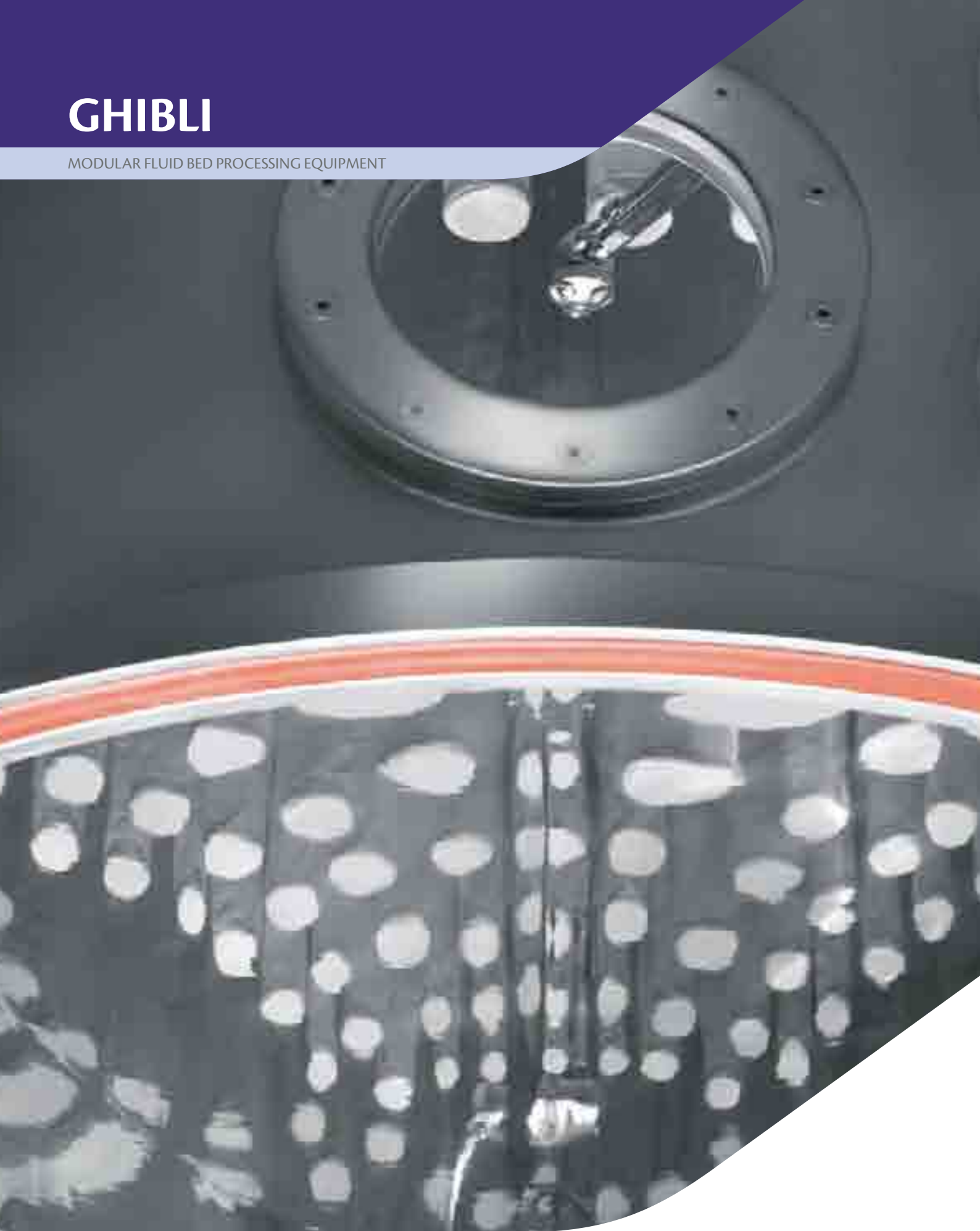


GHIBLI

MODULAR FLUID BED PROCESSING EQUIPMENT



GHIBLI FLUID BED PROCESSORS

The Ghibli is a very flexible fluid bed processing machine which can be set up to accept different product bowls, depending on the product formulation and type of application. The change from one insert to another can be done without tools and is therefore very quick and easy.



EXTREME VERSATILITY TO
ACHIEVE GREAT RESULTS FOR
EACH KIND OF PROCESS.

EASILY INTEGRATED WITH
OTHER GRANULATION
EQUIPMENT FOR HIGHLY
AUTOMATED AND
CONTAINED INSTALLATIONS.



CONTROL SYSTEM AND PROCESS ANALYTICAL TECHNOLOGY

The control system permits the adjustment of machine parameters and the saving of all recipes that can then be recalled when necessary. It can be equipped with all instrumentation supporting PAT, such as NIR applications to detect moisture content or API content uniformity in the product. It can be integrated with manufacturing execution systems for process supervision.



IMA product containers are fitted with an air distributor with screen designed to avoid product loss into the lower part of the machine. The air distributor is not welded to the container: it can be easily removed for inspection after cleaning.



Product sampling is carried out from the product bowl and, when necessary, under containment.



TOP SPRAY

APPLICATIONS

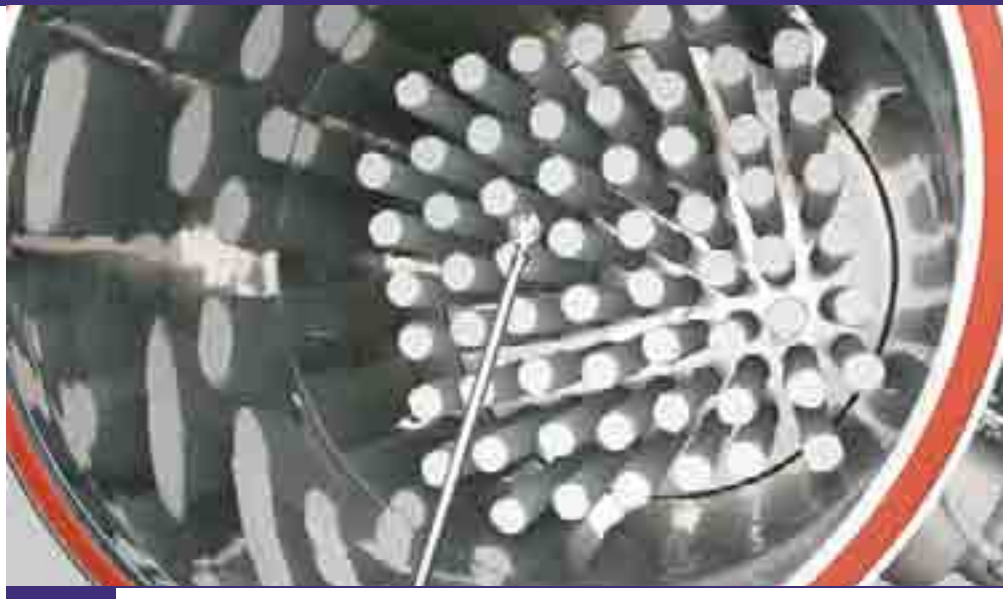
- DRYING
- AGGLOMERATION
- GRANULATION
- INSTANTIZING
- COATING

EXPECTED RESULTS

- CLOSE MIXING OF COMPONENTS
- PARTICLE SIZE AND DENSITY MODIFICATION
- INCREASED COMPRESSIBILITY
- IMPROVEMENT IN SOLUBILITY AND DISINTEGRATION PROPERTIES
- CONTROLLED RELEASE OF ACTIVE INGREDIENT
- TASTE MASKING

GHIBLI SERIES

EASY ACCESS TO
FILTER AREA.
INTERCHANGEABILITY
BETWEEN FABRIC AND
METALLIC FILTERS.

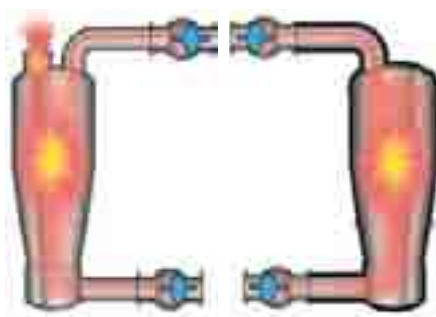


QUICK ACTION SAFETY
VALVES UP TO 12 BAR,
ATEX COMPLIANT.



SPRAYING SYSTEM

The patented spraying system operates by means of a binary nozzle avoiding dripping. Pressure, volume or weight of spraying solution can be controlled by PLC.



SAFETY

The constant air flow in the processing chamber ensures steady concentration of air suspended powders and/or solvents, significantly reducing deflagration risks. Quick Action Safety Valves are installed on inlet and outlet air ducts, to contain internal pressures that exceed the pre-set value. Earth connections are applied to different parts of the plant to avoid electrostatic charges. A continuous check on the electric absorption capacity of the earthed connection activates an automatic energy cut off in case of anomaly. Ghibli standard installation is designed to withstand an overpressure up to 3 bar. Installations up to 12 bar, ATEX compliant, are also available.



CHAMBER ROTATION AND FILTERS

The granulation chamber can be lowered and rotated by means of a patented system: all movements are PLC controlled. Filter change and positioning are carried out from the external part of the machine without any need of lifts or platforms: the operator is always positioned at floor level. On the same machine it is possible to fit either fabric or metallic filters. The fabric filters are produced in antistatic material, while the metallic filters are fitted with a unique patented system for cleaning them in place. The cleaning of filters during the process is done by absolute filtered compressed air and is completely automatic, avoiding interruption of the process cycle.



OPTIMIZATION OF CLEANING TIMES
AND WATER CONSUMPTION.



CLEAN IN PLACE

The machine is fitted with high flow Clean In Place system to optimize cleaning times and water consumption. All cleaning cycles can be edited and recorded and thereafter can be easily recalled and reproduced. A printout of washing parameters for batch recording is also possible.

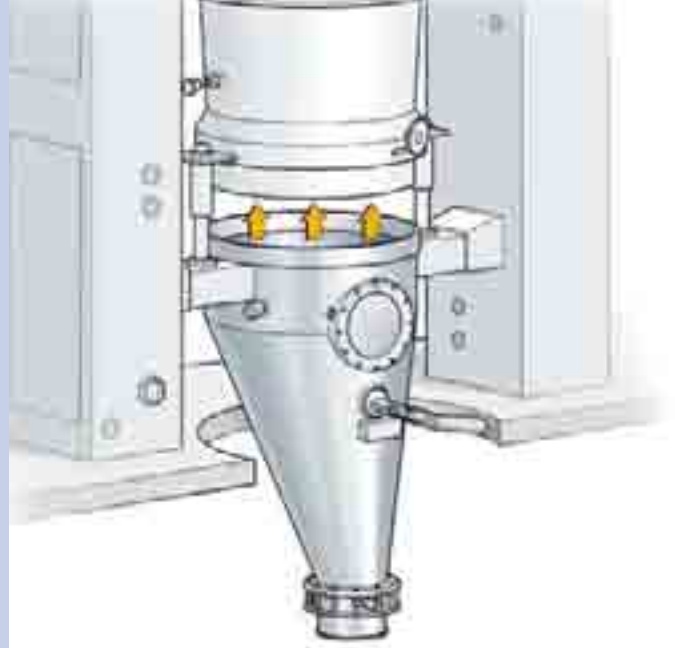


GHIBLI SERIES



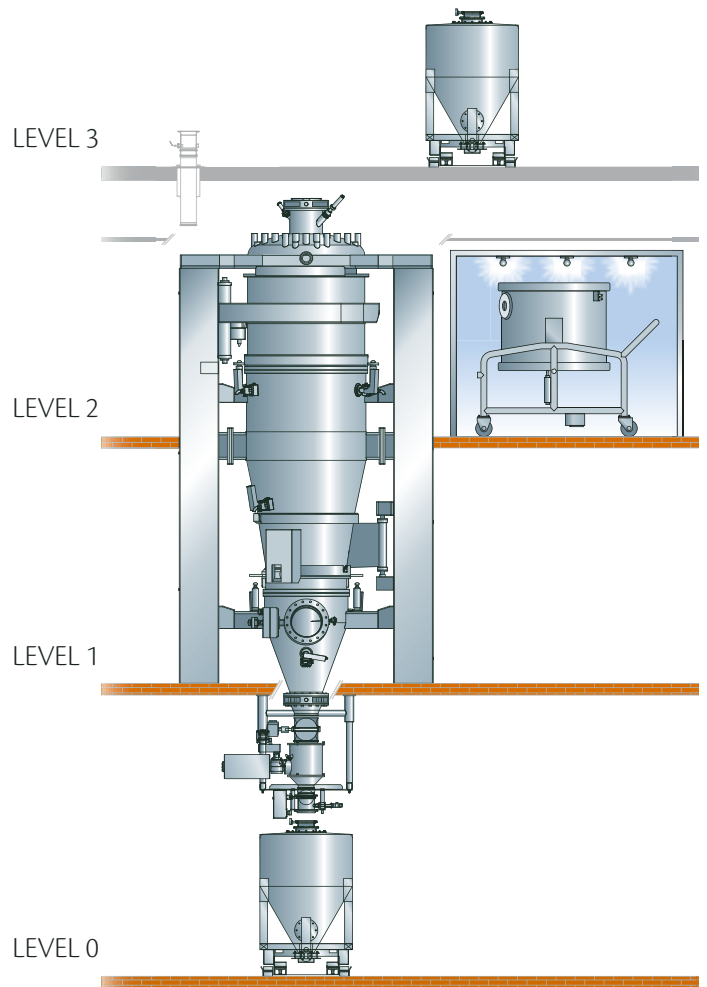
GHIBLI LABORATORY

THREE GHIBLI LABORATORY MODELS ARE AVAILABLE FOR SMALL BATCH PRODUCTION AND LABORATORY APPLICATIONS: 1, 3 OR 7 LITRE CAPACITY. THE EQUIPMENT STANDS ON A WHEELED STRUCTURE AND THE INSTALLATION IS LIMITED TO ELECTRIC POWER AND COMPRESSED AIR UTILITIES. ALL OPERATIONS ARE CONVENIENT DUE TO THE LARGE WORK SURFACE.

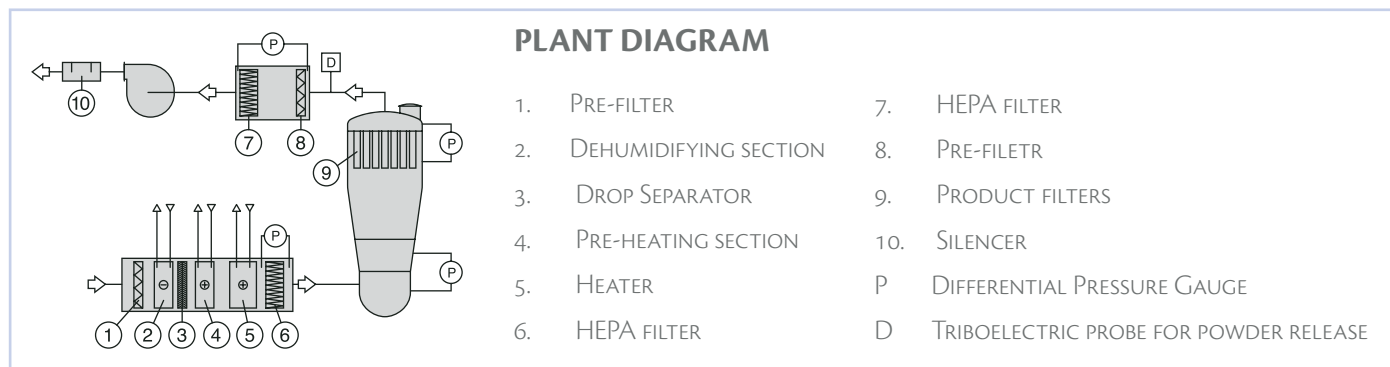


CUSTOMIZED APPLICATIONS

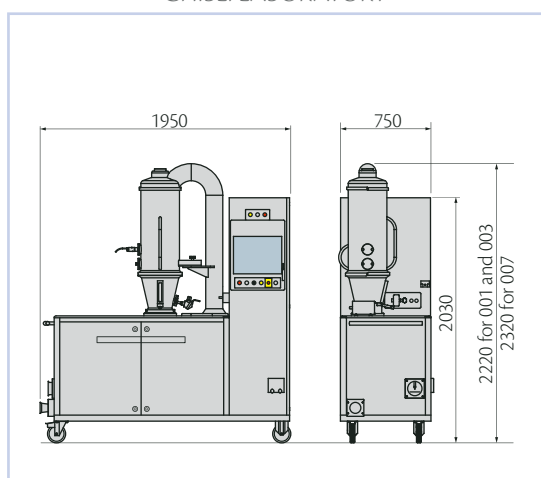
IMA is able to supply several customized installations for vertical product discharge to lower floor, 1-2-3 level plants, etc.



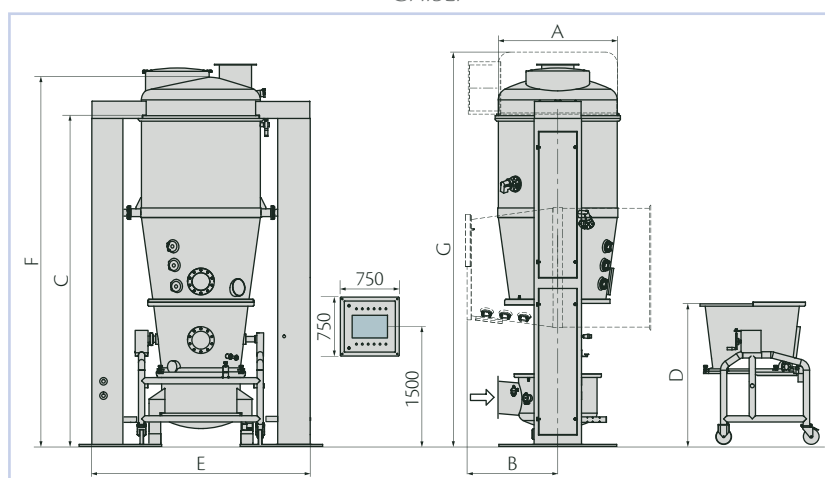
GHIBLI TECHNICAL DATA



GHIBLI LABORATORY



GHIBLI



GHIBLI	1	3	7	25	50	100	150	200	300	400	700	1000	
Container volume (l)	6	15	18	66	116	320	442	480	668	770	1,173	1,400	
Product volume (l)	1÷3	3÷6	7÷12	20÷52	35÷92	96÷256	133÷354	144÷384	200÷534	231÷616	352÷938	420÷1,120	
Fan Unit	Air flow rate (m ³ /h)		450	900	1,000	1,800	3,000	4,000	6,000	8,000	10,000	13,000	
	Diff. pressure (mbar)		40	90					95				
	Motor power (kW)		2	9	15	19	22		30	37	55	75	
	Heating capacity (kW)		7	30	34	61	101	135	202	269	337	438	
	Heating fluid		N.A.	5 ata/4 bar									
	Steam consumption (kg/h)		N.A.	50	60	118	190	230	354	427	575	748	
Requested utilities	Compressed air consumption (nl/min)		220	450	850	900	1,600		2,100		2,500		
	Compressed air pressure (nl/min)		6	6									
	Spray nozzle ports (n)		3	3			4						
Characteristics, dimensions and weight	A (Ø mm)		-	600	700	900	1,250		1,515		1,820		
	B (mm)		-	555	665	770	970	1,060	1,245	1,250	1,465	1,780	
	C (mm)		-	2,200	2,500	2,900	3,165	3,465	3,850	4,150	4,980	5,680	
	D (mm)		-	1,170	1,295	1,415	1,425	1,480	1,650	1,800	2,290	2,335	
	E (mm)		-	1,460		1,585	2,530		2,785		3,270		
	F vertical rupture disc (mm)		-	2,535	2,840	3,300	3,600	3,900	4,370	4,680	5,780	6,480	
	G horizontal rupture disc (mm)		-	2,660	2,960	3,420	3,765	4,065	4,540	4,890	5,890	6,600	
	Weight (kg)		545	540	550	1,500	1,600	2,500	2,900	3,000	3,400	3,600	4,000

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Certificate
N. IT00/0415