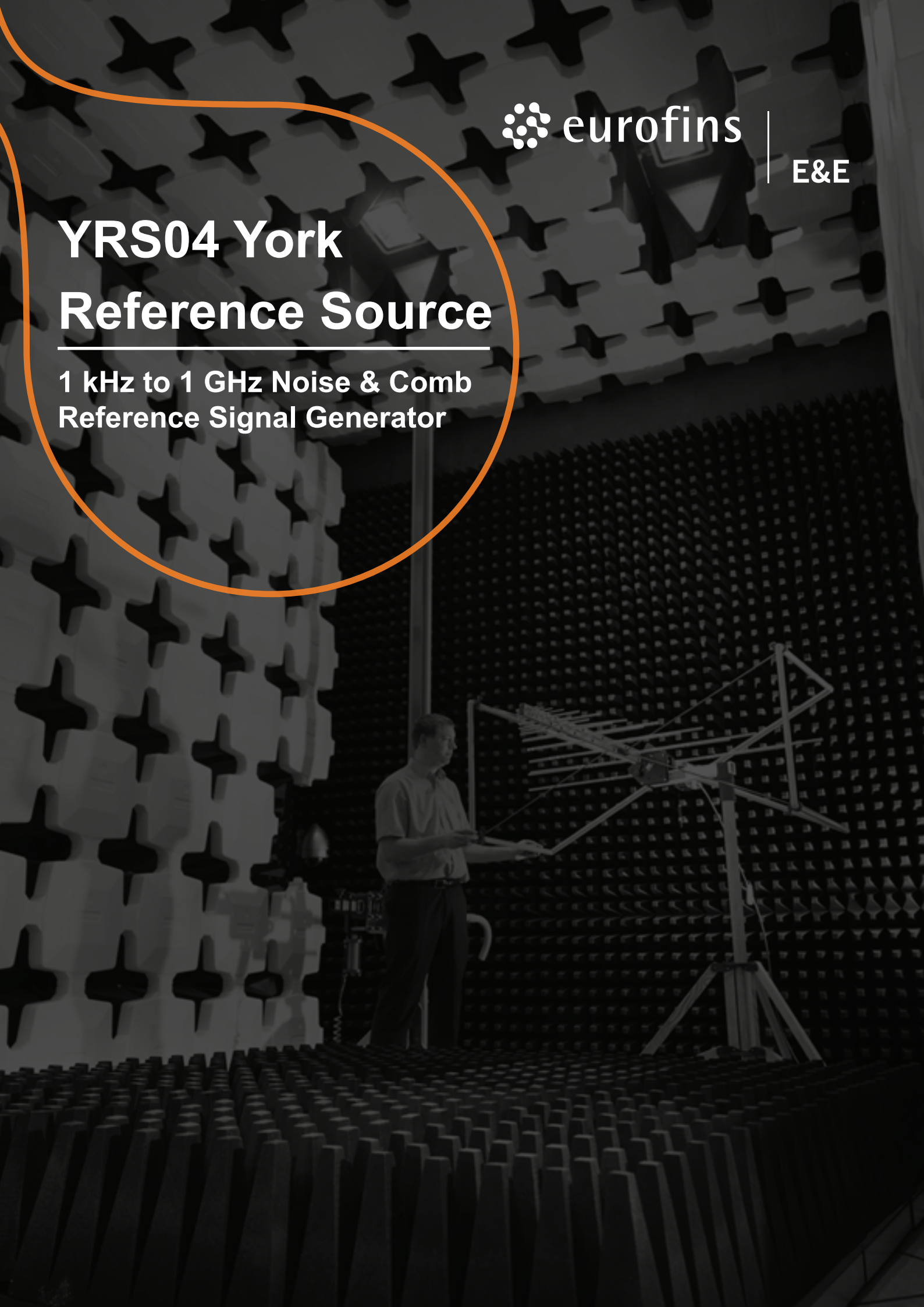
eurofins | E&E

# YRS04 York Reference Source

## 1 kHz to 1 GHz Noise & Comb Reference Signal Generator



eurofins | E&E

**The YRS04 is a Noise and Comb reference noise generator, capable of outputting over a frequency range of 1 kHz to 1 GHz**

**It is the ideal reference source for carrying out the verification and validation of conducted and radiated measurement systems as well as in the investigation and characterisation of measurement environments such as Fully- or Semi-Anechoic chambers, Open Area Test Sites.**

## Overview

The YRS04 is one of Eurofins E&E UK's latest line of noise and comb reference sources, building on more than 30 years experience of producing quality signal reference sources for EMC test laboratories.

The YRS04 can generate output signals covering 1 kHz to 1 GHz and combines both noise and comb signal capabilities in a single device.

The YRS04 is battery-powered for standalone operation without additional power cables, and features dual 50 Ω N-type output connectors for direct connection to conducted measurement systems.

For conducted emission test systems, the optional NIA02 is a direct-coupling adapter providing an IEC 320 inlet for single-phase LISNs and a selection of 4 mm connections for general-purpose test applications.

A configurable monopole antenna is available, allowing the YRS04 to be used as a standalone reference radiating source in an electromagnetic test electromagnetic test environment or radiated emission test system such as a Fully- or Semi-Anechoic Room.

The YRS05 is compact, with its small size and shape designed to produce a uniform radiated field.

## Features

- 1 kHz to 1 GHz output
  - Applications across a broad spectrum of uses
- Stable output
  - Repeatable measurements
- Selectable noise or comb output
  - Flexibility across a range of applications
- Compact and portable
  - 85 x 85 x 85 mm, 0.8 kg
- Battery power supply
  - No power cable effects on measurements

## Applications

- Conducted and radiated measurement systems validation and verification
- Investigation and characterisation of different measurement environments such as Fully- or Semi-Anechoic chambers, Open Area Test Sites
- Reference source for:
  - Regular pre-test checks as required to satisfy accreditation authorities and standards such as ISO 17025, DEF STAN 59-411
  - Comparisons between test sites
  - Long-term performance monitoring
  - Investigation of screened room behaviour
  - Cable loss measurements
- Evaluating component assembly characteristics e.g. filter loss, amplifier gain and bandwidth
- Spectrum analyser, receiver, antenna, and cable pre-checks
- Inter-laboratory and Proficiency Test programs

## YRS04 Specifications

### General

| | | |
|---|---|---|
| **Frequency range** | 1 kHz to 1 GHz direct connection into 50 Ω system<br>100 kHz to 1 GHz radiated using MON04 antenna | |
| **Temperature Stability** | < +/- 1 dB, 1 kHz to 1 GHz, at an ambient of 15°C to 30°C<br>< +/- 1.5 dB, 1 kHz to 1 GHz, at an ambient of 5°C to 40°C | |
| **Time Stability** | < 1dB | typical over 12 month period |

### Noise Modes

| | | |
|---|---|---|
| **Output Level** | see Graphs | |
| **Operating Time** | > 10 hours<br>> 6 hours | LF Noise mode typical with alkaline cells<br>HF Noise mode typical with alkaline cells |

### Comb Modes

| | | | |
|---|---|---|---|
| **Comb Signal Step Size** | LF Comb mode 1<br>LF Comb mode 2<br>LF Comb mode 3<br>HF Comb mode 1<br>HF Comb mode 2 | 1 kHz comb<br>10 kHz comb<br>100 kHz comb<br>1 MHz comb<br>10 MHz comb | 1 kHz, 2 kHz.....500 kHz<br>10 kHz, 20 kHz.....5 MHz<br>100 kHz, 200 kHz...30 MHz<br>1 MHz, 2 MHz.....300 MHz<br>10 MHz, 20 MHz.....1 GHz |
| **Output Level** | 60 dBµV min. into 50 Ω system for ≥ 90% of combs in each range | | |
| **Frequency Stability** | < +/- 30 ppm max, < +/- 10 ppm typ, at an ambient of 5°C to 40°C | | |
| **Operating Time** | > 10 hours | All modes, typical with alkaline cells | |

### Other

| | | |
|---|---|---|
| **Output Connectors** | 2 x 50 Ω N-type, LF: 1 kHz to 30 MHz and HF: 30 MHz to 1 GHz | |
| **Dimensions** | 85 mm x 85 mm x 85 mm excluding connectors and switches | |
| **Weight** | 0.75 kg excluding cells | |
| **Power Supply** | 4 x cells AA or equivalent, alkaline or rechargeable NiMH | |
| **Indicators** | Power<br>Mode | Active, Cell Voltage Low, Replace cells<br>Noise signal output, Comb signal output |
| **Controls** | Rotary switch | LF noise \| LF comb modes \| OFF \| HF Comb modes \| HF noise |

## Standard Kits

| Part Number | Description | Parts Included |
|---|---|---|
| **YRS04KIT1** | Standard YRS04 Kit | • YRS04 reference source<br>• MON04 monopole antenna |
| **YRS04KIT2** | Enhanced YRS04 Kit | • YRS04 reference source<br>• MON04 monopole antenna<br>• NIA02 coupling adapter |

**All kits are supplied with**

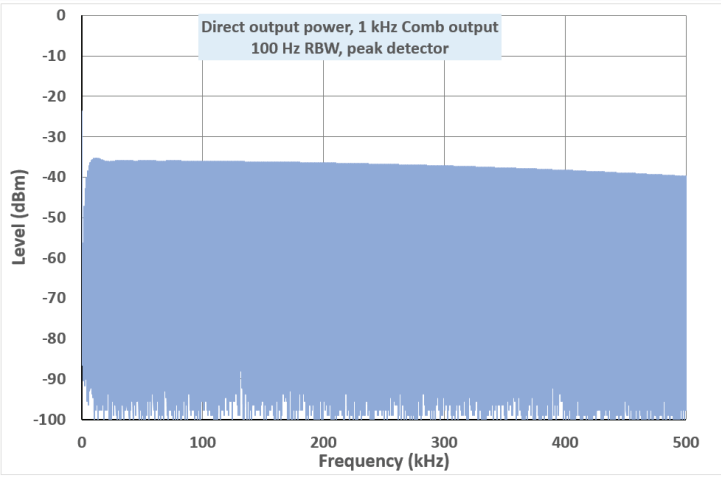
- Alkaline batteries;
- Hard case
- CD or USB memory stick containing manual and calibration data
- CAL23 manufacturer's test certificate showing output power from 1 kHz to 1 GHz measured using a spectrum analyser, all modes.

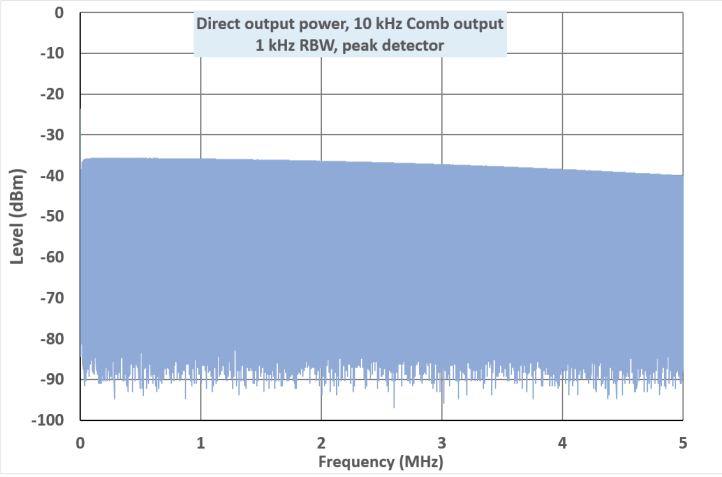
## Accessories

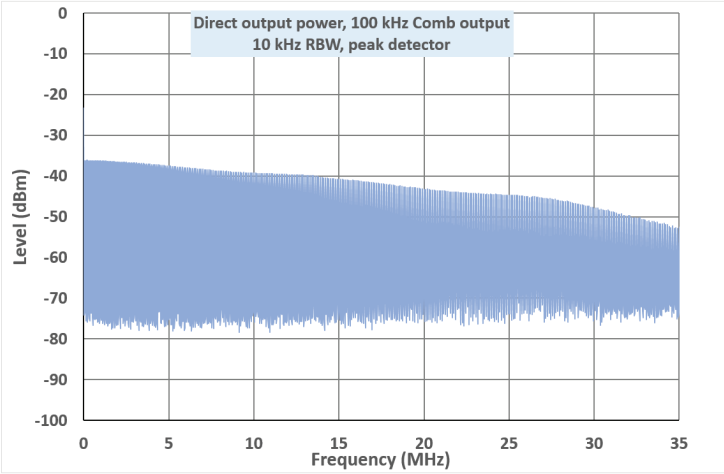
| Part Number | Description |
|---|---|
| **MON04** | 270 mm / 560 mm / 850 mm configurable monopole antenna |
| **NIA02** | LISN / ISN adapter with IEC 320 style connector and 4 mm socket connectors |

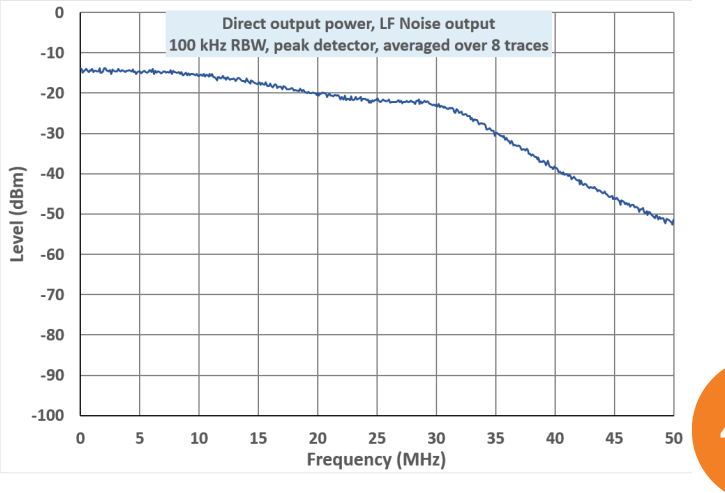
YRS04KIT02 - Shown without carrying case

## YRS04 Typical direct output measurement results

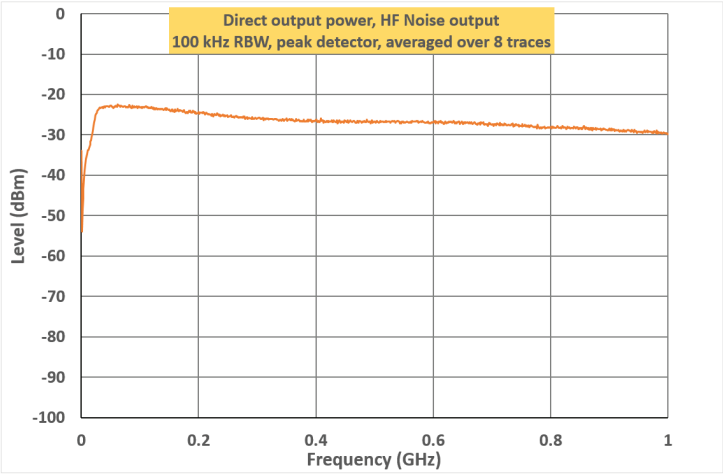


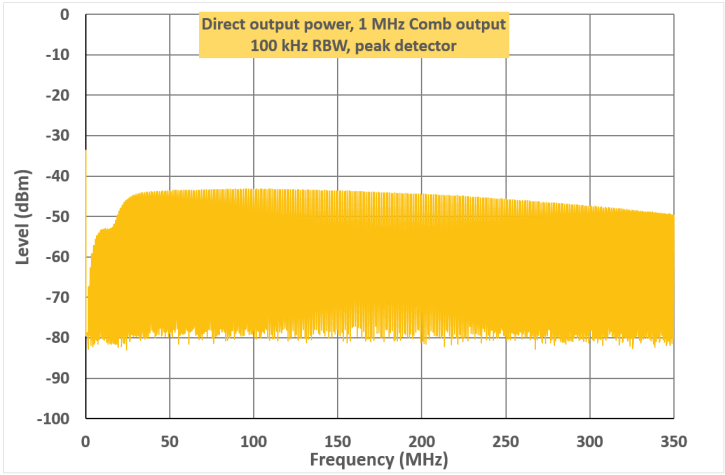



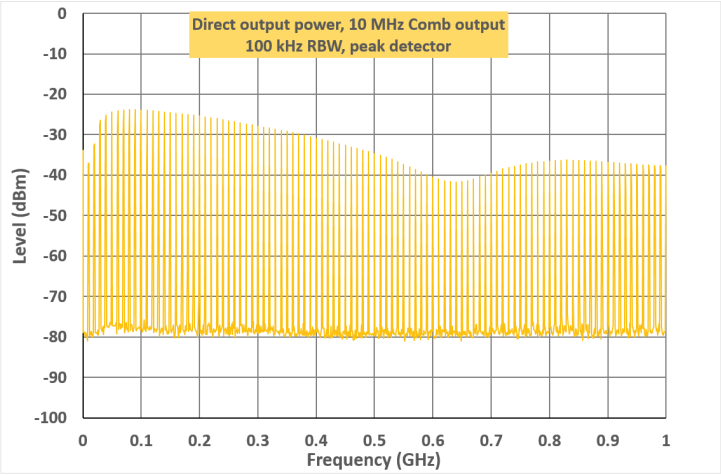



## YRS04 Typical direct output measurement results





emitec industrial

**Emitec Messtechnik AG**
Birkenstrasse 47
6343 Rotkreuz

+41 41 748 60 10
info@emitec.ch
www.emitec-industrial.ch

Emitec Group
#1 in Test & Measurement, worldwide.





eurofins | E&E

**visit:** eurofins.co.uk/york
**email:** EEinfoUK@eurofins.com
**call:** +44 330 430 3456