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ULV Cold Fogging Applicators



Turbostar
Twinstar
Compactstar
Starlet





FONTAN ULV-E
Our first electrically driven ULV spraying applicator

In spraying terms, ULV (Ultra Low Volume) is defined as the smallest volume of liquid required which is necessary to achieve the treatment objective. Generally, using the ULV spraying mode, the quantity of spraying liquid required lies between 0.5 and 50 litres per hectare, depending on the environment and treatment objective. As a rule, for mosquito control, the volume required tends to be at the lower end of the range, whereas for plant protection in plantations and greenhouses it is at the higher end of the range.

In 1979, we introduced the first electrically driven FONTAN ULV fine spraying applicator into the market, which founded our reputation as pioneers of fine spraying technology. The current programme of modern and efficient ULV aerosol generators is based on our wealth of experience.

We are certified as compliant with DIN EN ISO 9001.

FONTAN is our range of ULV cold fogging applicators for the efficient and economic control of insects, pests, fungi, viruses and bacteria:

- Plant protection in greenhouses for ornamental plants, fruit and vegetables
- Stock protection in warehouses, silos and plants for processing foodstuffs, agricultural products, textiles and tobacco
- Health and hygiene in public, private and commercial areas and also in the livestock industry (pest control, inhalation vaccination in intensive animal keeping)
- Disinfection measures in areas occupied by people and also in the livestock and foodstuff industries



Turbostar



Twinstar



Compactstar



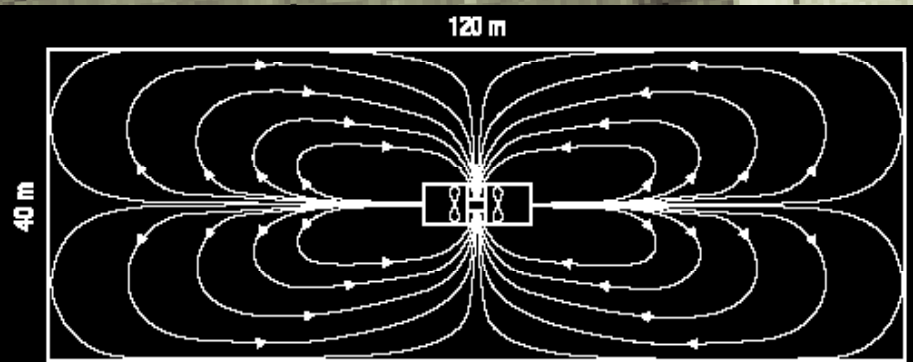
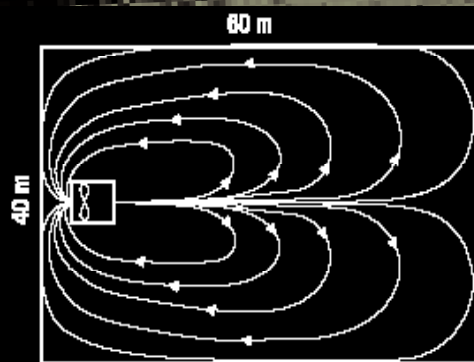
Starlet

FONTAN Turbostar, with one blower, height adjustable, fully automatic operation.

FONTAN Twinstar, with two blowers, height adjustable, fully automatic operation.

FONTAN Compactstar, with the same performance data as the Turbostar, semi-automatic operation.

FONTAN Starlet, for small areas and rooms, operates in either ULV or LV (Low Volume) mode.



Droplet distribution and range of the FONTAN Twinstar, 2 x 60 x 40 m (4,800 m²). Range of the FONTAN Turbostar and FONTAN Compactstar applicators, 60 x 40 m (2,400 m²). Much larger areas can be treated by means of additional blowers.



The FONTAN cold fogging applicators Twinstar, Turbostar, Compactstar and Starlet are driven by electrical motors.

Maintenance-free, low pressure rotation pumps (in the case of the FONTAN Starlet, a turbine), which require no lubrication, produce an air flow at high velocity, which is further accelerated by a swirl vane in the nozzle module. The resulting Venturi effect produces a negative pressure, which draws the spraying liquid, via the suction hose, to the nozzle module, where the liquid is atomized into a fine aerosol fog. The low pressure method makes it possible to use spraying nozzles that have relatively large bores so that even wettable powder spraying mixtures can be applied without any problems.

The larger applicators, that have blowers and stators, distribute the aerosol droplets up to a distance of 60 m per blower. The distribution is performed uniformly through horizontal and vertical air circulation.



Operating and programming panel of the FONTAN Turbostar and Twinstar with fully automatic programming functions:

- Timer for the preselection of the starting time.
- Permanent agitation of the spraying mixture to maintain a stable suspension of the active substance in the spraying tank. It is possible to switch off this function.
- Permanent air circulation generated by the blower(s) for the transportation and optimized distribution of the fog droplets with programmable pre and post blower running time.
- The fogging time is directly related to the volume of liquid to be sprayed, i.e. the applicator operates for as long as it is necessary to spray the pre-set volume of spraying liquid, dependent on its viscosity.
- After spraying, the feed lines and nozzles are cleaned by a flushing process. The flushing time is adjustable.
- Automatic shutdown on completion of the entire process.

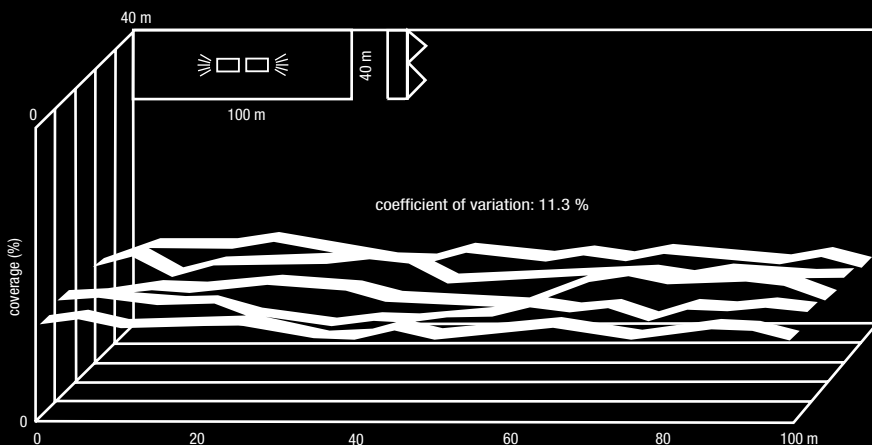
All functions can also be manually activated.



The picture shows the fog produced by a FONTAN Starlet.

Spray gun of the FONTAN Starlet with a trigger and a locking device for continuous operation.

The FONTAN Starlet can be operated in either ULV application mode (with a flow rate between 2.6 and 10.8 l/h) or in LV mode (with a flow rate between 7 and 50 l/h), dependent on the nozzle size selected.



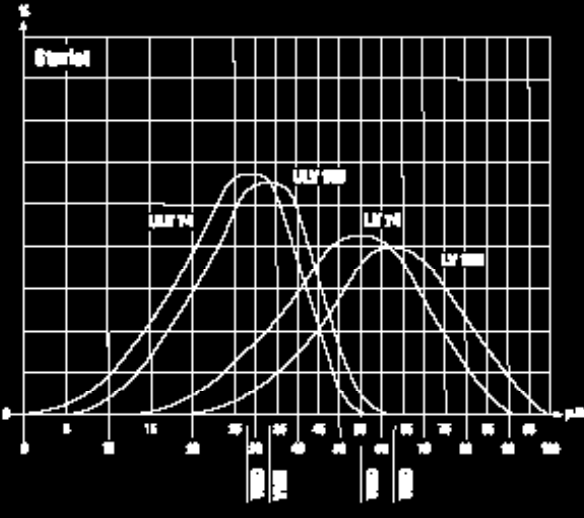
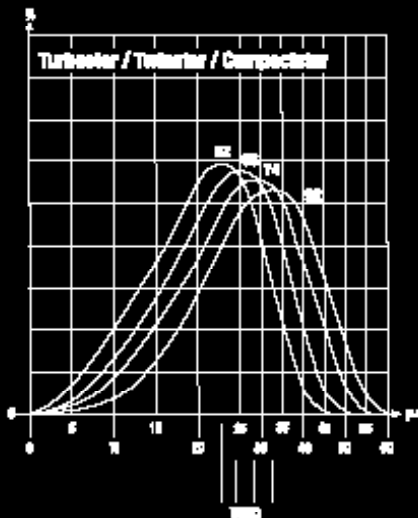
Our design of a combined blower/stator guarantees an even coverage of the complete treatment area. The illustration shows a result of a treatment having a coefficient of variation of only 11.3 % between the highest and the lowest coverage.



Picture showing the fog produced by FONTAN Turbostar, Twinstar and Compactstar.

Typical droplet distribution generated by FONTAN cold fogging applicators using various nozzles and water as the spraying liquid.

Combined blower and stator. The stator directs the air flow, without turbulence, and guarantees droplet transportation up to a distance of 60 m. The power of the blower and the design of the stator provide a uniform coverage even for large areas.



Technical Data (approx.)	FONTAN Turbostar	FONTAN Twinstar	FONTAN Compactstar	FONTAN Starlet																								
Motor	0.75 kW, single-phase, alternating current	1.5 kW, three-phase	1.1 kW, single-phase, alternating current	1.5 kW, collector motor																								
Speed	2,800 min ⁻¹ (50 Hz) 3,400 min ⁻¹ (60 Hz)	2,800 min ⁻¹ (50 Hz) 3,400 min ⁻¹ (60 Hz)	2,800 min ⁻¹ (50 Hz) 3,400 min ⁻¹ (60 Hz)	21,000 min ⁻¹																								
Protection	Thermal couple and automatic shutdown	Thermal couple and automatic shutdown	Thermal couple	Contact breaker in the main switch																								
Compressor / Turbine	Rotation pump (oil- and maintenance-free)	Rotation pump (oil- and maintenance-free)	Rotation pump (oil- and maintenance-free)	Three stage turbine																								
Air volume	35 m ³ /h	70 m ³ /h	35 m ³ /h	32 m ³ /h																								
Pressure	0.35 bar	0.35 bar	0.35 bar	0.35 bar																								
Drive	V-belt	V-belt	V-belt	Direct drive																								
Speed	2,610 min ⁻¹	5,000 min ⁻¹	2,960 min ⁻¹	21,000 min ⁻¹																								
Agitator	24 V DC motor with on/off switch	24 V DC motor with on/off switch	Pneumatic, can be deactivated	Not applicable																								
Blower	Single-phase, alternating current, 320 W	2 x three-phase, 320 W per blower	Axial blower																									
Speed	2,800 min ⁻¹ (50 Hz) 3,400 min ⁻¹ (60 Hz)	2,800 min ⁻¹ (50 Hz) 3,400 min ⁻¹ (60 Hz)	2,800 min ⁻¹ (50 Hz) 3,400 min ⁻¹ (60 Hz)	Not applicable																								
Air volume	4,850 m ³ /h	2 x 4,850 m ³ /h = 9,700 m ³ /h	4,850 m ³ /h																									
Control Panel																												
Timer	Preselection of the starting time up to 10 hours	Preselection of the starting time up to 10 hours	Optional accessory	Not applicable																								
Program	Automatic program or manual operation of all functions	Automatic program or manual operation of all functions	Automatic shutdown	Not applicable																								
Agitation	Permanent, can be deactivated	Permanent, can be deactivated	During operation, can be deactivated	Not applicable																								
Blower	Pre and post running time can be programmed separately	Pre and post running time can be programmed separately	Operates during and post spraying	Not applicable																								
Fogging time	Dependent on the preselected output volume	Dependent on the preselected output volume	Dependent on the preselected output volume	On/off switch																								
Flushing	Automatic, flushing time programmable	Automatic, flushing time programmable	Manual	Not applicable																								
Shutdown	Automatic	Automatic	Automatic	On/off switch																								
Failure diagnosis	Failure code on the display	Failure code on the display	Not applicable	Not applicable																								
Spraying Tank	UV light resistant polyethylene, capacity 34 l	UV light resistant polyethylene, capacity 34 l	Optional accessory, capacity 15 l or 34 l	Optional accessory, capacity 6 l, 11 l or 34 l																								
Flushing Tank	Polyethylene, capacity 2.5 l	Polyethylene, capacity 2.5 l	Polyethylene, capacity 1 l	Not applicable																								
Spraying Mode	ULV	ULV	ULV	ULV or LV																								
Fogging Data																												
Range	60x40 m	120x40 m	60x40 m	500 m ² / 2,000 m ³																								
Flow rate dependent on nozzle size (test values with water)	Nozzle 62 - 2.9 l/h Nozzle 68 - 3.3 l/h Nozzle 74 - 3.8 l/h Nozzle 92 - 5.7 l/h Nozzle 100 - 6.8 l/h Nozzle 120 - 8.7 l/h	2 x Nozzle 62 - 5.8 l/h 2 x Nozzle 68 - 6.6 l/h 2 x Nozzle 74 - 7.6 l/h 2 x Nozzle 92 - 11.4 l/h 2 x Nozzle 100 - 13.6 l/h 2 x Nozzle 120 - 17.4 l/h	Nozzle 62 - 2.9 l/h Nozzle 68 - 3.3 l/h Nozzle 74 - 3.8 l/h Nozzle 92 - 5.7 l/h Nozzle 100 - 6.8 l/h Nozzle 120 - 8.7 l/h	<table border="1"> <thead> <tr> <th>Nozzles</th> <th>ULV</th> <th>LV</th> </tr> </thead> <tbody> <tr> <td>62</td> <td>2.6 l/h</td> <td>7.0 l/h</td> </tr> <tr> <td>68</td> <td>3.0 l/h</td> <td>8.1 l/h</td> </tr> <tr> <td>74</td> <td>3.5 l/h</td> <td>9.3 l/h</td> </tr> <tr> <td>92</td> <td>4.8 l/h</td> <td>13.8 l/h</td> </tr> <tr> <td>100</td> <td>5.5 l/h</td> <td>17.4 l/h</td> </tr> <tr> <td>120</td> <td>7.3 l/h</td> <td>28.2 l/h</td> </tr> <tr> <td>without nozzle</td> <td>10.8 l/h</td> <td>50.0 l/h</td> </tr> </tbody> </table>	Nozzles	ULV	LV	62	2.6 l/h	7.0 l/h	68	3.0 l/h	8.1 l/h	74	3.5 l/h	9.3 l/h	92	4.8 l/h	13.8 l/h	100	5.5 l/h	17.4 l/h	120	7.3 l/h	28.2 l/h	without nozzle	10.8 l/h	50.0 l/h
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Electrical Data	220 - 240 V / 50 Hz or 110 - 130 V / 60 Hz or 220 - 240 V / 60 Hz	220-240 V / 380 - 415 V / 50 Hz or 208 / 360 V / 60 Hz	220 - 240 V / 50 Hz or 110 - 130 V / 60 Hz or 220 - 240 V / 60 Hz	220 - 240 V / 50 / 60 Hz or 110 - 130 V / 50 / 60 Hz																								
System protection	IP 43	IP 43	IP 43	IP 43																								
Weight, empty	81.5 kg	98.5 kg	34.5 kg (without spraying tank)	12 kg (without spraying tank)																								
Dimensions (L x W x H)	115x90x165 cm	115x90x165 cm	65x40x85 cm (without spraying tank)	39x36x30 cm (without spraying tank)																								

Subject to technical modifications.

Accessories	FONTAN Turbostar	FONTAN Twinstar	FONTAN Compactstar	FONTAN Starlet
Spraying tank	• 34 l (with agitator)	• 34 l (with agitator)	○ 15 l (with pneumatic agitator) ○ 34 l (with pneumatic agitator)	○ 6 l (with holder) ○ 11 l (with holder) ○ 34 l (with holder)
Flushing tank	•	•	•	–
Cleaning cap for nozzles	•	•	–	–
Spraying mixture funnel with strainer	•	•	•	•
Allen key/screw driver	•	•	•	•
Set of nozzles	• 74 (installed)/62/68/92	• 2 x 74 (installed)/62/68/92	• 74 (installed)/62/68/92	• 74 (installed)/62/68/92
Nozzles	○ 100/120	○ 100/120	○ 100/120	○ 100/120
Timer	•	•	○	–
Air and spraying mixture extension hose, 2 m, with connectors	–	–	–	○
Instruction manual	•	•	•	•

- Standard accessory (supplied with every machine)
- Optional accessory (available at extra cost)
- Not applicable

FONTAN Starlet spraying tanks made of UV light resistant polyethylene



Spraying tank with holder, feed line and pressure tube, capacity 6 l

Spraying tank with holder, feed line and pressure tube, capacity 11 l

Spraying tank with holder, feed line and pressure tube, capacity 34 l

FONTAN Compactstar spraying tanks made of UV light resistant polyethylene and timer



Spraying tank with suction hose, capacity 15 l

Spraying tank with suction hose, capacity 34 l

Timer for automatic operation, for connection to the applicator socket