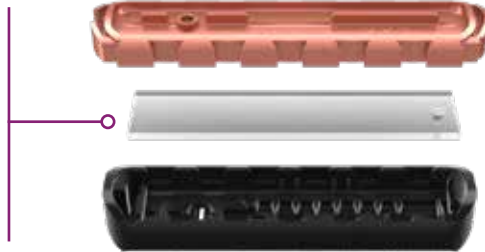


# BIOLINE® DRIPLINE

THE WORLD'S MOST ADVANCED CONTINUOUS  
SELF-CLEANING, PRESSURE COMPENSATING DRIPLINE  
SPECIFICALLY DESIGNED FOR WASTEWATER

Copper oxide is impregnated into the emitter serving as a natural antimicrobial agent to help prevent microbial activity.



## PRODUCT ADVANTAGES

- 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 dripline 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.
- Three dripper flow rates - provides the broadest range of flow rates available. Allows the designer to match the dripline to any soil or slope condition.
- Bioline tubing is completely wrapped in purple - easily identifying it for non-potable use, regardless of how the tubing is installed.
- Cupron copper oxide is impregnated at specific concentrations, our patent-pending process, ensuring it remains effective throughout the life of the product.
- Bioline can be installed on-surface, under cover or subsurface.
- No special storage requirements - does not degrade if stored outdoors.

## APPLICATIONS

- Typically installed following a treatment process
- Can be used with domestic septic tank effluent with proper design, filtration and operation
- Reuse applications including municipally treated effluent designated for irrigation and other disinfected and non-disinfected water sources.

## 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 58 psi
- Maximum recommended system pressure: 58 psi
- Tubing diameter: 0.66" OD, 0.56" 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 spacing and pipe sizes available by special order. Please contact Netafim USA Customer Service for details.

# BIOLINE DRIPLINE

## MAXIMUM LENGTH OF A SINGLE LATERAL WITH 3.0 fps FLUSH VELOCITY

ADDITIONAL FLOW OF 2.3 GPM REQUIRED PER LATERAL TO ACHIEVE 3 fps

DRIPPER SPACING		12"			18"			24"		
DRIPPER FLOW RATE (GPH)		0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH
INLET PRESSURE	15	102	94	84	136	127	113	161	151	137
	25	151	136	118	203	184	161	245	223	197
	35	193	171	146	260	232	200	315	283	245
	40	211	186	158	286	254	218	347	311	267
	45	228	200	169	310	274	233	377	335	287
Flow per 100' (GPM / GPH)		0.67/40	1.02/61	1.53/92	0.44/26.67	0.68/41	1.02/61	0.34/20	0.51/31	0.77/46

Lateral lengths are based on flows allowing for a 3 fps flushing/scouring velocity

## MAXIMUM LENGTH OF A SINGLE LATERAL WITH 2.5 fps FLUSH VELOCITY

ADDITIONAL FLOW OF 2.0 GPM REQUIRED PER LATERAL TO ACHIEVE 2.5 fps

DRIPPER SPACING		12"			18"			24"		
DRIPPER FLOW RATE (GPH)		0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH
INLET PRESSURE	15	128	115	100	172	155	136	205	187	165
	25	183	161	137	248	220	188	301	268	231
	35	228	198	166	310	272	229	379	333	283
	40	248	214	178	338	295	247	413	362	305
	45	266	229	190	364	316	263	447	389	327
Flow per 100' (GPM / GPH)		0.67/40	1.02/61	1.53/92	0.44/26.67	0.68/41	1.02/61	0.34/20	0.51/31	0.77/46

Lateral lengths are based on flows allowing for a 2.5 fps flushing/scouring velocity

## MAXIMUM LENGTH OF A SINGLE LATERAL WITH 2.0 fps FLUSH VELOCITY

ADDITIONAL FLOW OF 1.6 GPM REQUIRED PER LATERAL TO ACHIEVE 2.0 fps

DRIPPER SPACING		12"			18"			24"		
DRIPPER FLOW RATE (GPH)		0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH
INLET PRESSURE	15	161	141	119	217	191	164	263	233	201
	25	221	190	157	302	261	218	369	321	270
	35	269	229	187	370	316	260	455	391	324
	40	290	246	200	399	340	278	493	421	347
	45	310	261	212	427	362	296	527	449	369
Flow per 100' (GPM / GPH)		0.67/40	1.02/61	1.53/92	0.44/26.67	0.68/41	1.02/61	0.34/20	0.51/31	0.77/46

Lateral lengths are based on flows allowing for a 2 fps flushing/scouring velocity

## MAXIMUM LENGTH OF A SINGLE LATERAL WITH 1.5 fps FLUSH VELOCITY

ADDITIONAL FLOW OF 1.2 GPM REQUIRED PER LATERAL TO ACHIEVE 1.5 fps

DRIPPER SPACING		12"			18"			24"		
DRIPPER FLOW RATE (GPH)		0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH
INLET PRESSURE	15	201	171	140	275	235	194	337	289	241
	25	266	222	179	366	308	251	453	383	313
	35	316	262	210	437	365	295	543	455	369
	40	337	280	223	469	391	313	583	487	393
	45	358	296	235	497	413	331	619	517	415
Flow per 100' (GPM / GPH)		0.67/40	1.02/61	1.53/92	0.44/26.67	0.68/41	1.02/61	0.34/20	0.51/31	0.77/46

Lateral lengths are based on flows allowing for a 1.5 fps flushing/scouring velocity

## MAXIMUM LENGTH OF A SINGLE LATERAL WITH 1.0 fps FLUSH VELOCITY

ADDITIONAL FLOW OF 0.8 GPM REQUIRED PER LATERAL TO ACHIEVE 1.0 fps

DRIPPER SPACING		12"			18"			24"		
DRIPPER FLOW RATE (GPH)		0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH
INLET PRESSURE	15	248	205	163	344	285	228	427	355	285
	25	315	258	203	440	361	286	549	453	359
	35	367	299	234	513	419	331	643	527	417
	40	389	316	248	545	445	350	683	559	441
	45	409	332	260	574	468	367	721	589	463
Flow per 100' (GPM / GPH)		0.67/40	1.02/61	1.53/92	0.44/26.67	0.68/41	1.02/61	0.34/20	0.51/31	0.77/46

Lateral lengths are based on flows allowing for a 1 fps flushing/scouring velocity

## MAXIMUM LENGTH OF A SINGLE LATERAL WITH 0.5 fps FLUSH VELOCITY

ADDITIONAL FLOW OF 0.4 GPM REQUIRED PER LATERAL TO ACHIEVE 0.5 fps

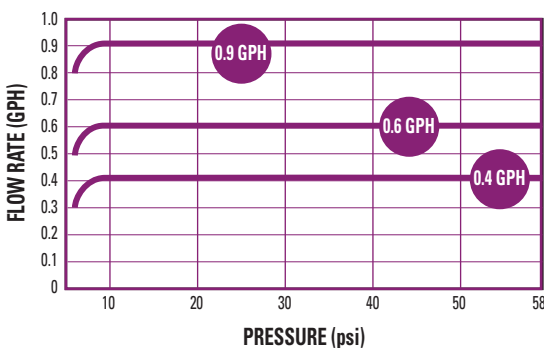
DRIPPER SPACING		12"			18"			24"		
DRIPPER FLOW RATE (GPH)		0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH	0.4 GPH	0.6 GPH	0.9 GPH
INLET PRESSURE	15	301	242	188	422	341	265	531	429	335
	25	369	296	228	520	418	323	655	527	409
	35	421	337	260	595	476	368	749	603	467
	40	443	354	273	626	501	387	790	635	491
	45	464	371	285	656	524	404	829	665	513
Flow per 100' (GPM / GPH)		0.67/40	1.02/61	1.53/92	0.44/26.67	0.68/41	1.02/61	0.34/20	0.51/31	0.77/46

Lateral lengths are based on flows allowing for a 0.5 fps flushing/scouring velocity

Netafim recommends flushing velocities capable of breaking free any accumulated bioslimes and debris in the piping network.

- Notes:
1. Refer to local regulations for information on flushing velocities that may be written into codes.
  2. Netafim does not endorse a specific flushing velocity.
  3. Flushing velocities should be determined based on regulations, quality of effluent, and type of flushing control.
  4. Using a flushing velocity less than 1 fps does not provide turbulent flow as defined by Reynolds Number.
  5. Higher flushing velocities provide more aggressive flushing.

## 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.

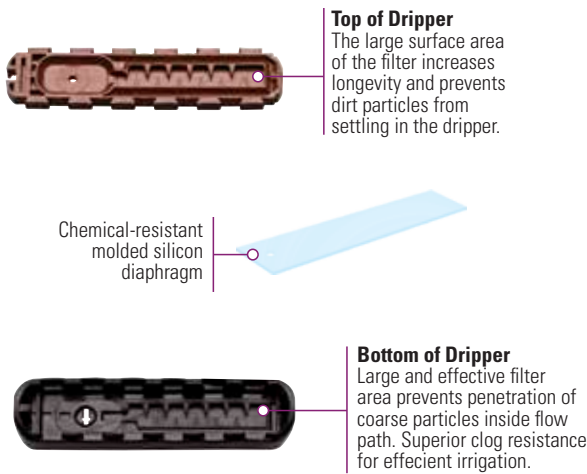
## FLOW PER 100 FEET

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

Netafim sets the bar for innovation in drip irrigation with copper. Cupron® copper oxide-based technology allows for maximum performance. The integration of copper oxide in the internal emitter, and the unique patented emitter design with physical root barrier provides two levels of protection, giving your system the protection it needs to fight against root intrusion.

- Cupron copper oxide provides one of two layers of defense against root intrusion, a physical root barrier inside the dripper provides the other.
- Cupron copper oxide technology will not wash out, wear off or leach out; remaining effective throughout the life of the product.
- Cupron copper oxide is approved for use by the EPA ensuring peace of mind.

### EXPLODED VIEW OF BIOLINE DRIPPER



### BIOLINE DRIPPER OPERATION

Bioline drippers are pressure compensating - delivering the water uniformly into the soil for further treatment or for reuse by the landscape. These unique drippers allow the tubing to be installed on flat topography or steep slopes.

Bioline drippers are protected against microbial activity. Copper oxide impregnated XR drippers – Copper, a natural antimicrobial material, is used to help prevent microbial activity.

Netafim drippers are 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.

### SPECIFYING INFORMATION

**A** Bioline Dripline = **08WRAM**

**SAMPLE MODEL NUMBER**  
**08WRAM.6-24 V**

**1** **DRIPPER FLOW RATE**  
0.4 GPH = .4  
0.6 GPH = .6  
0.9 GPH = 1

**2** **DRIPPER SPACING**  
12" = 12  
18" = 18  
24" = 24

**3** **COIL LENGTH**  
500' = V500  
1,000' = V

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

### 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'	08WRAM1-12V
		500'	08WRAM1-12V500
0.9 GPH	18"	1,000'	08WRAM1-18V
		500'	08WRAM1-18V500
0.9 GPH	24"	1,000'	08WRAM1-24V
		500'	08WRAM1-24V500
Blank Tubing 17mm		250'	08WRAM-250

# BIOLINE FITTINGS

## FITTING APPLICATIONS

- Fits Bioline Dripline

## FITTING SPECIFICATIONS

- Barbed fittings for a secure fit
- Easy installation without glue or tools
- Allows for easy on-site inspection of proper fitting installation



**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  
1/2" or larger PVC Pipe



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



**TLFIG8**  
Figure 8 Line End



**TLS6**  
6" Soil Staple

## FITTING DEFINITIONS

FPT = Female Pipe Thread  
MPT = Male Pipe Thread  
Ins x Ins = Insert by Insert



**TLSOV**  
Shut-Off Valve  
Ins x Ins



**TLCV**  
Inline Check Valve

- Flow Range: 0.9 to 4.4 GPM
- Opening Pressure: 10.2 psi
- Closing Pressure: 5.8 psi  
(13.4 Feet Column of Water)



**NETAFIM USA**  
5470 E. Home Ave.  
Fresno, CA 93727  
CS 888 638 2346  
www.netafimusa.com