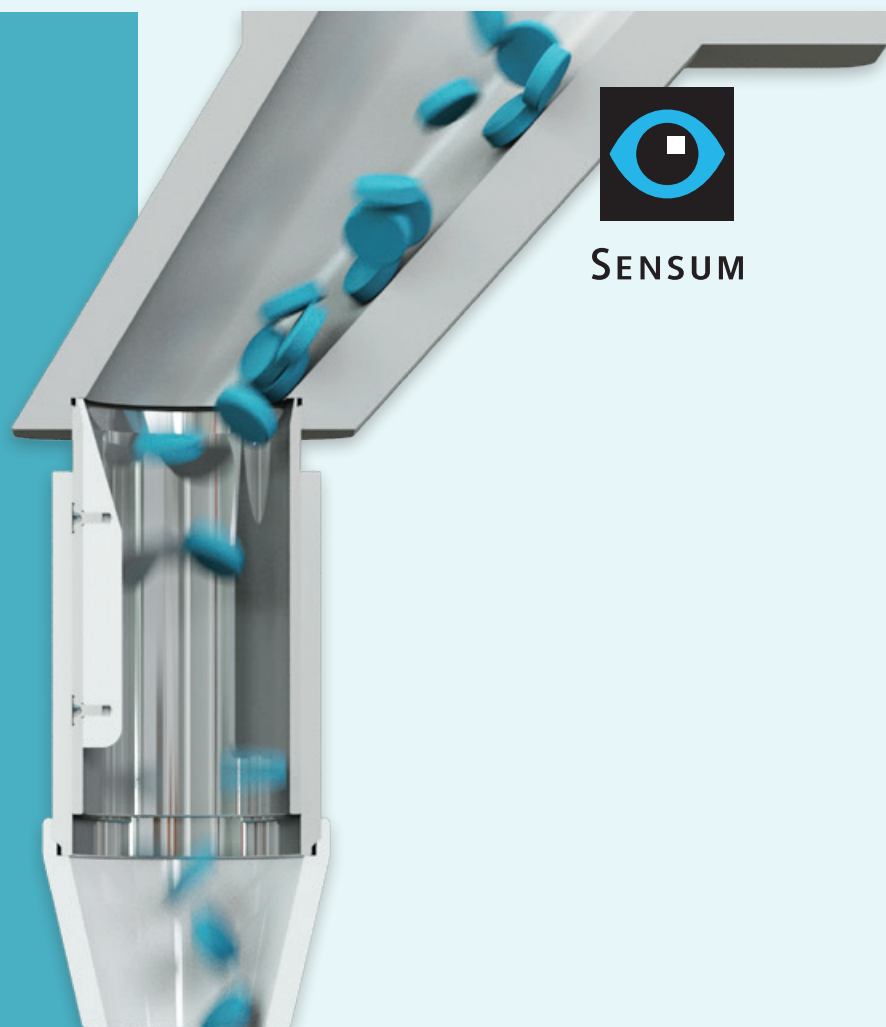


# SPINE FIBO

Automatic Visual Inspection,  
Counting and Bottle Filling of  
Tablets & Capsules & Softgels



SENSUM



*Computer  
Vision  
Systems*

# SPINE FIBO

**AUTOMATIC VISUAL INSPECTION, COUNTING AND BOTTLE FILLING  
OF TABLETS & CAPSULES & SOFTGELS**



## HIGHLIGHTS

- Multifunction machine for inspection, counting and bottle filling
- Exceptional 100 % visual inspection of tablets, capsules & softgels
- Product sorting before final counting and filling
- Easy adjustment for bottles of different size and type
- Filling bottles with count from 30 to 1000, and higher
- Capacity up to 130/105/10 bottles per minute at 60/100/1000 count
- Intuitive user-friendly graphical interface
- Ergonomic, compact design for simple cleaning and maintenance

# REDUCE COSTS

**SPINE FIBO** combines the inspection performance of Sensum **SPINE** machine with high speed counting and bottle filling, that can be easily integrated into any new or existing bottle packaging line.



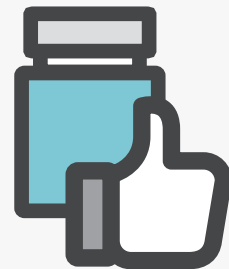
## TWO PROCESSES COMBINED IN ONE

- 100% inspection and counting with bottle filling
- Smaller footprint than conventional counters
- Lower number of operators
- Less material handling
- Less material storage



## RELIABLE BOTTLE FILLING

- System with no flaps
- Double counting with camera and optical system
- Less rejected bottles: only good products are filled into bottles because defective products are sorted out beforehand
- Bottle filling speed is not decreased due to defects in batch
- Reliable and controlled handling of each individual product
- Reliable filling of very small products (less than 6 mm)



## LOWER RISKS



- Removed risk of product damage after inspection and before bottle filling due to material handling
- Reduced risk of human error after inspection
- Removed risk that two products count as one
- Removed risk that a defective product (e.g. laminated tablet) is filled in the bottle
- Reduced clogging at bottle neck: products are filled into a bottle one by one

# IMPROVE YOUR QUALITY BY SORTING OUT DEFECTS

## ROUND TABLETS



thickness



chips



shape



dark dots



bright dots



colour deviation



chipped coating



edge chips



edge cracks



edge dark dots



engraving defects



print defects

## OVAL AND OBLONG TABLETS



lamination



chips



cracks



coating defects



engraving defects



print defects

## CAPSULES



holes



dents



joints



length



empty transparent



print defects

## SOFTGELS



size



damaged seam



dirt



hair



bubbles



broken

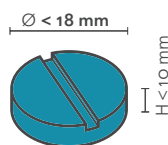
AND MANY MORE ...

# INSPECTION OF TABLETS, CAPSULES OR SOFTGELS

## INDICATIVE INSPECTION SPEEDS

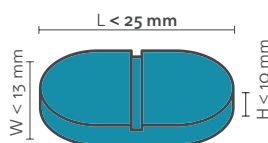
### ROUND TABLETS

Ø (DIAMETER) IN MM	TABLETS / HOUR
13 - 18	210.000
10 - 12	420.000
8 - 9	520.000
< 8	630.000



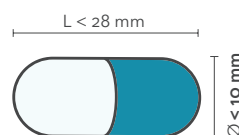
### OVAL AND OBLONG TABLETS

L (LENGTH) IN MM	TABLETS / HOUR
> 18	150.000
14 - 18	230.000
11 - 13	310.000
8 - 10	390.000
< 8	470.000



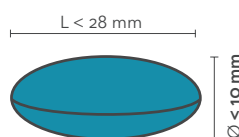
### CAPSULES

SIZE	CAPSULES / HOUR
0 & 1 & 2	200.000
3 & 4 & 5	300.000



### SOFTGELS

L (LENGTH) IN MM	SOFTGELS / HOUR
> 15	160.000
14 - 15	280.000
11 - 13	380.000
8 - 10	470.000
< 8	570.000



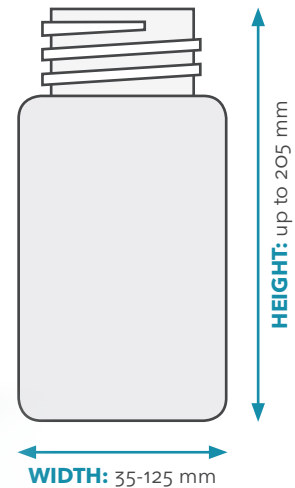
**ACTUAL INSPECTION SPEED** depends on the shape, size and type of tablets, capsules and softgels, and on the number of inspected features. In special cases, even higher inspection speeds might be possible with dedicated solution.



# BOTTLE FILLING AFTER INSPECTION AND SORTING



## BOTTLE SPECIFICATIONS



## INDICATIVE BOTTLE FILLING SPEEDS

COUNT PER BOTTLE	BPM (BOTTLES PER MINUTE)
30	105
60	130
100	105
500	21
1000	10

Actual speeds depend on the inspection speed of the product.








## YOUR FILLING SPEED FORMULA:

$$\text{BPM} = \frac{\text{INSPECTION SPEED (PR/H)}}{60 \text{ MIN} \times (\text{COUNT PER BOTTLE})}$$

(See inspection speed page)

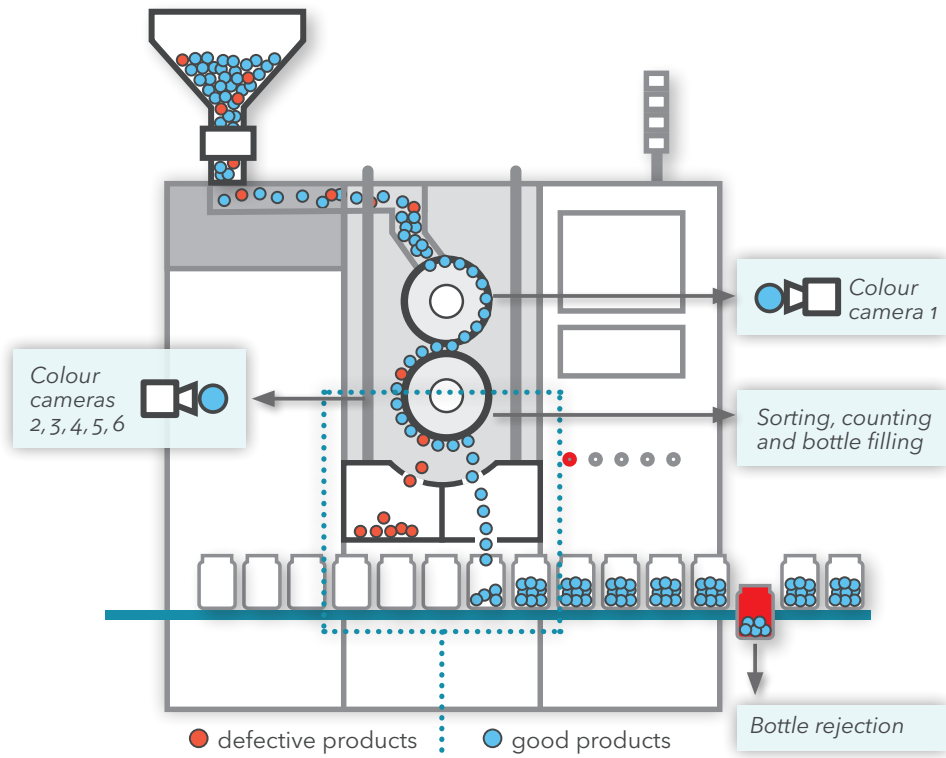
Indicative bottle filling speeds are the upper limit for actual performance.

## TECHNICAL DATA

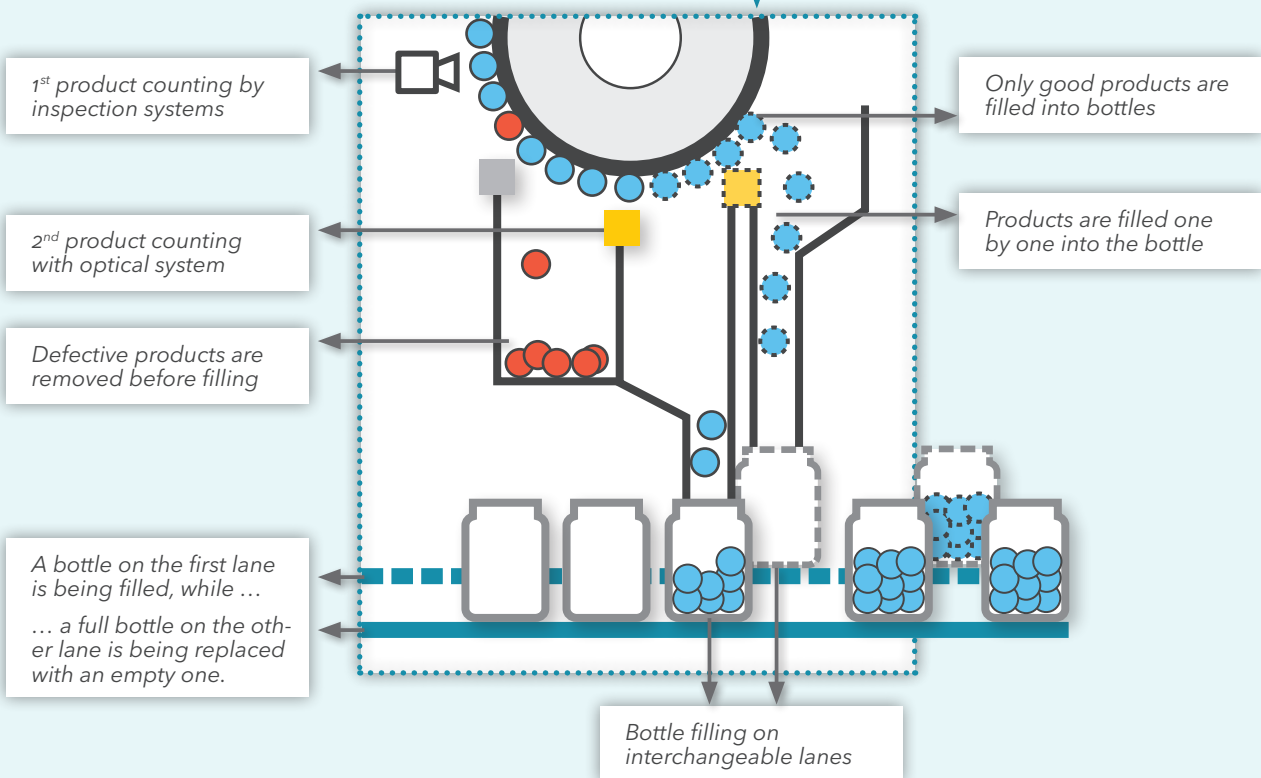
 <p><b>APPLICATION</b></p> <p>Tablets, capsules and softgels</p>	 <p><b>INSPECTION QUALITY</b></p> <p>Same as Sensum <b>SPINE</b> machine</p>	 <p><b>TYPICAL ELECTRICAL CONNECTION</b></p> <p>400/230V</p>	 <p><b>COMPRESSED AIR</b></p> <p>7 Bar, 100 Nm<sup>3</sup>/h</p>	 <p><b>DIMENSIONS L x W x H</b></p> <p>L = 2560 mm W = 860 mm H = 2145 mm</p>	 <p><b>WEIGHT</b></p> <p>1300 kg</p>	 <p><b>CONSTRUCTION</b></p> <p>CE, GMP, FDA acceptable materials</p>
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# CONTINUOUS AND RELIABLE BOTTLE FILLING

Sensum **SPINE** FIBO automatically inspects the entire surface of products with 6 visual systems at high speed. The inspected products with defects are removed before bottle filling. The good products are **counted and filled** into bottles. Miscounted bottles are automatically **rejected** from the packaging line.



## EFFICIENT BOTTLE FILLING WITHOUT FLAPS





**SENSUM**



**Sensum**

*Computer  
Vision  
Systems*

Tehnološki park 21  
1000 Ljubljana  
Slovenia, EU

[www.sensum.eu](http://www.sensum.eu)  
[info@sensum.eu](mailto:info@sensum.eu)



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**ABOUT SENSUM:**

We develop, produce and sell innovative automatic visual inspection solutions for the pharmaceutical industry. We have a strong R&D cooperation with the Imaging Technologies Lab, Department of Electrical Engineering, University of Ljubljana to keep in touch with the latest scientific developments.

