

**PENTAX**

**R-400VDN Series *VISIO***

CAPTURE THE FULL PICTURE!

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



**2=1**  
DUAL FUNCTION





**PENTAX**

**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**

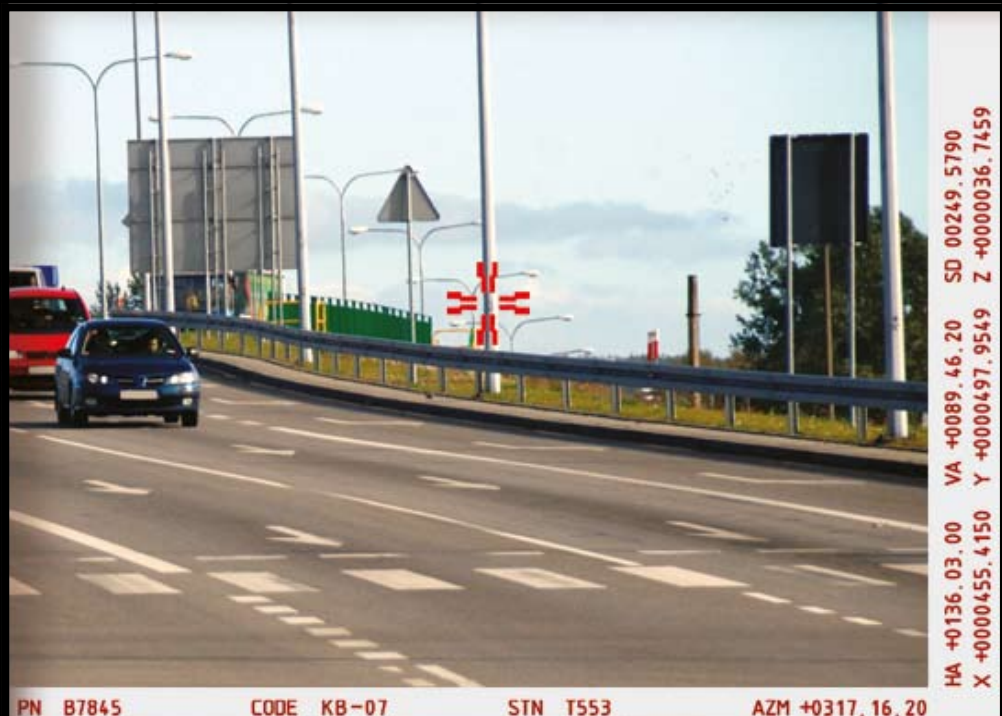
The point mark can easily be placed on the measured point, just like operating a digital camera.

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.



# PENTAX

# R-400VDN applications

## VERIFIABILITY with geotagged photo of the target



Accident Investigation



Archaeology & Palaeontology



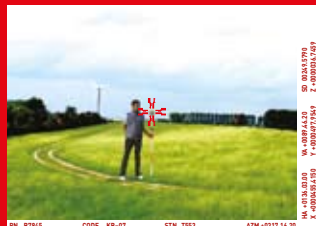
Architecture & Cultural Heritage



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.

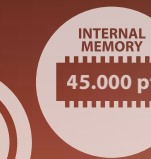


Quarrying



Stockpiles

### KEY FEATURES



### Technical Specifications Digital Camera R-400VDN Series

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



Model	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>	Visible laser: Class III a (3R) (Reflectorless) / Class II (2) (Prism, sheet)	
<b>Measurement range</b> (Good conditions) (*3)	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</b> (*4)	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
	Minimum count	1" / 5" selectable
	Accuracy (ISO 17123-3)	3" 5"
<b>Compensator</b>	2 Axis	
<b>Target screw</b>	1 speed	
<b>Sensitivity of vials</b>	Plate level	30" / 2 mm
	Circular level	8' / 2 mm
<b>Plummet</b>	Laser Plummet	
<b>Base</b>	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	
<b>Dimensions / Weight</b>	Dimensions	180 (W) x 342 (H) x 177 (L) mm
	Weight (incl. battery)	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 + 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 4000m in prism mode and 300m in reflectorless mode. Also the measurement time in reflectorless mode is influenced by the shape, 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

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

