

BIOLINE DRIPPERLINE

WASTEWATER DIVISION

The world's most advanced continuous self-cleaning, pressure-compensating dripperline for wastewater.



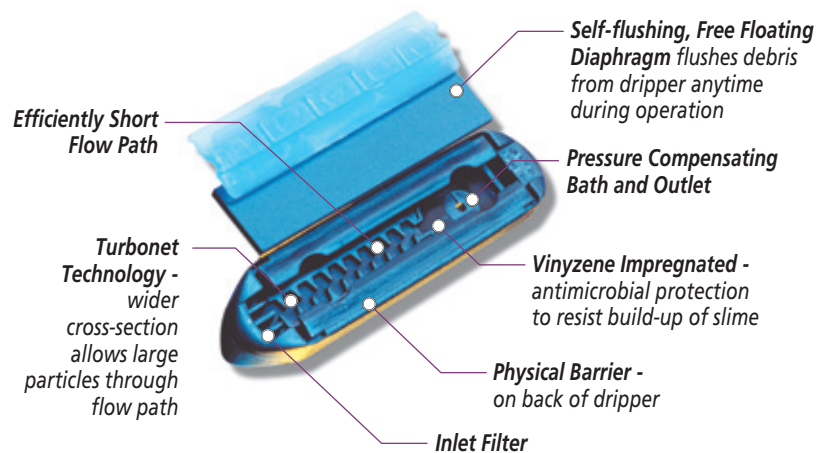
Applications

- Can be used with domestic septic tank effluent of 220/220 (ppm) BOD/TSS with proper design, filtration and operation
- Typically installed following a treatment process
- Reuse applications including municipally treated effluent designated for irrigation

Features/Benefits

- Pressure Compensation - all drippers deliver equal flow, even on sloped or rolling terrain.
- Unique Flow Path - Turbonet technology provides more control of water and a high resistance to clogging.
- Continuous Self-Flushing Dripper Design - flushes debris, as it is detected - throughout operation, not just at the beginning or end of a cycle. Ensures uninterrupted dripper operation.
- Single Hole Dripper Outlet from Tubing:
 - Better protection against root intrusion
 - Allows the dripperline to be used in subsurface applications without need for chemical protection
- Drippers Capture Water Flow From the Center of the Tubing - ensures that only the cleanest flow enters the dripper.
- Built-In Physical Root Barrier - drippers are protected from root intrusion without the need for chemical protection. Water exits dripper in one location while exiting the tubing in another.
- Three Dripper Flow Rates - provides the broadest range of flow rates available. Allows the designer to match the dripperline to any soil or slope condition.
- Bioline Tubing is Completely Wrapped in Purple - the complete tubing is purple, easily identifying it as a non-potable, regardless of how the tubing is installed.
- Vinyzene-Impregnated Drippers - prevents buildup of microbial slime.
- Can be used subsurface - Bioline can be installed on-surface, under cover or subsurface.
- No Special Storage Requirements - does not degrade if stored outdoors.
- Techfilter Compatible - an optional level of protection, provides a limited lifetime warranty against root intrusion.

EXPLODED VIEW OF BIOLINE DRIPPER



Specifications

- Dripper flow rates: 0.4, 0.6 or 0.9 GPH
- Dripper spacings: 12", 18" or 24" dripper spacings and blank tubing
- Pressure compensation range: 7 to 70 psi (stainless steel clamps recommended above 50 psi)
- Maximum recommended system pressure: 50 psi
- Tubing diameter: 0.66" OD, 0.57" ID
- Tubing color: Purple color indicates non-potable
- Coil lengths: 500' or 1,000' (Blank tubing in 250')
- Recommended filtration: 120 mesh
- Bending radius: 7"
- UV resistant
- Tubing material: Linear low-density polyethylene

Additional flow, spacings, and pipe sizes available by special order. Please contact Netafim USA Customer Service for details.

BIOLINE DOSING CHART Maximum Length (feet) of a Single Lateral

| Dripper Spacing | | 12" | | | 18" | | | 24" | | |
|-------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Dripper Flow Rate (GPH) | | 0.4 | 0.6 | 0.9 | 0.4 | 0.6 | 0.9 | 0.4 | 0.6 | 0.9 |
| Inlet Pressure (psi) | 15 | 292 | 233 | 175 | 410 | 322 | 247 | 510 | 405 | 308 |
| | 25 | 397 | 312 | 238 | 558 | 438 | 335 | 660 | 550 | 423 |
| | 35 | 486 | 365 | 279 | 656 | 514 | 394 | 760 | 649 | 497 |
| | 45 | 520 | 407 | 311 | 732 | 574 | 439 | 880 | 725 | 555 |

Lateral lengths are calculated for operation while dosing, and allow for the pressure at the end of the dripperline to be 7 psi or greater. These data do not take scouring velocity into account.

BIOLINE FLUSHING CHART Maximum Length of a Single Lateral (feet) Allowing for 2 fps Scouring Velocity

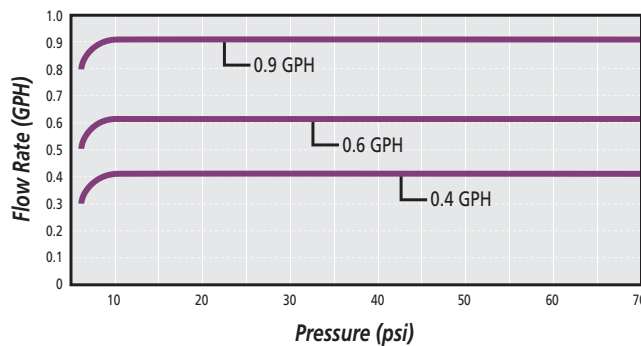
| Dripper Spacing | | 12" | | | 18" | | | 24" | | |
|-------------------------|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Dripper Flow Rate (GPH) | | 0.4 | 0.6 | 0.9 | 0.4 | 0.6 | 0.9 | 0.4 | 0.6 | 0.9 |
| Inlet Pressure (psi) | 15 Inlet 8Δ | 115 | 100 | 85 | 160 | 140 | 120 | 210 | 190 | 170 |
| | 25 Inlet 18Δ | 200 | 170 | 140 | 270 | 230 | 200 | 360 | 320 | 280 |
| | 35 Inlet 28Δ | 260 | 210 | 180 | 360 | 300 | 250 | 470 | 410 | 350 |
| | 45 Inlet 38Δ | 310 | 250 | 210 | 420 | 350 | 290 | 560 | 490 | 420 |

Lateral lengths are calculated to achieve 2 fps scouring velocity and pressure at the distal end of the lateral to be 7 psi.

BIOLINE Flow per 100 Feet

| Dripper Spacing | 0.4 GPH Dripper | | 0.6 GPH Dripper | | 0.9 GPH Dripper | |
|-----------------|-----------------|------|-----------------|------|-----------------|------|
| | GPH | GPM | GPH | GPM | GPH | GPM |
| 12" | 40.0 | 0.67 | 61.0 | 1.02 | 92.0 | 1.53 |
| 18" | 26.7 | 0.44 | 41.0 | 0.68 | 61.0 | 1.02 |
| 24" | 20.0 | 0.34 | 31.0 | 0.51 | 46.0 | 0.77 |

BIOLINE Dripper Flow Rate vs. Pressure



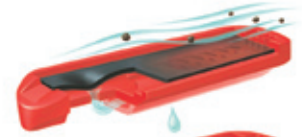
Between 0 and 7 psi, the dripper functions as a turbulent flow emitter, ensuring that the nominal design flow is not exceeded at system start-up.

BIOLINE DRIPPER OPERATION

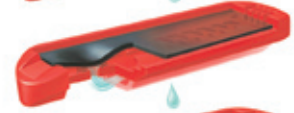
Bioline's **continuous** self-cleaning, pressure compensating dripper is a fully self-contained unit molded to the interior wall of the dripper tubing.

As shown at right, Bioline is continuously self-cleaning during operation, not just at the beginning and end of a cycle. The result is dependable, clog-free operation, year after year.

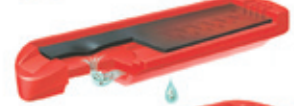
1. Regulating mode



2. Initiation of flushing cycle



3. Flushing cycle

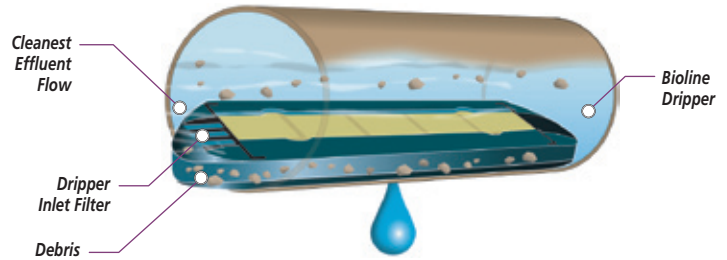


4. Regulating mode



CROSS SECTION OF BIOLINE DRIPPER

Shows how effluent enters the dripper from the center of the flow where it is the cleanest.



BIOLINE Specifying Information

| SAMPLE MODEL NUMBER | | |
|--------------------------|------------------------|--------------------|
| 1 | 2 | 3 |
| 08WRAM.6-24 V | | |
| A | | |
| 1 | 2 | 3 |
| Dripper Flow Rate | Dripper Spacing | Coil Length |
| 0.4 GPH = .4 | 12" = 12 | 500' = V500 |
| 0.6 GPH = .6 | 18" = 18 | 1,000' = V |
| 0.9 GPH = .9 | 24" = 24 | |

BLANK Tubing Model Number: 250' = 08WRAM-250

BIOLINE Ordering Information

| Flow Rate | Dripper Spacing | Coil Length | Model Number |
|-------------------|-----------------|-------------|-----------------|
| 0.4 GPH | 12" | 1,000' | 08WRAM.4-12V |
| | | 500' | 08WRAM.4-12V500 |
| 0.4 GPH | 18" | 1,000' | 08WRAM.4-18V |
| | | 500' | 08WRAM.4-18V500 |
| 0.4 GPH | 24" | 1,000' | 08WRAM.4-24V |
| | | 500' | 08WRAM.4-24V500 |
| 0.6 GPH | 12" | 1,000' | 08WRAM.6-12V |
| | | 500' | 08WRAM.6-12V500 |
| 0.6 GPH | 18" | 1,000' | 08WRAM.6-18V |
| | | 500' | 08WRAM.6-18V500 |
| 0.6 GPH | 24" | 1,000' | 08WRAM.6-24V |
| | | 500' | 08WRAM.6-24V500 |
| 0.9 GPH | 12" | 1,000' | 08WRAM.9-12V |
| | | 500' | 08WRAM.9-12V500 |
| 0.9 GPH | 18" | 1,000' | 08WRAM.9-18V |
| | | 500' | 08WRAM.9-18V500 |
| 0.9 GPH | 24" | 1,000' | 08WRAM.9-24V |
| | | 500' | 08WRAM.9-24V500 |
| Blank Tubing 17mm | | 250' | 08WRAM-250 |



TLCOUP
Insert Coupling



TLELL
Insert Elbow



TLTEE
Insert Tee



TLCROS
Insert Cross



TL050MA
1/2" Male Adapter



TL075MA
3/4" Male Adapter



TL075FTEE
Combination Tee
Ins x Ins x 3/4" FPT



TL2W075MA
2-Way Insert
3/4" MPT x Insert



TLIAPE-B
Insert Adapter for 1" or
Larger PE (Requires 11mm
or 7/16" drill or punch)



TLIAPVC-B
Insert Adapter with Grommet
1 1/2" or larger PVC Pipe



TDBIT16.5
Drill Bit for TLIAPVC
Fitting (16.5mm or 21/32")



TLDPLUG
Dripper Plug Ring to Close Off
Individual Dripper



TLFIG8
Figure 8 Line End



TLS6
6" Soil Staple



TLSOV
Shut-Off Valve
Ins x Ins



TLCV
Inline Check Valve

- Flow Range: 0.9 to 4.4 GPM
- Opening Pressure: 7.1 psi
- Closing Pressure: 5.7 psi

Fittings Definitions

FPT = Female Pipe Thread

MPT = Male Pipe Thread

Ins x Ins = Insert by Insert

Applications

- Fits Bioline Dripperline

Features/Benefits

- Barbed fittings for secure fit
- Easy installation without glue or tools
- Maximum recommended system pressure without clamps - 50 psi
- Allows for easy on-site inspection of proper fitting installation

Netafim USA - Delivering Total System Solutions for Wastewater

• Dripperlines • Filters • Valves • Air Vents • Flow Meters • Controllers



For more information call your Authorized Netafim USA Distributor or call Netafim USA Customer Service at (888) 638-2346.

W064 8/06