STANDARDS
ASTM D 36, IP 58, EN ISO 1427 and related methods.

SCOPE
This test method covers the determination of the softening point of bitumen in the range from 30 to 157°C using the ring-and-ball apparatus immersed in distilled water or USP glycerin (above 80 to 157°C). Bitumens are viscoelastic materials without sharply defined melting points; they gradually become softer and less viscous as the temperature rises.
NBA 450 is a softening point tester developed by Normalab. Normalab has been designing and manufacturing petroleum testing instruments and glassware since 1963.

- 3 rear USB ports
- 1 front USB port for update
- 1 LAN port
- 1 RS232C port

SPECIFICATIONS
- Test temperature range: 0 to 200°C
- Smaller footprint - Compact instrument
- Automatic detection of softening point by optical cells
- Easy handling of the ball with the grip
- User-friendly software
- 4 preset methods
- Controlled heating rate and stirring speeds
- Cooling by fan at the end of the test
- Fast cooling in less than 20 minutes
- Capacitive touch screen
- Easier positioning of the beaker in the heating block
- Stainless steel tray for easy handling of accessories
- Centering system for better positioning of the beaker

CONNECTIVITY
- 3 rear USB ports
- 1 front USB port for update
- 1 LAN port
- 1 RS232C port
SAFETY FEATURES

- User access
- Sample overheating protection
- Audible alarm
- Heating sensors
- Probe safety sensor
- Waterproof heater
- Hardware security in case of software crash to avoid all risks

ACCESSORIES

- Positioning and centering tools
- Magnetic stirrer
- Different types of rings (optional)
- Printer (optional)

SOFTWARE FEATURES

- Backup via USB connectors
- USB upgrade
- Possibility to connect a keyboard, a mouse, a barcode reader and a printer
- Lifetime data storage - 320 Go HDD
- Report fully settable
- Friendly software interface

EASY CONFIGURATION

Our NBA 450 is user-friendly with its digital screen and the quick access keypad. You can easily program the parameters. The integrated software allows you to:

- Export data through USB, LIMS, PDF or e-mails.
- Set user and password
- Transfer the select result on local printer
- Configure product files
Fully automatic analyzer of softening point with the ring and ball method

**NBA 450** is a reliable and resistant instrument designed in the legacy of the previous model. It is operable through integrated touch screen and offers the possibility to test bitumen, waxes, resins...

**Scope of delivery:**
NBA 450 is delivered ready to use with:
- 2 standardized beakers (P/N 17487)
- 10 shouldered rings (P/N 20765)
- 10 balls (P/N 20766)
- Holder (P/N 60703)
- Pt 100 probe (P/N 40139)
- Magnetic and mechanical stirrer
- Magnetic tool (P/N 60705)
- Modeling plate (P/N 60706)

**Site requirements:**
- Power supply: AC 230 V, 50 Hz - 4 A
- Dimension: (W) 260x (D) 535 x (H) 500 mm
- Weight: 20 kg

**SUMMARY**

<table>
<thead>
<tr>
<th>Operating temperature</th>
<th>Temperature range</th>
<th>Temperature unit</th>
<th>Temperature measurement</th>
<th>Detection</th>
<th>Stirring speeds</th>
<th>Cooling system</th>
<th>Data Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>+5 to + 30 ° C</td>
<td>0 to + 200 ° C</td>
<td>° C or ° F</td>
<td>Pt 100 Probe</td>
<td>Optical</td>
<td>From 0 to 250 rpm</td>
<td>Mechanical ventilation</td>
<td>320 Go HDD</td>
</tr>
</tbody>
</table>

**ORDERING INFORMATION**

**NORMALAB**

www.normalab.com

CONTACT : sales@normalab.com

Normalab FRANCE SAS
ZA Caux Multipôles 1 - 76190 Valliquerville
Tel. : +33 232.700.100
Fax : +33 232.704.732

**DISTRIBUTED BY**

G-Labo Germany
Bgm.-Horneffstr.26
69509 Mörlenbach
Tel.: + 49 6209 797100
Fax: + 49 6209 797101
Mail: info@g-labo.de
Web: www.g-labo.de