

# Nivo C Series Total Station



## Datasheet



## Nikon Quality

### Specifications:

- 1", 2", 3" and 5" angle accuracies
- Survey Pro, Survey Basic with Roads and Layout Pro software
- Prism and reflectorless modes
- Long-lasting, hot swappable batteries
- Laser pointer
- Optional laser plummet
- Windows CE color touch screen
- Bluetooth

## Nikon Nivo™ C Series

The Nivo C series total stations are complete, economical and easy-to-use solutions. Additionally, they offer the versatility of three field software options to choose from. Advanced Survey Pro field software and easy to use Survey Basic with Roads software both come pre-installed. Layout Pro field software can also be loaded for construction based layout work.

The simple-to-use Nikon Nivo C is available in several models - 1", 2", 3" and 5" - designed to meet your specific needs. Nikon Nivo C total stations can measure up to 500 m (1,640 ft.) without a prism. For extended operating time in the field, Nikon Nivo C total stations come with two hot swappable batteries. Nikon's legendary optics enable you to work under all conditions to obtain results that meet your needs: more detail and less distortion, especially over long distances and in low light conditions.

All Nivo C models support Bluetooth communications for peripherals, such as data collectors, and come standard with coaxial laser pointers and a traditional optical plummet, which can be upgraded to a laser plummet. Data transfer is fast, easy and portable with a USB key.

### Nikon Nivo C: Foolproof



# Nivo C Series Total Station

## Distance measurement

- Range with Nikon specified prisms (Good conditions<sup>2</sup>)
  - With reflector sheet (5 cm x 5 cm):
    - Nivo 1.C, Nivo 2.C: 1.5 m to 270 m
    - Nivo 3.C, Nivo 5.C: 1.5 m to 300 m
  - With single prism 6.25 cm Nivo 1.C, Nivo 2.C: 1.5 m to 3,000 m Nivo 3.C, Nivo 5.C: 1.5 m to 5,000 m
- Range reflectorless mode<sup>1</sup>
  - Nivo 1.C, Nivo 2.C
    - KGC (18%)<sup>1</sup>
      - Good<sup>2</sup>: 350 m (1,148 feet)
      - Normal<sup>3</sup>: 350 m (1,148 feet)
      - Difficult<sup>4</sup>: 200 m (650 feet)
    - KGC (90%)<sup>1</sup>
      - Good<sup>2</sup>: 500 m (1,640 feet)
      - Normal<sup>3</sup>: 400 m (1,312 feet)
      - Difficult<sup>4</sup>: 250 m (820 feet)
  - Nivo 3.C, Nivo 5.C.
    - KGC (18%)<sup>1</sup>
      - Good<sup>2</sup>: 280 m (820 feet)
      - Normal<sup>3</sup>: 250 m (820 feet)
      - Difficult<sup>4</sup>: 200 m (650 feet)
    - KGC (90%)<sup>1</sup>
      - Good<sup>2</sup>: 500 m (1,640 feet)
      - Normal<sup>3</sup>: 500 m (1,640 feet)
      - Difficult<sup>4</sup>: 300 m (984 feet)
  - Shortest possible range: 1.5 m (4.9 ft.)
- Accuracy<sup>5</sup> (Precise mode) ISO 17123-4
  - Prism:  $\pm(2+2 \text{ ppm} \times D)$  mm
  - Reflectorless:  $(3+2 \text{ ppm} \times D)$  mm
- Measuring interval<sup>6</sup>
  - Nivo 1.C, Nivo 2.C
    - Prism mode
      - Precise mode: 1.7 s
      - Normal mode: 0.8 s
    - Reflectorless mode<sup>7</sup>
      - Precise mode: 2.1 s
      - Normal mode: 1.2 s
  - Nivo 3.C, Nivo 5.C
    - Prism mode
      - Precise mode: 1.5 s
      - Normal mode: 0.8 s
    - Reflectorless mode<sup>7</sup>
      - Precise mode: 1.8 s
      - Normal mode: 1.0 s
- Least count: 1 mm 10 mm

## Angle Measurement

- ISO 17123-3 Accuracy (horizontal and vertical): 1"/0.3 mgon Nivo 1.C 2"/0.6 mgon Nivo 2.C; 3"/1 mgon Nivo 3.C; 5"/1.5 mgon Nivo 5.C
- Reading system: Absolute encoder
- Circle diameter: 62 mm (2.4 in)
- Horizontal/Vertical angle: Diametrical

- Minimum increment
  - Nivo 1.C: Degree: 0.5"; Gon: 0.1 mgon
  - Nivo 2.C, Nivo 3.C, Nivo 5.C: Degree: 1"; Gon: 0.1 mgon

## Telescope

- Tube length: 125 mm (4.9 in)
- Image: Erect
- Magnification: 30x (18x/36x with optional eyepieces)
- Effective diameter of objective:
  - Nivo 1.C, Nivo 2.C: 40 mm (1.6 in)
  - Nivo 3.C, Nivo 5.C: 45 mm (1.7 in)
- EDM diameter:
  - Nivo 1.C, Nivo 2.C: 45 mm (1.7 in)
  - Nivo 3.C, Nivo 5.C: 50 mm (1.9 in)
- Field of view: 1°20'
- Resolving power: 3"
- Minimum focusing distance: 1.5 m (4.9 ft.)
- Laser Pointer: Coaxial Red Light

## General Specifications

- Level vials
  - Sensitivity of circular level vial: 10"/2 mm
- Optical plummet
  - Image: Erect
  - Magnification: 3x
  - Field of view: 5°
  - Focusing range: 0.5 m to  $\infty$
- Display:
  - Left display face: QVGA, 16 bit color, TFT LCD, backlit (320x240 pixel)
  - Right display face: Backlit, graphic LCD (128x64 pixel)
- Laser plummet (optional): 4 levels
- Memory: 128 MB RAM, 1 GB Flash memory
- Processor: Marvell PXA300 XScale 624 MHz
- Dimensions (W x D x H): 149 mm x 145 mm x 306 mm (5.8 in x 5.7 in x 12.0 in)
- Weight (approx.)
  - Nivo 1.C, Nivo 2.C Main unit (without batteries): 3.9 kg (8.6 lb)
  - Nivo 3.C, Nivo 5.C Main Unit (without batteries): 3.8 kg (8.4 lb)
  - Battery: 0.1 kg (0.2 lb)
  - Carrying case: 2.3 kg (5.1 lb)

## Power

- Internal Li-ion battery (x2)
- Output voltage: 3.8 V DC
- Operating time<sup>8</sup>
  - Nivo 1.C, Nivo 2.C
    - approx. 12 hours (continuous distance/angle measurement)
    - approx. 26 hours (distance/angle measurement every 30 s)
  - Nivo 3.C, Nivo 5.C
    - approx. 28 hours (continuous angle measurement)

- Nivo 3.C, Nivo 5.C
  - approx. 7.5 hours (continuous distance/angle measurement)
  - approx. 16 hours (distance/angle measurement every 30 s)
  - approx. 20 hours (continuous angle measurement)
- Charging time: Full charge - 4 hours

## Tilt Sensor

- Type: Dual-axis
- Method: Liquid-electric detection
- Compensation range:  $\pm 3.5'$

## Communications

- Communication ports: 1 x serial (RS-232C), 2 x USB (host and client)
- Wireless communications: Integrated Bluetooth

## Environmental Conditions

- Operating temperature range: -20 °C to +50 °C
- Storage temperature: -25 °C to +60 °C
- Atmospheric correction
  - Temperature range: -40 °C to +60 °C
  - Barometric pressure: 400 mmHg to 999 mmHg/533 hPa to 1,332 hPa/15.8 inHg to 39.3 inHg
- Dust and water protection: IP66 (Nivo 1.C IP56)

## Certification

- Class B Part 15 FCC certification, CE Mark approval. C-Tick.
- Laser safety IEC 60825-1 am2:2007
- Prism mode: Class 1 laser
- Laser plummet (optional): Class 2 laser
- Nivo 1.C, Nivo 2.C Reflectorless / Laser Pointer: Class 3R laser
- Nivo 3.C, Nivo 5.C Reflectorless / Class 1 laser
- Nivo 3.C, Nivo 5.C Laser Pointer: Class 2 laser

- (1) Measuring distance may vary depending on targets and measuring conditions.
- (2) Good conditions (good visibility, overcast, twilight, underground, low ambient light).
- (3) Normal conditions (normal visibility, object in the shadow, moderate ambient light).
- (4) Difficult conditions (haze, object in direct sunlight, high ambient light).
- (5)  $\pm(3+3 \text{ ppm} \times D)$  mm -20 °C to -10 °C, +40 °C to +50 °C
- (6) Measuring time may vary depending on measuring distance and conditions. For the initial measurement, it may take a few more seconds.
- (7) Battery life specification at 25 °C. Operation time may be shorter in low temperatures or if the battery is not new.
- (8) Kodak Gray Card, Catalog number E1527795.

Specifications are subject to change without prior notice. Bluetooth type approvals are country specific.

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