

# FUMAGALLI HI-TECH



New Range



**Fumagalli Componenti**

PARIS | LONDON | NEW YORK | WIEN | MILAN | ROME | VENICE

[www.fumagallidryers.com](http://www.fumagallidryers.com)

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## 1. Brief company introduction “Fumagalli Componenti S.p.A”

Fumagalli Componenti is a company certified ISO 9001:2008 and began activity on the market since 1962. The company is specialized in production and distribution of professional electrical warm air hand / hair dryers.

## 2. **PROJECT FUMAGALLI HI-TECH**

FUMAGALLI HI-TECH is our new line of warm air electrical hand dryers developed in accordance with the new concepts of design and technology aiming to:

### 2.1. REDUCTION OF ENERGY CONSUMPTION

This new line is granting an important reduction of energy compared to previous generation hand dryers today available on the market. This result is obtained thanks to two different systems:

- 2.1.1. Internal unit “motor + fan” with improved aerodynamic performances with which you can dry hands in a few seconds, reducing considerably the quantity of needed time for this operation using a previous generation hand dryer.
- 2.1.2. Reduction of energy absorption thanks to electronic control of air temperature.

### 2.2. FUMAGALLI HI-TECH HOW IT WORKS

2.2.1. The working principle of the new hand dryers HI-TECH is based on a completely automatic control of airflow and temperature parameters, through a central electronic system. Hand dryer can be programmed on different settings, each of them matching different possible environmental hygrometric conditions (temperature and humidity levels) that can be found in the different places where the product is installed. Once decided by the user the preferred setting, the dryer will grant requested service absorbing automatically the minimum possible quantity of energy. Infrared sensors (stand-by absorption close to zero) detect presence of user hands and main electronic pc-board will:

- Start ventilation projecting a green light on hands in order to indicate correct position of hands (without energy dispersion)
- Activate, if necessary, heating element for air warming
- Activate system for automatic regulation of air temperature
- Memorize working parameters
- At the end of drying cycle, the electronic system will stop service

*2.2.2. Technical specification of Fumagalli HI-TECH hand dryer*

<b>PARAMETER</b>	<b>FUMAGALLI HI-TECH</b>
Total weight	4861,7 gr
Maximum nominal electrical absorption	2450 Watt
Airspeed at outlet	53,7 mt/sec
Airflow	650 m <sup>3</sup> /hour
IP protection level	IP24

## 2.3. SAVINGS ON ENERGY CONSUMPTION

2.3.1.1.1. Electrical hand dryers available today on the market, always use the maximum of energy, from the beginning to the end of drying cycle. Furthermore, for all those cases where the dryer is often working during the day, we have as a result very high and uncomfortable temperature of air, wasting unnecessary quantities of energy. This problem will be bigger for all those occasions where the number of users is high and therefore dryers are used heavily

2.3.1.1.2. In the product FUMAGALLI HI-TECH we have a special system for air regulation. It controls the air temperature at outlet, keeping it constant thanks to adjustments of the voltage on the heating element. In this way we have important savings of energy that on the contrary would be mostly wasted or used unnecessary.

2.3.1.1.3. The system for control and regulation relies on a feeler which modulates the heating element absorption in relation to the air temperature at nozzle outlet and ambient conditions. This system is even more effective during seasonal changes of temperature detected in the ambient controlling energy absorption in accordance with room temperature.

2.3.1.1.4. Working on software, we can program, during production phase or even in a successive phase, 4 different steps of air temperature:

- Eco
- Medium
- Comfort
- Extra Comfort

Energy consumption is proportional to air temperature.

## 2.4. ENERGY EFFICIENCY

Comparison between technical specifications of new project FUMAGALLI HI-TECH and standard range MG88 250 Watts

2.4.1. Our new hand dryer HI-TECH is featuring improvements and technological innovations that can be underlined comparing the product with our historical dryer MG88 2250 watts (nominal absorption already lower than what is normally available on the market).

2.4.2. This comparison was carried out examining working products from the two ranges, using specific lab instruments and checking the percentage advantages offered by the new product.

2.4.3. The following chart, reporting an analysis of main functional parameters between standard MG88 2250W and FUMAGALLI HI-TECH, highlights all important results reached with the new range.

#### 2.4.4. ANALYSIS ADVANTAGES OF THE NEW HAND DRYER FUMAGALLI HI-TECH

	Parameter	Improvement MG88 HI-TECH %
Raw material reduction	Total weight	-39%
Increase of recyclable raw materials	Percentage of recyclable raw materials	+25%
	Not recyclable remaining raw materials	-93%
Increase of product life time	Number of drying cycles during product life time	+500%
Reduction of energy use for optimal performance	Maximum air speed	+62,7%
	Maximum airflow	+116,7%
	Average air temperature	-0,04%
	Average drying time	-50%
	Energy consumption for each drying cycle	-57%
Reduction of energy use for sourcing of raw material	Distance in Km from raw material sources	-62%

#### 2.5. SUMMARY OF ENERGY ADVANTAGES OF FUMAGALLI HI-TECH

2.5.1. Through the analysis of all parameters in the chart we can reach the following conclusions in relation to performances of the new Fumagalli HI-TECH:

2.5.2. Reduction by 40% of raw materials and energy needed for producing the dryer, thanks to reduction of product weight.

2.5.3. Reduction of total energy consumption for each dryer cycle by 75%, thanks to an higher efficiency of the fan as below indicated:

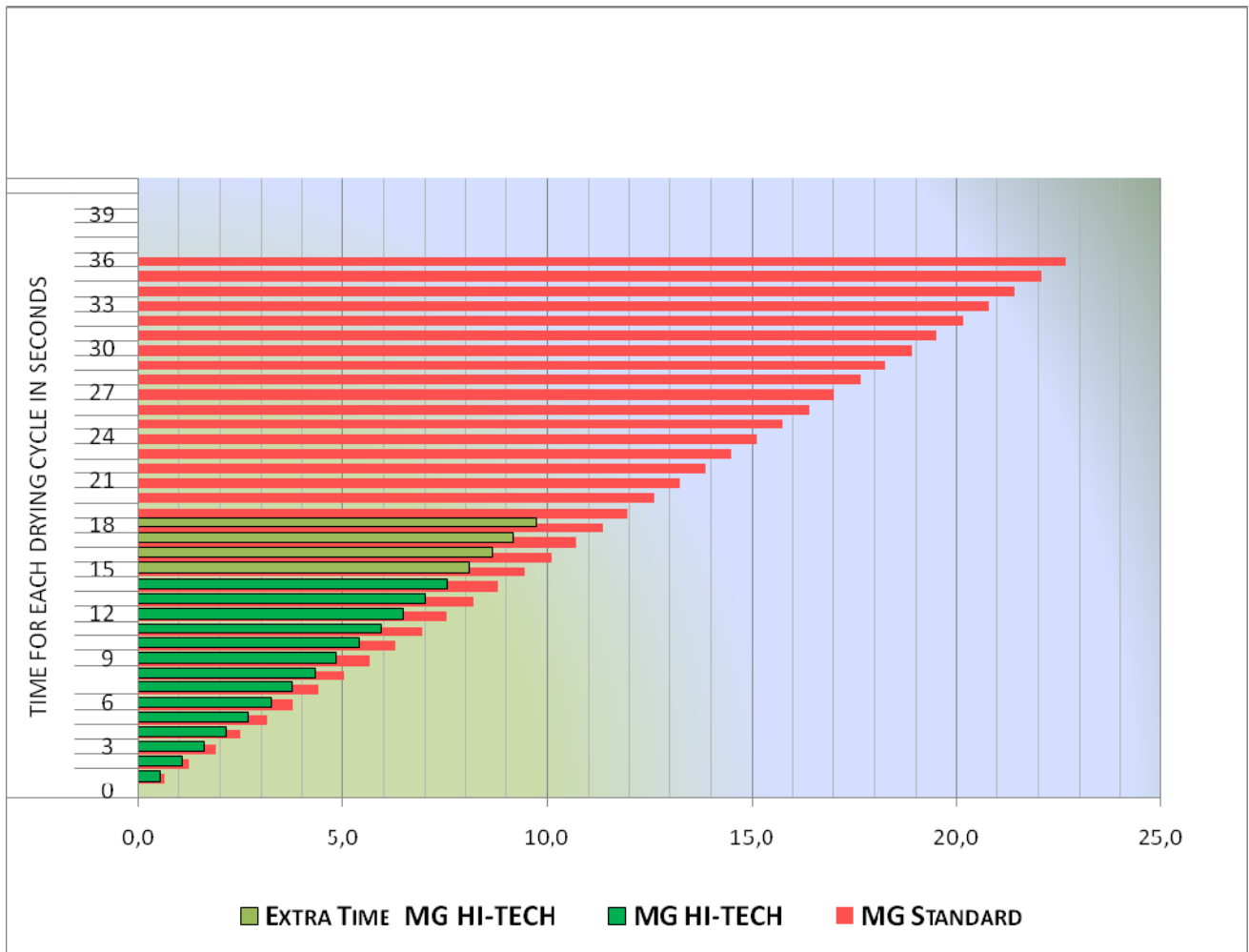
2.5.3.1. Increase of maximum air speed

2.5.3.2. Increase of airflow

- 2.5.3.3. Reduction of energy absorption needed for air heating
- 2.5.3.4. Heavy reduction of drying time for each drying cycle

### 3. ENERGY SAVINGS

*Comparison between electrical absorption of MG88 standard dryer and new HI-TECH for each drying cycle*



ABSORPTION IN WATTS (for each drying cycle)

## 4. LIFE CYCLE OF THE PRODUCT

4.1. FUMAGALLI HI-TECH IS A PRODUCT WITH LONGER LIFE

4.2. "ELP" Project - Eco Life Program

4.3. Fumagalli project "Eco Life Program" has been developed taking into consideration the whole design of the new dryer that has been designed and realized with interchangeable components. These make the product Ecological and Regenerable because, just replacing this block of components, you can give new life to the dryer. Furthermore this operation can be done continuously

4.3.1. For this new range Fumagalli decided to invest time and efforts, during design phase, also for having a product featuring easy disassembling. In this way we can grant successive advantages such as: easy maintenance and recycling of components (at product end of life) for new use and new life.

4.3.2. We therefore have easier maintenance thanks to the following characteristics:

4.3.2.1. Cover closing system is based on a new concept: there are only two screws (always thief and vandal proof) that remain on the dryer without coming off or falling and, at the same time, granting easy, safe and correct closure.

4.3.2.2. All internal components have been realized for easy replacement.

4.3.3. For every dryer, the internal components motor + fan can be considered the heart of the dryer itself and are obviously more subject to wearing than other components. For this reason we developed the new patented LEM system (LongLife Easy Maintenance). It's an innovative combined KIT system based on "one block component" for maintenance optimization. It's recyclable and gives new life to the dryer restarting initial parameters.

### 4.4. REDUCTION OF MAINTENANCE COSTS

4.4.1. This result is obtained thanks to special characteristics of the innovative electronic pc-board that can memorize working parameters. In fact it is featuring a signal lighting system in order to inform when maintenance is needed. In this way you can:

4.4.1.1. Prevent failures due to components wearing, with consequent waste of money and useless damaged parts

4.4.1.2. Prevent and reduce useless maintenance operations

4.4.1.3. Prevent irregular absorption in case of not proper working of the dryer itself because of worn out components.

### 4.5. WORKING CHARACTERISTICS AND PARAMETERS

Our new system for electronic control can memorize all working parameters; thanks to this it can also send warning lighting signals suggesting maintenance. In this way the dryer can have much longer life

4.5.1.1. There are three leds with different colours as here below indicated:

4.5.1.1.1. Fixed orange light: scheduled maintenance date is approaching

4.5.1.1.2. Fixed red light: maintenance intervention is necessary

- 4.5.1.1.3. Intermittent red light: dryer working systems is stopped because it can be damaged without immediate maintenance intervention
- 4.5.1.1.4. Every signal and light will be reset after maintenance intervention
- 4.5.1.2. Further advantage comes from the memory of our new electronic pc-board. In fact we can check all registered data for successive optimization and new possible dryer initial set. This can be done through connection between the dryer running system and a computer

**5. INNOVATION FOR THE ENVIRONMENT**

**5.1. REDUCTION IN TERMS OF ENVIROMENTAL IMPACT**

The project of our new hand dryer FUMAGALLI HI-TECH is based on two main concepts:

- reduction in terms of environmental impact
- energy efficiency

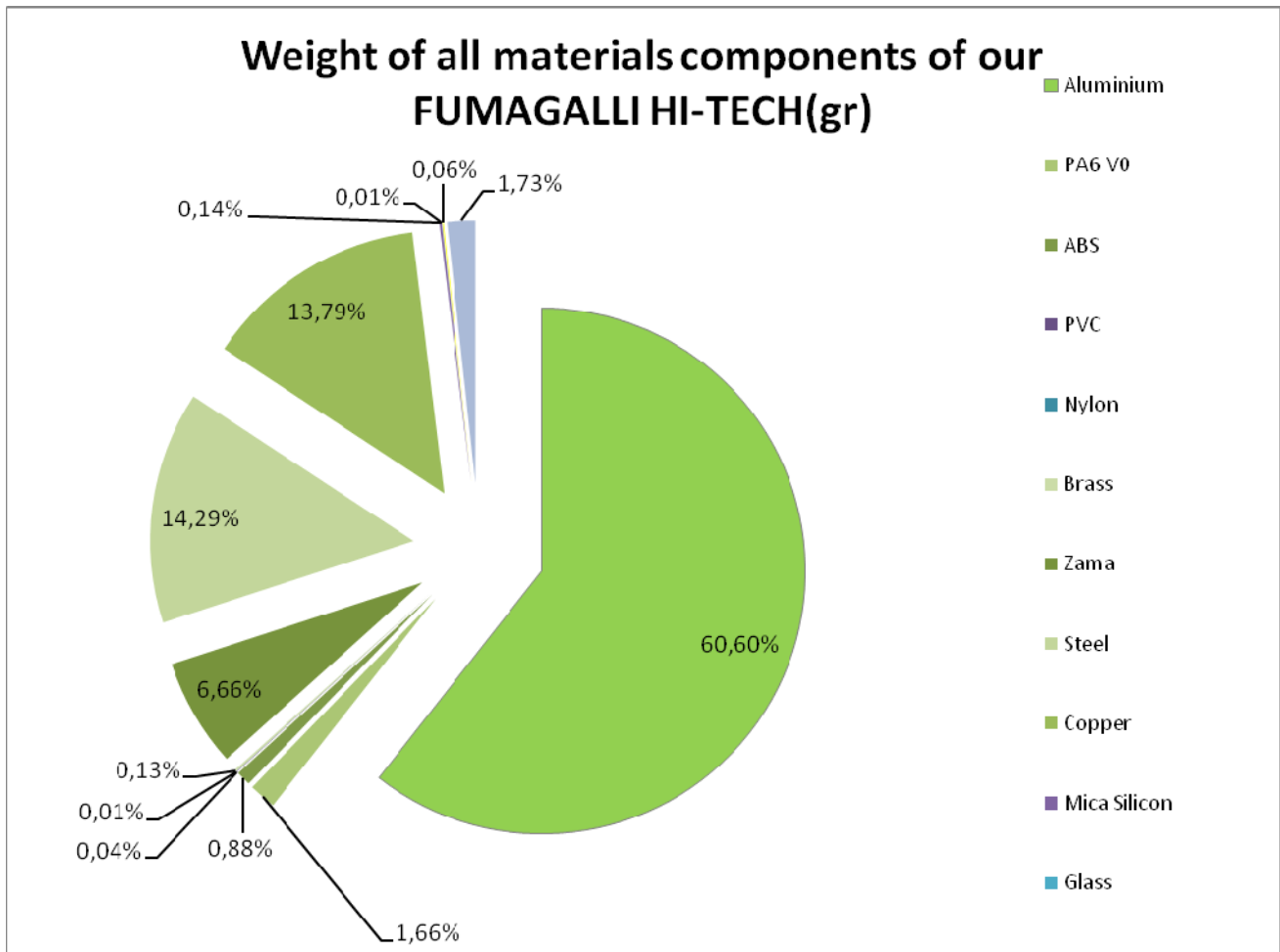
**5.2. WASTE REDUCTION**

One of the main selling points of our new FUMAGALLI HI-TECH is a heavy reduction of wastes at the end of product lifetime. Thanks to an increment of recyclable materials we can present a product that is totally recyclable

**5.2.1. Chart of materials and possibility of being recycled**

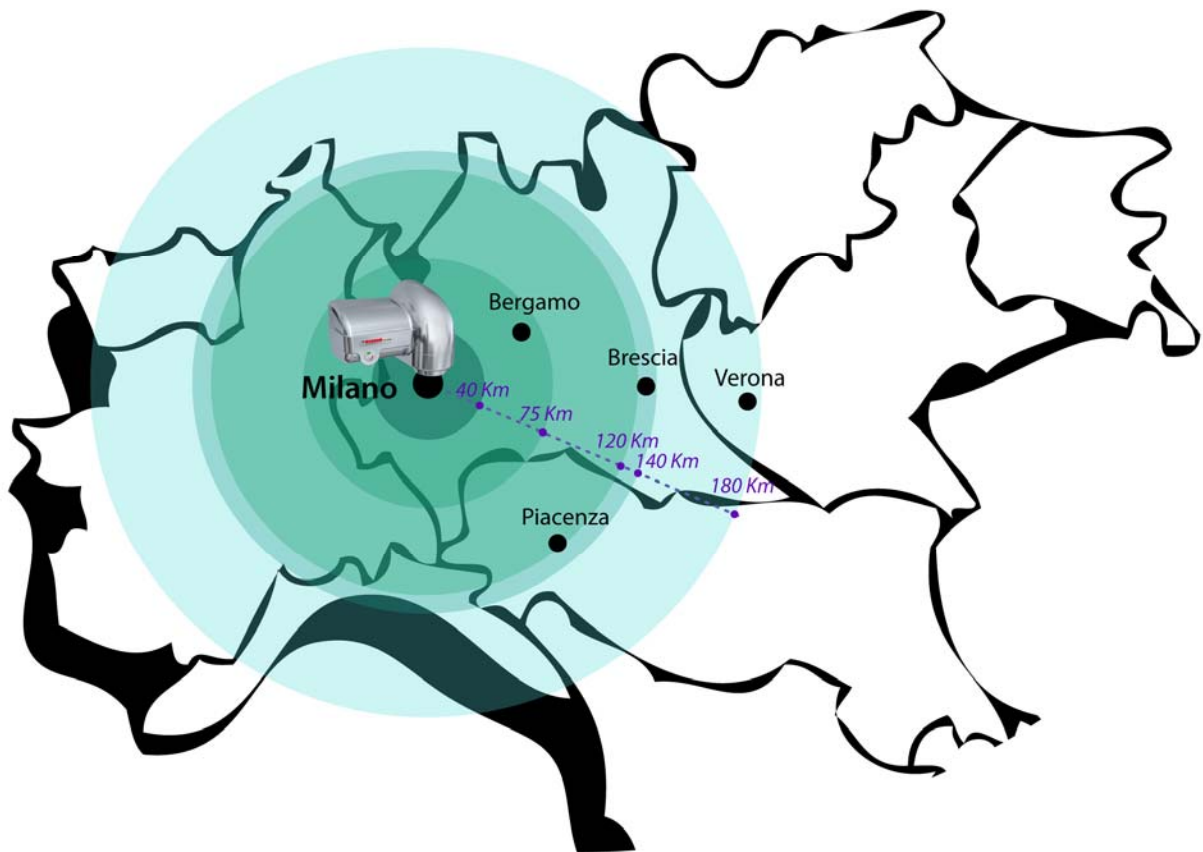
The below chart indicates the list of recyclable material for each dryer

Weight of all material components of our FUMAGALLI HI-TECH													
Material	Aluminium	PA6 V0	ABS	PVC	Nylon	Brass	Zama	Steel	Copper	Mica Silicon	Glass	Ni-Cr 3020	Recyclable Materials through disassembling
Weight (gr)	2.946,00	80,70	43,00	1,80	0,40	6,20	324,00	694,70	670,60	7,00	0,40	3,00	83,9
	4.777,80												83,90
Dryer total weight													4.861,70



### 5.3. DISTANCE REDUCTION ON SOURCING RAW MATERIALS

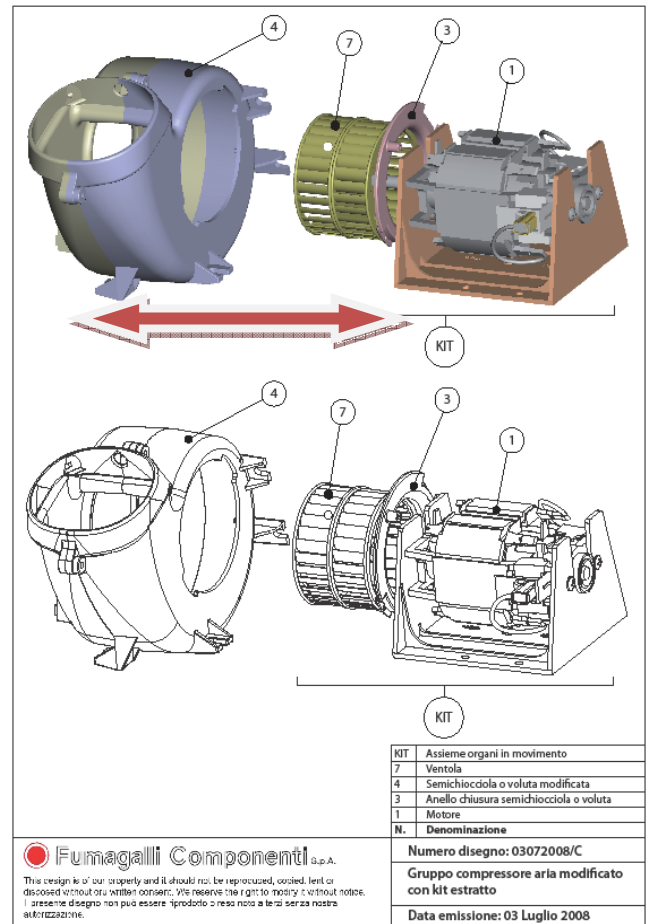
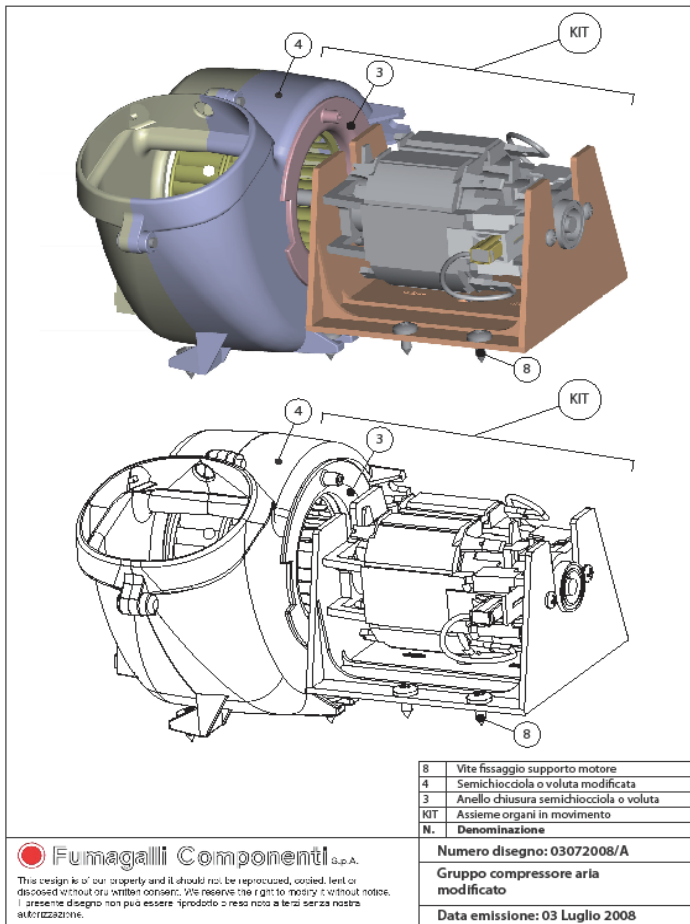
For choosing suppliers, Fumagalli decided to give importance to their distance from the company; in fact their maximum distance from production site is 180 Km. In this way we also managed to reduce by 62% the distances and therefore considerably reduce the environmental impact in terms of emission of CO2 and PM10 during transport of materials



## 6. PATENTS

### 6.1. LEM SYSTEM

*Patented LEM System (Long Life Easy Maintenance).* The innovative combined system of the new “**L.E.M. KIT LONGLIFE EASY MAINTENANCE**” “one block component” motor + fan, projected for maintenance optimization, increases dryer life by 60% for each single KIT (KIT can be replaced continuously, granting potentially endless life to the product), in comparison to traditional hand dryers available in the marketplace and reducing at the same time maintenance by 80%. Kit can be replaced, after end of life, very easily in less than 6 minutes and without removing dryer from the wall.



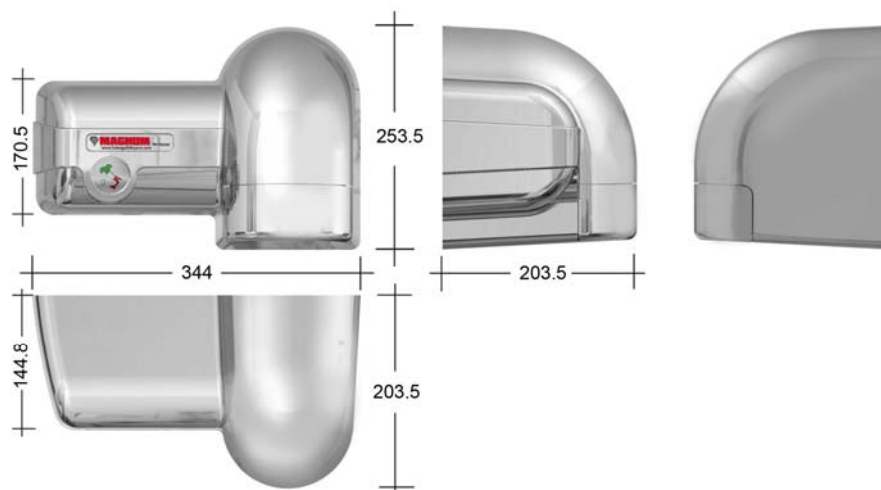
## 6.2. ELECTRONIC CONTROL

*Electronic control (under patent process)*

## 6.3. DESIGN

*Registered design N° MI20090 000034*

Dimensions in mm



#### 6.4. FINISHINGS AND VERSIONS

Available in the following finishings:

- Bright chromed aluminium
- Enameled white with anti microbial treatment, black or yellow

Available in the following versions

- Model EC (Eco Comfort) automatic: with temperature control regulation system
- Model ECP (Eco Comfort Powerful) automatic: with temperature control regulation system and airflow regulation