

IVD solutions through partnership



# **MAST**ISOPLEX<sup>®</sup> *DNA Lyo*

Ready to use isothermal amplification kit

**Just add  
Primers**

- Sensitive and specific LAMP technology
- Convenient lyophilised format
- Stable at high temperatures and humidities
- Fast, reliable and easy to use

## What is LAMP?

Loop-mediated Isothermal Amplification (LAMP) is a rapid nucleic acid amplification method, proven to overcome many of the practical limitations associated with conventional PCR. Developed by Notomi et al., in 2000<sup>1</sup>, LAMP amplifies DNA in a rapid manner with high efficiency under isothermal conditions. Driven by a single enzyme (Bst DNA-polymerase), LAMP has the ability to amplify large amounts of DNA in short periods of time using auto-cycling strand displacement DNA synthesis.

## Why choose MAST ISOPLEX® DNA Lyo?

### Convenient

MAST ISOPLEX® DNA Lyo, is a ready to use amplification kit, making molecular diagnostics with LAMP easy and efficient - **just add primers!**

Kit reagents are provided as lyophilised pellets for easy transportation & storage, while reducing the hands-on time to make up and validate your assays.

### Stability

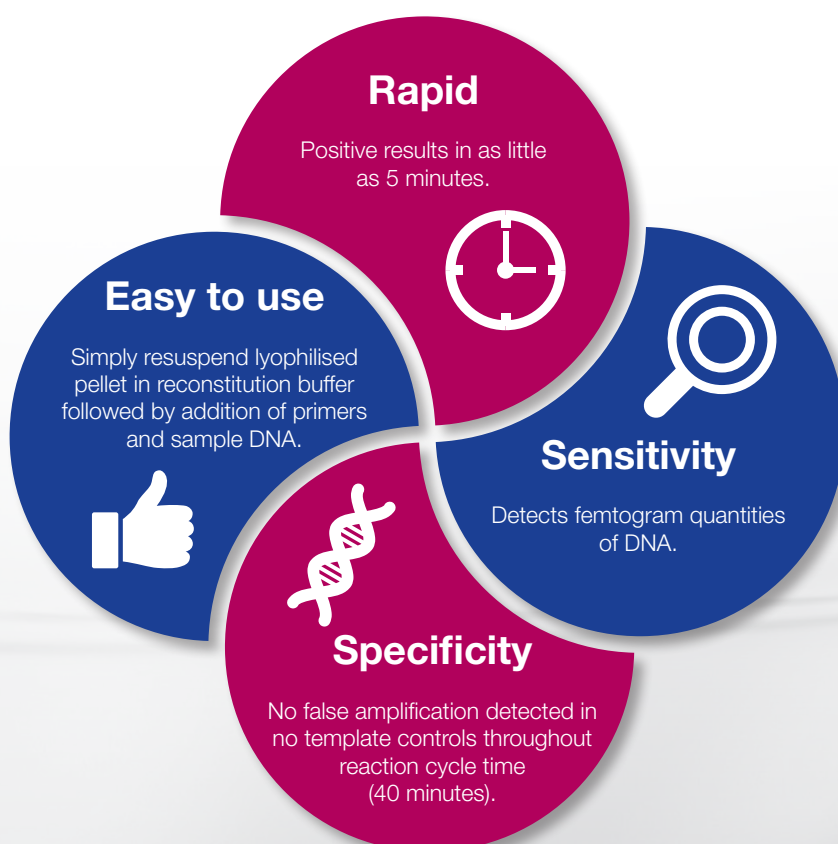
Pellet functionality has been shown to be unaltered by continuous exposure to high temperatures and humidity (13 weeks continuous exposure at temperatures up to 50°C with >90% relative humidity).

Product shelf life of unopened product is 1 year at room temperature (18°C to 25°C).

### Flexibility

Reconstituted pellets can be freeze-thawed on multiple occasions (at least 5 times) with no adverse loss of functionality. Different ratios of reconstitution buffer to water can be used to optimize your assay.

## Advantages of MAST ISOPLEX® DNA Lyo

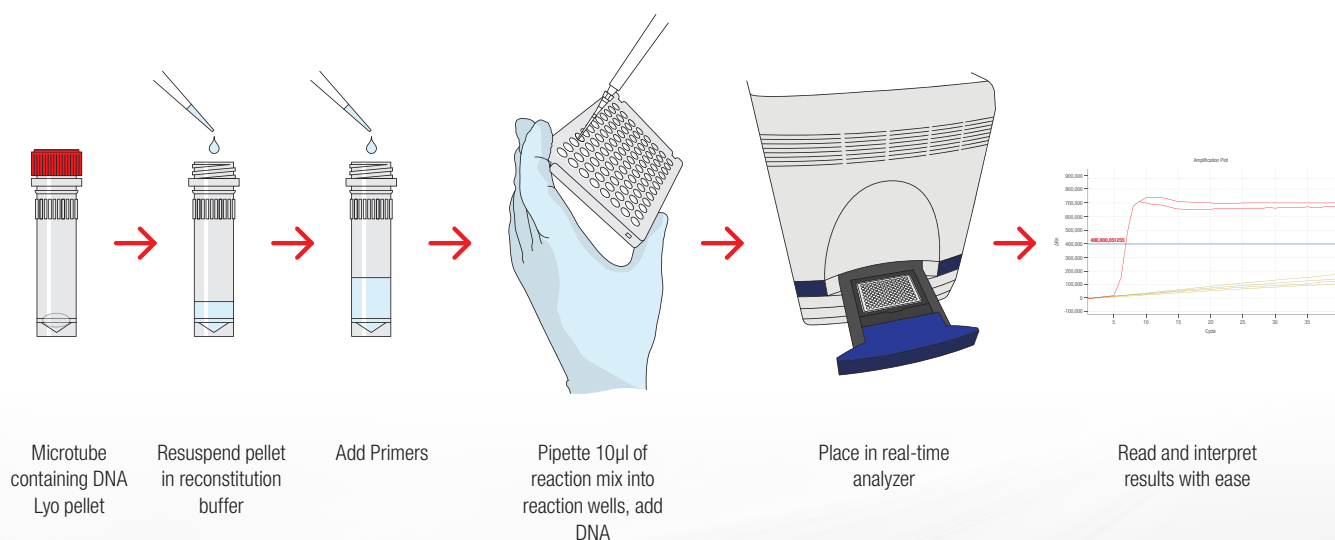


# LAMP Technology Benefits

## Comparative analysis of PCR and LAMP

Properties	qPCR	LAMP
Time to result	1-2 hours or longer based on product size and thermal cycling parameters	5-40 minutes, addition of Loop Primer can reduce reaction time further
Cycling	3 step process requires denaturation, annealing and extension which work at different temperatures and times	Single step process with constant temperature between 60°C to 65°C which reduces machine complexity and requirements
Temperature requirements	Different temperatures required per cycle (thermal cycling)	Single temperature required for strand displacement and product amplification (shorter reaction times)
DNA template preparation	Sample impurities can cause inhibition of PCR	Inhibition greatly reduced <sup>2</sup>

## LAMP assay preparation



MAST ISOPLEX® DNA Lyo is suitable for use on any real-time analyser that has a fluorescent reader with a FAM detection channel for the recognition of amplification products.



## Ordering Information

Order Code	Product	Kit Size
67DNALY1	MAST ISOPLEX® DNA Lyo	100 tests

1. Notomi T, Okayama H, Masubuchi H, Yonekawa T, Watanabe K, Amino N, Hase T (2000). Loop-mediated isothermal amplification of DNA. *Nucleic Acids Research* 28 (12): e63
2. Edwards T, Burke PA, Smalley HB, Gillies L, Hobbs G (2014). Loop-Mediated Isothermal Amplification Test for Detection of *Neisseria gonorrhoeae* in Urine Samples and Tolerance of the Assay to the Presence of Urea. *Journal of Clinical Microbiology* 58(6): p.2163-2165

\* Loop Mediated Isothermal Amplification (LAMP) is licenced under International Patent application numbers: WO 00/28082, WO 01/34838, WO 01/77317, WO 02/24902, WO 02/103053 and corresponding patents owned by Eiken Co., Ltd., Japan in other countries

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