIATION - DO NOT STARE INTO BEAM  
620-690 nm/0.95mW max.  
CLASS II LASER PRODUCT  
Laserclass II, conform FDA 21 CFR Ch. 1 § 1040



The CE marking assures that this product complies with the requirements of the EC directive for safety.



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