







# DEVICE FOR THE CONTROL OF THE THICKNESS OF COATINGS WITH Y MEASURING HEADS






C1FPX-XXXLV1M04LN0 - YT03L



## Features

-  Contactless device
-  Non-Destructive measurement
-  Real-time thickness control
-  Compact measuring head  
Less than 10 cm and 180g
-  Measurable thickness from 100 nm up to 1 mm
-  Ability to measure several points simultaneously  
using several measuring heads (up to Y=10  
measuring heads for 1 command box)

## Applications

-  Industrial coating
-  Automotive industry
-  Aeronautics
-  Medical coatings
-  Housing and consumer goods

## Key values<sup>1</sup>

Parameter	Symbol	Value	Unit
Measurable thickness range	$E_p$	0.1 - 1000	$\mu\text{m}$
Accuracy	$\sigma_{E_p}$	< 3% of measured thickness	$\mu\text{m}$
Measurement duration	$t_m$	< 1s	s
Measurement distance range	$d_m$	20 - 150	mm

## References

Maximum power (W)	Wavelength (nm)	Reference
1	455	C1FP1-455LV1M04LN0 - YT03L
1	1470	C1FP1-1470LV1M04LN0 - YT03L
3	1550	C1FP3-1550LV1M04LN0 - YT03L
1	980	C1FP1-980LV1M04LN0 - YT03L
4	980	C1FP4-980LV1M04LN0 - YT03L
10	980	C1FP10-980LV1M04LN0 - YT03L
20	980	C1FP20-980LV1M04LN0 - YT03L
150	980	C1FP150-980LV1M04LN0 - YT03L

## Repeatability by thickness range<sup>1</sup>

Thickness range (μm)	Typical RMS repeatability in 1 point (μm)		Application process
	Paint, Adhesives, polymer coatings...	Metallic, ceramic... coatings	
0.01-0.1	±0.01	±0.01	PVD, CVD, PACVD, Electroplating
0.1-1	±0.05	±0.05	PVD, CVD, PACVD, Electroplating, Screen printing
1-5	±0.1	±0.3	PVD, CVD, PACVD, Electroplating, Anodizing, Spray, Screen printing
5-50	±0.3	±1	Anodizing, Electroplating, Galvanizing, Spray, Screen printing
50-300	±1	±2	Thermal spray, Cold spray, Galvanizing, Spray
300-1000	±3	±5	Thermal spray, Cold spray

## Absolute maximum rating (Ta = 23°C)

Parameter	Symbol	Value	Unit
Supply voltage	V <sub>p</sub>	100 - 240	V
Supply voltage frequency	f <sub>p</sub>	50 - 60	Hz
Operating temperature	T <sub>n</sub>	-5 to +50	°C

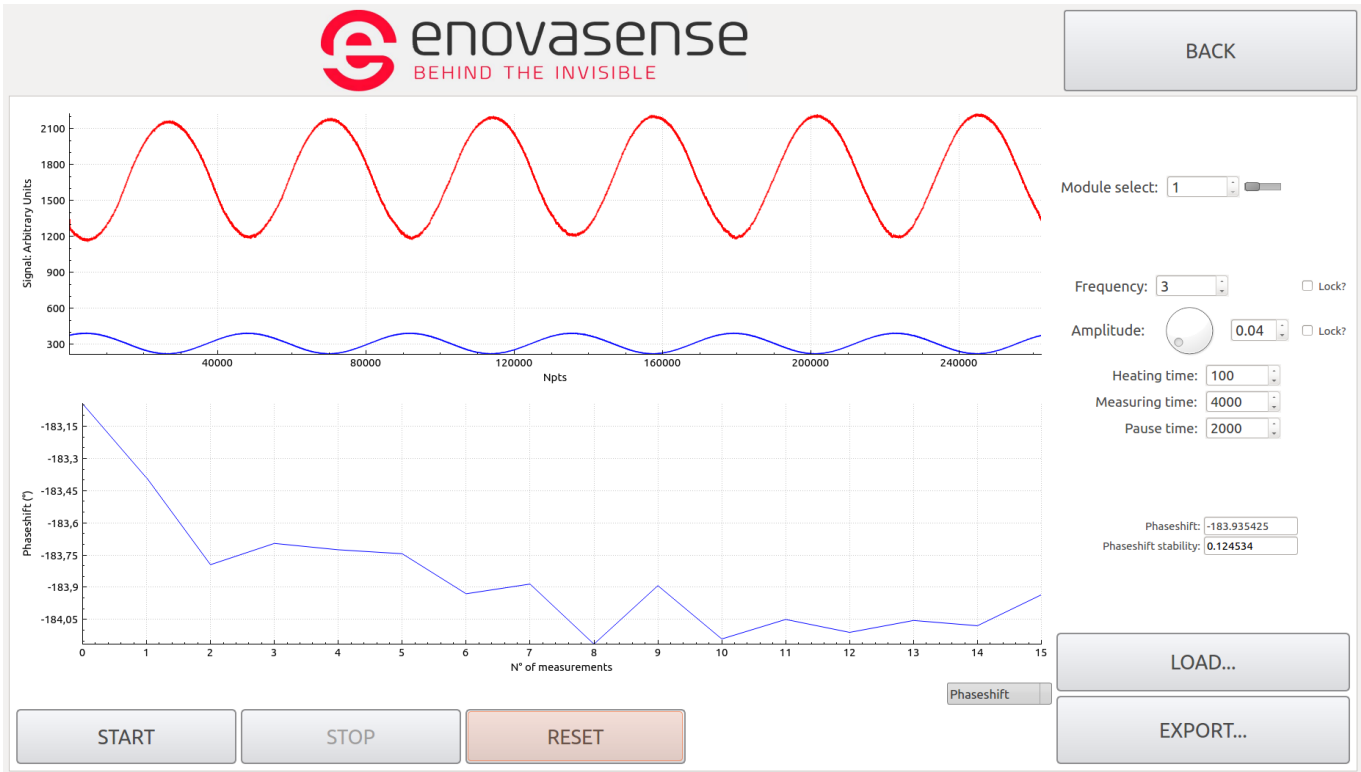
## Mechanical and optical characteristics (Ta = 23°C)

Parameter	Symbol	Value	Unit
Optical power	P	0.01 - 150	W
Wavelength	λ	455 - 1550	nm
Dimensions of computing unit	L <sub>c</sub> x W <sub>c</sub> x H <sub>c</sub>	373 x 247 x 88	mm
Weight of computing unit	m <sub>c</sub>	3	Kg
Dimensions of head of measurement	L <sub>h</sub> x W <sub>h</sub> x H <sub>h</sub>	86 x 41 x 32	mm
Weight of head of measurement	m <sub>h</sub>	180	g

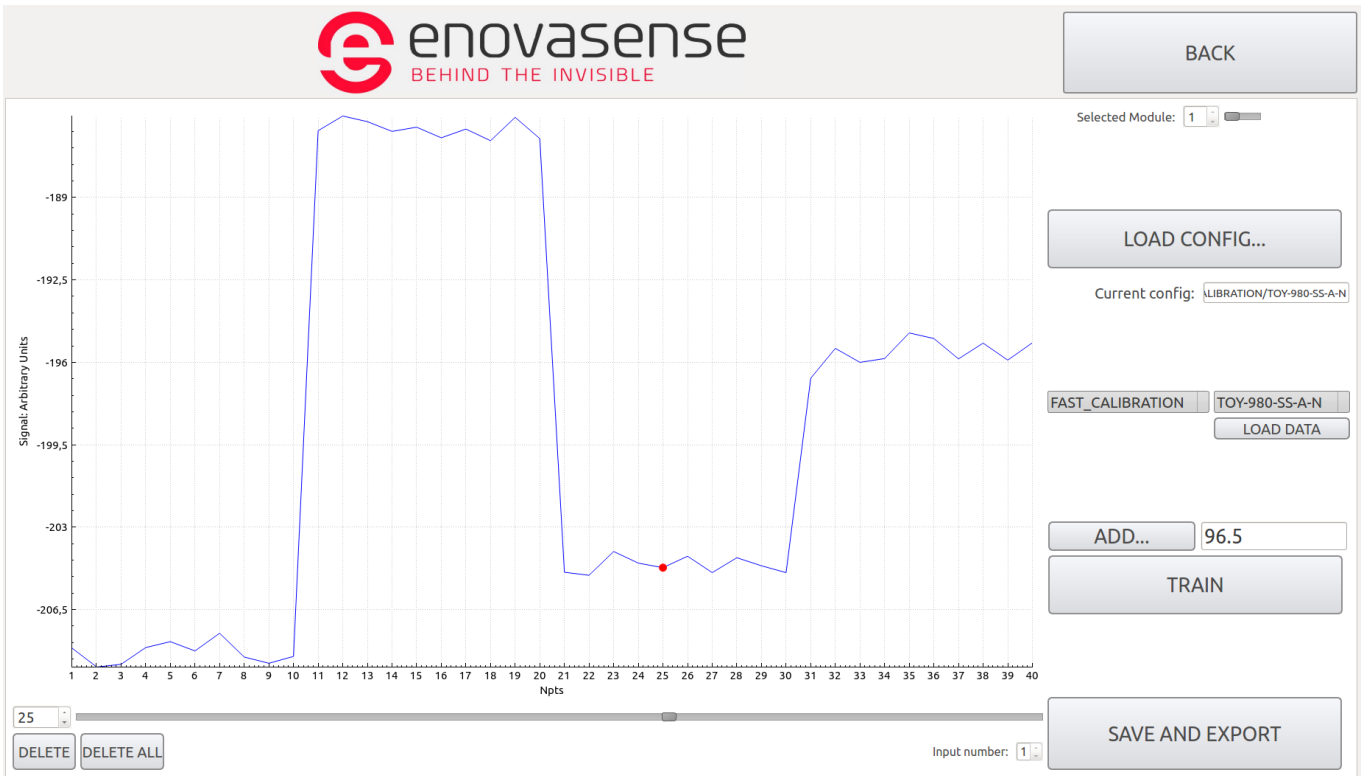
## Available spot sizes and measurement distances

Spot diameter (mm)	Measurement distance (mm)	Reference of the front lens	Typical tolerances on distance (mm) <sup>1</sup>	
			Paint, adhesives, polymer coatings...	Metallic, ceramic... coatings
0.3	20	SP03-FL-WD20-SD0.3	±2	±0.5
0.7	20	SP03-FL-WD20-SD0.7	±2	±0.5
2.5	20	SP03-FL-WD20-SD2.5	±2	±0.5
4.9	20	SP03-FL-WD20-SD4.9	±2	±0.5
6.5	20	SP03-FL-WD20-SD6.5	±2	±0.5
0.8	40	SP03-FL-WD40-SD0.8	±4	±1
2.3	40	SP03-FL-WD40-SD2.3	±4	±1
3.3	40	SP03-FL-WD40-SD3.3	±4	±1
10	40	SP03-FL-WD40-SD10.0	±4	±1
12	40	SP03-FL-WD40-SD12.0	±4	±1
8.8	100	SP03-FL-WD100-SD8.3	±10	±4
11.8	150	SP03-FL-WD150-SD11.8	±20	±10
6	450 <sup>2</sup>	SP03-FL-WD450-SD6.0	±100	±20

## Signal testing software view

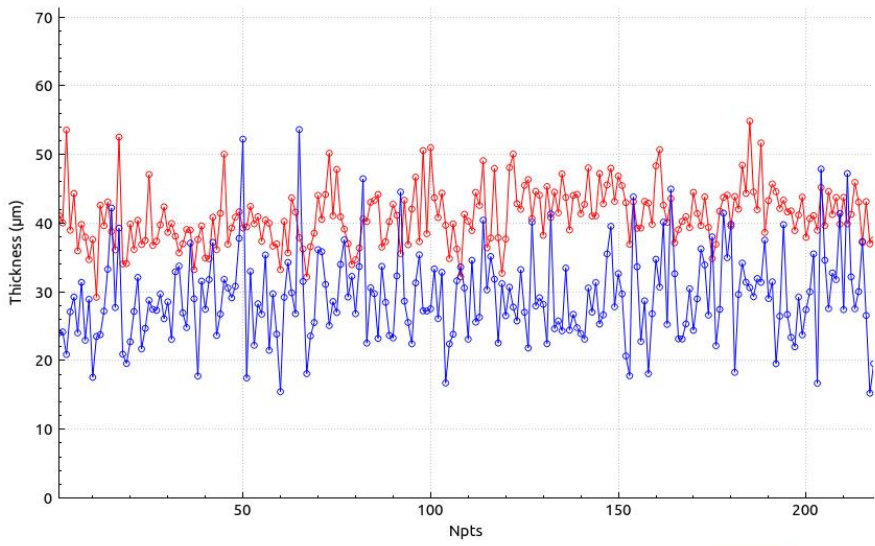


## Fast calibration software view



## Measure software view

BACK



Thicknesses:  
   
Averages:  
   
Standard deviations:

Name:

Current calibrations:

Pause before measure (ms):  Mode

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G:\INGESYM\_PRODUCTION\_CUBITS\AF124\ARC15###-ENOVASENSE\CAO\MSMH02\MSMH02-M007-03

03	28/07/2017	IGS	voir table de révisions indice 03	..	..
02	07/12/2015	IGS	voir table de révisions	..	..
01	20/07/2015	IGS	Creation	..	..
Issue	Date	Drawn	Modification details	Origine	Checked

Material: --- Tolerance: --- ISO2768-1 Traitement: ---

SCALE: 1:1 TITLE: CAPTEUR EQUIPE  
CAPTEUR METAL SENSOR V2

Roughness: Ra: --- Mass: 162.82 g

CAD DWG No hand written modification

A3 Ingesym Centre Scientifique d'Essai  
100, 507  
Rd. 01 - 02 - 03 - 04 - 05 - 06 - 07 - 08 - 09 - 10  
Tel: 01 55 35 98 99  
Fax: 01 55 35 98 98 FAMILY: MSMH02 TYPE: --- DWG N°: MSMH02-M007-03 SHEET: 2/2

SAUF INDICATION CONTRAIRE: FINITION: CAUSER LES ANGOLES VES: NE PAS CHANGER L'ECHELLE REVISION: ETAT DE SURFACE: TOLEANCES: LINEAIRES: ANGULAIRES:

AUTR:	NOM:	SIGNATURE:	DATE:			TITRE:
VER:						
APP:						
FAB:						
QUAL:						

No. DE PLAN: Boîtier ENOVASENSE A3

MATERIAU: ECHELLE: 1:5 FEUILLE 1 SUR 1

## Package content

Designation	Quantity
Computer with EU power adaptor	1
Enovasense TPS computing unit	1
EU Power cable	1
HDMI cable	1
Optical fiber	Y
LEMO cable	Y
Enovasense Measuring head T03	Y
Front lens SP03-FL	Y
Enovasense standard software	1
1-year warranty	1
CE certificate	1
Quality control certificate	1

<sup>1</sup>Performances values given in this document are typical values obtained with this device but can vary from one application to another. For a diagnosis of those performances on specific samples, please contact Enovasense.

<sup>2</sup>450mm distance measurement can be obtained with a specific distance objective AS01DO that is not included in this standard package and has to be purchased as an add-on accessory. See AS01DO datasheet.

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