

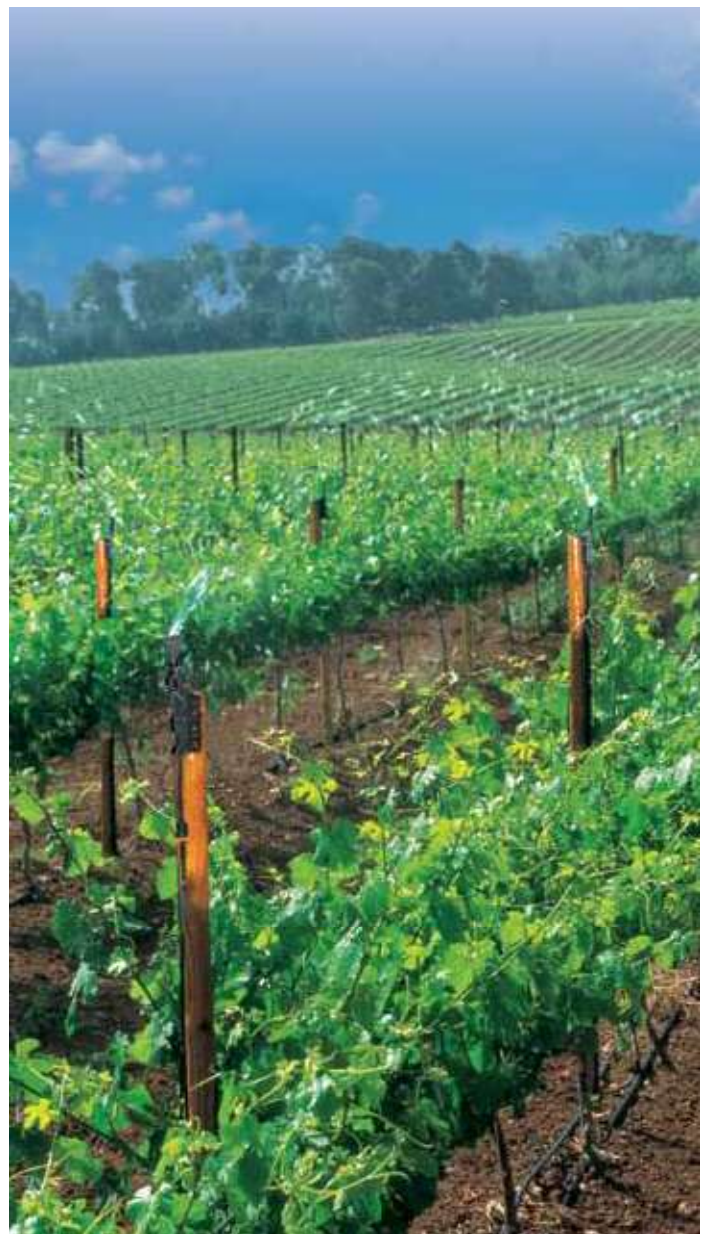
FLIPPER



The most economical frost protection for vineyards

STRUCTURE AND FEATURES

- Spreads water in a very long and narrow strip, targeting the vine rows only
- Saves up to 70% of water compared to conventional overhead systems
- Large droplets minimize the cooling effect when starting the system
- Safe operation under frost conditions
- Optional flow regulator for hilly terrain or long rows
- Low installation and pumping costs
- Dry pathways reduce waterlogging and facilitate access for workers and equipment soon after operation



COMPONENTS



Flipper



Optional protecting box



Stabilizer

Flow Regulators



25 l/h



35 l/h



43 l/h

TECHNICAL DATA

- Recommended working pressure: 2.0-3.0 bar
- Flow rate: 25-45 l/h
- Filtration requirements: 130 microns (120 mesh)

TIPS FOR INSTALATION & OPERATION

- Ensure that the water stream is in line with the vine rows.
- Anchor the Flipper firmly to the post.
- Start the system before the critical damaging temperature is reached.
- To decide on a suitable start-up temperature, consider the dew points (see chart below).
- Stop the system only when the outside temperature is constant above 1°C.

PERFORMANCE TABLE

| Nozzle color | Flipper color | Flow rate (l/h) (at 2 bar) | Maximal recommended spacing (m) between flippers** |
|--------------|---------------|----------------------------|----------------------------------------------------|
| Black | Black | 25* | 6.0 |
| Violet | Black | 35* | 7.0 |
| Brown | Brown | 43* | 9.0 |

* For regulated unit: 2.5-4.0 bar

** When Flippers mounted 1.0 m above the target

AMOUNT OF WATER (m³/ha/hr) REQUIRED BY FLIPPER FROST PROTECTION SYSTEM* AND WATER SAVING COMPARED TO CONVENTIONAL 40 m³/ha/hr SYSTEM

| Nozzle color | Vineyard with 3.0 m row spacing | % of water saving | Vineyard with 2.5 m row spacing | % of water saving |
|--------------|---------------------------------|-------------------|---------------------------------|-------------------|
| Black | 14.0 | 65 | 16.0 | 58 |
| Violet | 16.6 | 58 | 20.0 | 50 |
| Brown | 16.0 | 60 | 19.0 | 52 |

* When Flippers are at maximal spacing, at 2 bar pressure

RECOMMENDED START-UP TEMPERATURES FOR FROST PROTECTION AT VARIOUS DEW POINTS

| Dew point temp. (°C) | -9.5 | -9.0 | -8.5 | -8.0 | -7.5 | -6.5 | -6.0 | -5.5 | -5.0 | -4.5 | -4.0 | -3.5 | -3.0 | -2.0 | -1.5 |
|----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Start-up temp. (°C) | +4.0 | +4.0 | +3.5 | +3.5 | +3.0 | +3.0 | +3.0 | +2.0 | +2.0 | +1.5 | +1.5 | +1.0 | +1.0 | +0.5 | +0.5 |

