

## Ordering Information

1. maXipig® Boar Semen Light Activation Unit  
(includes Universal Basket CAT. 900011629)  
220-240VAC **CAT. 90008400**  
100-115VAC **CAT. 90008401**
2. Universal Basket for 25 Doses  
(for bottles, tubes, or blisters)  
**CAT. 900011629**



# maXipig®

Enlightening Fertility  
Boar Semen Light Activation

## Technical data

Power Range: 100-115VAC (90008401)  
220-240VAC (90008400)

Frequency Range: 50-60Hz

Maximum Power: 620W

Air Temperature: 59-95°F  
15-35°C

Relative Humidity: 15-75% (non-condensing)

Place of Operation: For indoor use only

Dimensions (LxWxH):  
581x400x478mm / 22.8x15.7x19.2 in

Weight: 32Kg / 70lb

Irradiation Time: 30min with fixed light programmed intervals.

Specifications subject to change without notice.



Doc. No. 50007913-02

CAT. 90008400 (220-240VAC)  
CAT. 90008401 (100-115VAC)

For more information visit us at:  
[www.maxipig.com](http://www.maxipig.com)

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## Product Overview

Low farrowing rates cause high cost increases in swine production. Pig production management and AI programs allow today average fertility rates of clearly above 90%. To consistently achieve such levels, boar semen has to be in optimal conditions at the moment of AI.

**maXipig®** is a patented boar semen light activation system, applying a specific pattern of red-LED based light in an air refrigerated chamber. The treatment is applied before using the semen doses for AI. With the treatment, sperm motility parameters consistently increase, and **farrowing rates are brought up by an additional 1 to 11% while litter size increases by up to 1.4** as observed in on-farm trials involving more than 10,000 sows.

## Main Benefits

- Improved farrowing rate.**
- Improved litter size.**
- Increased sperm viability and fertility.**
- Increased sperm longevity.**

A positive influence of light of specific wavelengths on sperm parameters and fertility has previously been described in few scientific reports. The publication of M. Yeste and collaborators reports notoriously positive effects, both in vitro and in vivo, of a specific LED-based red light stimulation protocol of diluted boar sperm (1). The field trial involved a total of 1320 sows inseminated in a split-sample design.

Overall farrowing rate was 88.1% in the treatment group versus 83.7% in the control group. The difference is statistically significant ( $P < 0.05$ ). Also litter size was significantly ( $P < 0.05$ ) improved in the treatment group with  $14.9 \pm 0.3$  total born piglets compared to  $13.5 \pm 0.2$  in the control group.

A series of field trials under farm conditions was conducted by S. Balasch and J.E. Rodríguez-Gil (2).

9 farms with a total of 9000 sows used the maXipig® unit over 18 months on 50% of their breedings. Farrowing rates were increased in the treatment group on all farms with an average of 2.11%. The lowest increase was 1.15%, the highest 11.52%. Litter size was also increased by light activation: live born piglets increased in average from 12.7 (control) to 14.0 (stimulated semen). In all of the above described trials, no physiological or developmental alterations were observed in the born piglets.

## maXipig®: Estimation of cost savings through improving sperm viability and increasing fertility and prolificacy in pig production.

### Annual Cost Reduction (EUR)

Number of Sow	Fertility Increase			
	1%	2%	5%	10%
1.000	2.200	4.400	11.000	22.500
1.500	3.200	6.500	17.000	34.000
3.000	6.500	13.000	34.000	68.000

\*Average in trials with more than 5.000 sows. Improved fertility 1,15% - 11,52%

### Reducing non-productive days

Fertility Increase	1%	2%	3%	4%	5%	7%	9%	11%
Cost Reduction per sow and year (EUR)	1,25	2,50	3,75	5,00	6,25	8,75	11,25	13,50

\* Total annual sow cost EUR 750

\*\* Average annual farrowings 2,34

### Increasing litter size

Fertility Increase	1%	2%	3%	4%	5%	7%	9%	11%
Cost Reduction per piglet and year (EUR)	0,03	0,09	0,15	0,21	0,27	0,39	0,51	0,63