

# NEPTUNE 803 BY N.I.R.A.

EQUIPMENT TYPE:	MATERIALS:	WEIGHT:	DIMENSIONS:
Material Property	Plastic Film, Paper, Foil, Non Woven, Adhesives & Labels, Resins, Tissue	40kg	500x600x400mm

## PRODUCT OVERVIEW

Manufactured by N.I.R.A., the Neptune 803 is a bench-top fast residual solvent analyser for flexible packaging. It helps users to keep solvent levels in single- or multi-layer films within acceptable limits. A high concentration of residual solvent can cause unpleasant odours in packaging, alter the taste of food and beverages, ruin graphics (e.g. by blocking rolls), and reduce mechanical capabilities (e.g. by causing delamination).

Compliant with **EN 13628** and **ASTM 1884**, the Neptune 803 is designed to allow production teams to correct their processes in real time, promoting the shift towards faster, production-integrated quality control.

## KEY BENEFITS

Suitable for harsh, solvent-polluted environments like production areas, eliminating laboratory wait times and ensuring constant in-house QC.

Faster testing than traditional gas chromatography, reducing the typical 45 - 50 minute response time to 7 - 14.

Receiving results in real time supports speedier intervention and process corrections, minimising waste and time spent reworking products.

Low maintenance as calibration checks are only required every 6 months. Service visit recommended annually.

Easy operation via touchscreen, updated software interface, and downloadable reports (CSV or PDF). Minimal training required to use.



Front angle of the Neptune 803.

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### SPECIFICATIONS

Technical characteristics include:

<b>Incubation time:</b>	5, 10, 30 minutes.
<b>Operating temp:</b>	10 + 40°C.
<b>Incubation temp:</b>	from 50°C to 150°C (+/- 0.1°C).
<b>High precision thermostatic chamber:</b>	from 50°C to 150°C (+/- 0.1°C).
<b>Measuring range (Ethyl Acetate):</b>	0 - 135mg/m <sup>2</sup> , 0 - 1.5µl.
<b>Minimum detectable level (Ethyl Acetate):</b>	0.1mg/m <sup>2</sup> .
<b>Accuracy:</b>	+/- 1%.
<b>Calibration frequency:</b>	6 months (under standard conditions).
<b>Response time (single printed films):</b>	7 minutes.
<b>Response time (laminated films):</b>	12 minutes.
<b>Minimum requirements for hydrogen gas:</b>	99.995% (grade 4.5).
<b>Hydrogen consumption and pressure:</b>	40ml/minute, 3 bar.
<b>Minimum air requirements (zero air):</b>	99.999% (grade 5.0).
<b>Air consumption and pressure:</b>	800ml/minute, 5 bar.
<b>User interface:</b>	10.5" colour touchscreen.
<b>Outputs:</b>	2 x USB outputs, 1 x RJ45 Ethernet output.
<b>Power supply:</b>	230 Vac 50/60 Hz (120 Vac).
<b>Remote online services:</b>	Team Viewer.

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## NEW FEATURES

**Exclusive headspace "pulse" washing system:** supports a cleaner chamber between tests, more accurate readings, reduced risk of false positives or inflated solvent values, and eliminates the need for complex sample preparation and transfer lines.

**Full electronic pressure control:** no more manual adjustments needed.

**Ultra-sensitive self-heated FID detector:** a production-optimised version of a classic gas chromatography detector, tailored to varying ambient conditions in factories.

**Multiple incubation options:** amend parameters to better suit the materials and solvents.

**Windows operating system:** a user-friendly interface for seamless data handling/export.

**Automatic self-diagnostic:** anomalies are recorded 24/7.

**Uses known volume (loop) sampling:** removes the need for a mechanical moving part, empowering greater analytical stability over time and reducing maintenance demands.

## GLOBAL STANDARDS

**EN 13628:** specifies the methods to determine residual solvents in mono- or multi-layered flexible packaging materials (films, paper, foils), using gas chromatography, generally for amounts  $>0.5\text{mg}/\text{m}^2$ .

**ASTM 1884:** specifies the method for determining residual organic solvents in packaging materials, using gas chromatography.


## HOW TO USE IT

Cut a film sample and insert into the headspace. Select the test method on the touchscreen, including incubation time and temperature. The sample is heated to release residual solvents, then a vapour is injected into its internal gas chromatograph. The flame ionisation detector (FID) measures solvent levels, and results are displayed within minutes. The system cleans itself between tests using pulse washing, and data can be saved or exported for quality control and reporting.

Have any questions? Contact RDM for more information:

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