



Advanced
Automation
Systems



We add value to your products



We design, develop and produce the most advanced emitters in drip irrigation industry. We offer a wide range of emitters in order to address all market needs

Emitter solutions

Our mission is to provide value to our partners by offering the most technically advanced solutions in the industry of drip irrigation. Our vision is to combine our knowledge, experience and expertise with the cutting-edge technology.

Who we are

A.A.S. by utilizing its knowledge experience and expertise offers the most advanced solutions for the drip irrigation industry worldwide. We constantly grow because we are committed to the continuous improvement of our products and services, which create value to our partners.

What we do

A.A.S. is a global leader in designing and developing comprehensive solutions for the drip irrigation industry. By utilizing our knowledge experience and expertise, we offer turnkey custom-made solutions for all manufacturing processes involved in drip irrigation. From the most advanced emitters and state of the art production lines, to a complete feasibility study for a production startup and market of the final products.

Emitter Solutions

Capitalizing our team's knowledge, experience and expertise, and combining that with the latest technology, we design, develop and produce the most advanced emitters in drip irrigation industry combined with the highest possible quality standards. The combination of these two pillars adds value to our partnership, and enables our

partners to reduce their production cost by achieving the highest possible production speeds for their driplines. In conjunction with our drip irrigation production lines, the dripline produced with our technology and emitters is the best in their market with the highest quality standards and lowest tolerances. At the same time, our partners reduce their production costs and increase their production capacity with the industry leading integrated solution of technology and emitters of A.A.S.

Our dedicated R&D emitter department is strategically staffed with both highly experienced engineers with a track record of 40 years in the industry and young talents that bring new ideas and the latest technology trends. We offer a wide range of emitters in order to address all market needs. It is common knowledge that the most important element of a dripline is the emitter as it is the apparatus delivering water to the plant. Therefore, a perfectly designed and manufactured emitter will ensure the flawless and lasting operation of the dripline on the field. This is why we constantly improve our emitters and our related production processes, by implementing the latest technologies in every aspect of our operations.

Emitters

Emitter Name	Special Features	Symmetry	Recommended Thickness (mm)	Flow Rates (l/h)
Cyclone PC	Drain, Non-Drain and Anti-Siphon	Symmetric	0,30 - 1,20	1,0
				1,5
				2,4
				3,8
Triton PC	Drain, Non-Drain and Anti-Siphon	Symmetric	0,65 - 1,20	2,0
				4,0
Aquarius PC	Drain and Non-Drain	N/A	0,90 - 1,20	2,0
				4,0
				8,0
Nano	3D Filtration Area	Asymmetric	0,13 - 0,30	0,6
				1,0
				1,6
				2,0
Turbo	Turbo-Flow Technology	Symmetric	0,13 - 1,00	0,8
				1,3
				1,6
				2,0
				2,4
				3,8
Turbo Compact	Turbo-Flow Technology	Symmetric	0,65 - 1,20	2,0
				4,0

Emitter range

PC Emitters



Cyclone PC

Page 6



Triton PC

Page 8



Aquarius PC

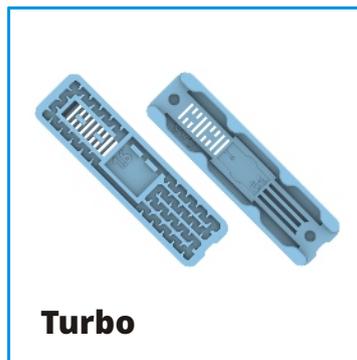
Page 10

Turbulent Emitters



Nano

Page 12



Turbo

Page 14



**Turbo
Compact**

Page 16

Cyclone PC

Flat PC Emitter

Ultra slim high-tech concept, laser welded with long-life material that fits any hose diameter. High accuracy, consistent clog-free performance.



Pressure Compensating (PC)

PC emitters incorporate a silicone membrane which enables the delivery of precise and equal amounts of water over a broad pressure range. Cyclone PC emitters are designed for precision irrigation needs and inclined topography.

Laser Welding Technology

We use state of the art laser welding technology for sealing the two parts of the emitter. With our investments in the latest technology in emitter assembly, we ensure flawless operation under any condition. Moreover, this welding method prevents leaks in the event of extremely high pressures or in the event of opening of the emitter during installation and/or retraction of the dripline in the field.

Drain (D), Non-Drain (ND) and Anti-Siphon (AS) Options

The Anti-Siphon (AS) system is a specially designed mechanism that prevents suction of dirt and impurities into the emitter. The AS feature enables Cyclone PC to be installed underground (SDI), perfectly maintaining its irrigation characteristics and its multi-year durability.

With the Non-Drain system of Cyclone PC, the dripline remains full of water during irrigation intervals, ensuring immediate and uniform irrigation along the dripline.

ND emitters eliminate drainage and refill effect, and improve efficiency in pulse irrigation. In order to achieve the ND function, the emitter opens at 0,40 bar and closes at 0,25 bar.

Emitter Characteristics

Wide range of flow rates from 1,0 to 3,8 l/h. Designed for a wide range of wall thicknesses starting from 12 mil up to 47 mil (0,3 mm - 1,2 mm).

Suitable for driplines with internal diameter (ID) from 13,5 mm and up.

State of the art flat PC, AS, ND emitter technology.

Continuous self cleaning mechanism ensures non-clogging uninterrupted operation.

Excellent emission uniformity.

Excellent flow coefficient.

Low friction losses due to the ultra slim design of the emitter.

Injected molded emitters with excellent Coefficient of Variation (CV).

Product Applications

Precision irrigation

Uneven terrains

Greenhouses

Orchards

Pulse irrigation

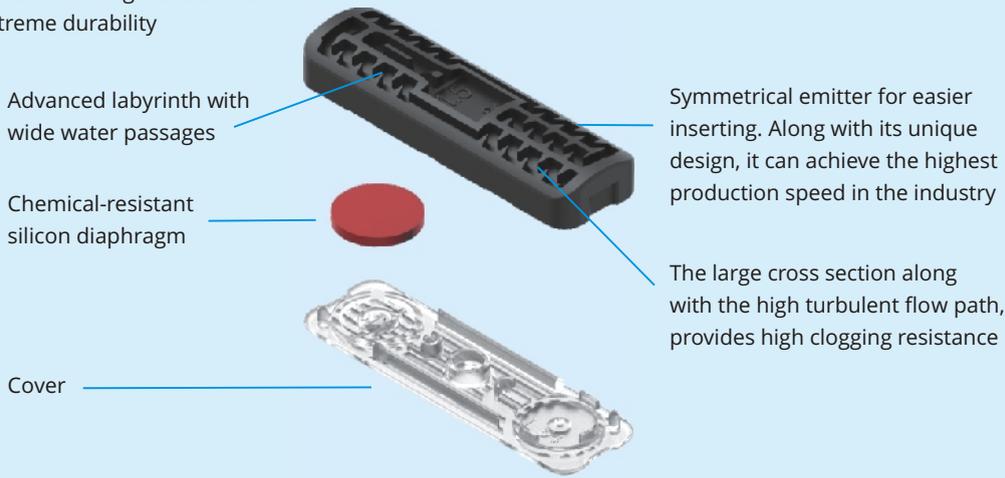
Suitable for both on surface and subsurface installations

Cyclone PC Design Characteristics

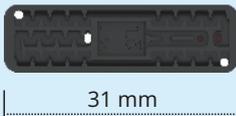
Laser Welding Technology

Cyclone PC is the only laser welded emitter available in the industry, ensuring perfect operation since it maintains its design characteristics and extreme durability

Cyclone PC emitters are tested from both CIT and Irstea institutes and achieved the highest ranking for CV, emission uniformity, flow accuracy and clogging resistance



Actual Size



Packaging



Cyclone PC Emitter Specifications

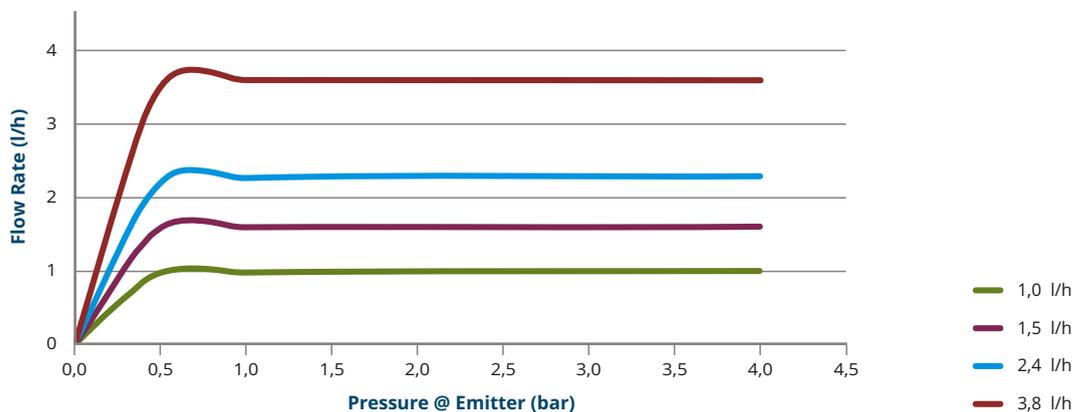
Nominal Flow Rate (l/h)	Constant k (bar)	Exponent (x)	Coefficient of Variation CV (%)	Water Passage Width x Depth x Length (mm)	Filtration Area (mm ²)	Recommended Filtration (mesh/micron)
1,0	1,0	0,0	3,6	0,82 x 0,76 x 139	37,37	150/100
1,5	1,6	0,0	3,6	1,06 x 0,85 x 132	37,37	120/130
2,4	2,3	0,0	3,5	1,19 x 0,90 x 89,6	37,37	120/130
3,8	3,6	0,0	3,5	1,30 x 0,90 x 78,7	37,37	120/130

Pressure range: 0,5 - 3,5 bar

Opening pressure: 0,40 bar

Closing pressure: 0,25 bar

Cyclone PC Emitter Flow Curves



Triton PC

Cylindrical PC Emitter



The most durable Pressure Compensating emitter, designed for steep and rocky terrain, permanent crops with long laterals, on surface and subsurface applications.

Pressure Compensating (PC)

Triton PC emitters incorporate a silicone membrane which enables the delivery of precise and equal amounts of water over a broad pressure range. Triton PC emitters are designed for precision irrigation needs, hard rocky terrain and inclined topography.

Drain (D), Non-Drain (ND) and Anti-Siphon (AS) Options

The Anti-Siphon (AS) system is a specially designed mechanism that prevents suction of dirt and impurities into the emitter. The AS feature enables Triton PC to be installed underground (SDI), perfectly maintaining its irrigation characteristics and its multi-year durability.

With the Non-Drain system of Triton PC, the dripline remains full of water during irrigation intervals, ensuring immediate and uniform irrigation along the dripline. Non-Drain emitters eliminate drainage and refill effect and improve efficiency in pulse irrigation.

In order to achieve the Non-Drain function, the emitter opens at 0,30 bar and closes at 0,18 bar.

Emitter Characteristics

Available in two flow rates 2 and 4 l/h.

Suitable for driplines with 16mm diameter. Manufactured from the finest raw materials that provide durability and long-lasting performance.

Wide and accurate water passages along the labyrinth.

Special labyrinth design that ensures high turbulent flow of the water.

Continuous self cleaning mechanism ensures non-clogging uninterrupted operation.

High UV resistance.

Resistant to all nutrients used in agriculture.

Injected molded emitters with excellent Coefficient of Variation (CV).

Excellent for effluent water reuse.

Wide pressure compensation range.

Product Applications

Precision irrigation

Uneven terrain

Row crops

Orchards

Landscaping

Gardening

Pulse irrigation

Suitable for both on surface and subsurface installations

Triton PC Design Characteristics

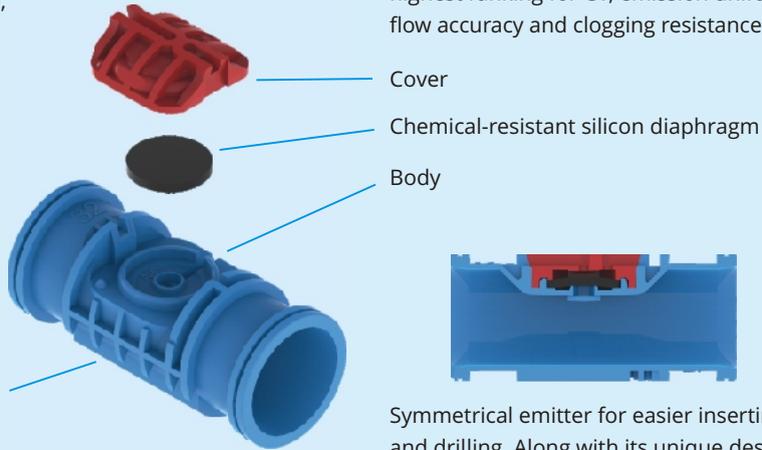
Robust Design

Robust design with no holes or cutouts for housing the silicone membrane, provides perfect symmetry and enables better inserting and drilling at high speed

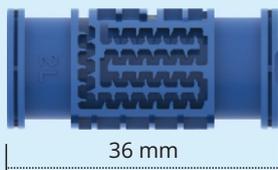
Advanced water inlet design with industry leading filtration area

The large cross section along with the high turbulent flow path, provides high clogging resistance

Triton PC emitters are tested from both CIT and Irstea institutes and achieved the highest ranking for CV, emission uniformity, flow accuracy and clogging resistance



Actual Size



Packaging

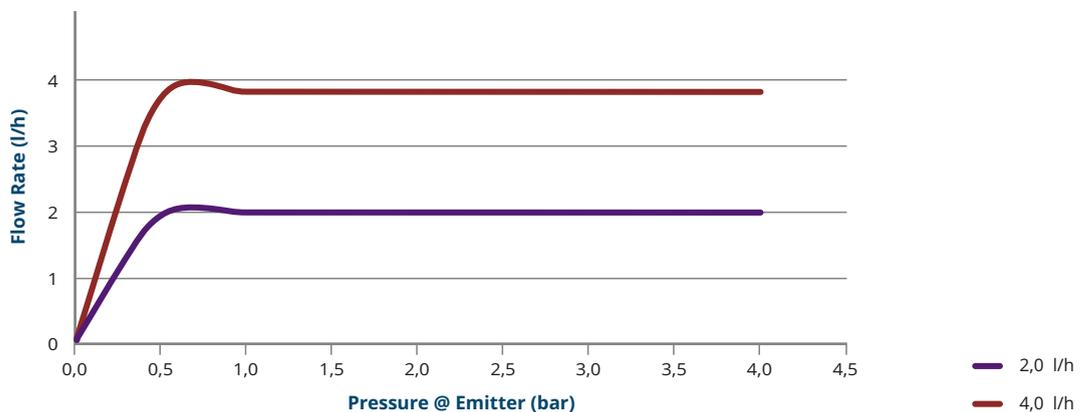


Triton PC Emitter Specifications

Nominal Flow Rate (l/h)	Constant k (bar)	Exponent (x)	Coefficient of Variation CV (%)	Water Passage Width x Depth x Length (mm)	Filtration Area (mm ²)	Recommended Filtration (mesh/micron)
2,0	2,0	0,0	3,1	1,10 x 1,20 x 62,7	14,00	120/130
4,0	3,8	0,0	2,5	1,30 x 1,20 x 51,9	14,00	120/130

Pressure range: 0,5 - 4,0 bar
 Opening pressure: 0,30 bar
 Closing pressure: 0,18 bar

Triton PC Emitter Flow Curves



Aquarius PC

Online PC Emitter

The most versatile and easy to install Pressure Compensating emitter for a great variety of applications.



Pressure Compensating (PC)

Aquarius PC emitters incorporate a silicone membrane which enables the delivery of precise and equal amounts of water over a broad pressure range.

Aquarius PC emitters are designed for precision irrigation needs, ranging from a home garden to the most advanced hydroponic application.

Drain (D) and Non-Drain (ND) Options

With the Non-Drain system of Aquarius PC, the pipe remains full of water during irrigation intervals, ensuring immediate and uniform irrigation along the pipe. Non-Drain emitters eliminate drainage and refill effect, and improve efficiency in pulse irrigation. In order to achieve the Non-Drain function, the emitter opens at 0,30 bar and closes at 0,20 bar.

Emitter Characteristics

Wide range of flow rates 2,0 / 4,0 and 8,0 l/h. Aquarius PC is designed for installation in pipes from 12 mm up to 32 mm diameter and wall thickness from 0,9 mm up to 1,2 mm. Wide pressure compensation range. Cross shaped water inlet. Wide and accurate water passages along the labyrinth.

Special labyrinth design that ensures highly turbulent flow of the water.

Continuous self cleaning mechanism ensures non-clogging uninterrupted emitter operation.

High UV resistance.

Resistant to standard nutrients used in agriculture.

Injected emitter that provides very low Coefficient of Variation (CV).

Aquarius emitters can be installed manually exactly where they are required.

The number of emitters can be increased in order to increase water supply aimed at meeting tree growth rate requirements.

Aquarius PC design allows the installation of manifold outlet with multiple outputs.

One type of outlet suitable for 3 mm internal diameter micro-tube and for press-fit nipple connectors.

Product Applications

Greenhouses and nurseries
Orchards
Landscaping
Gardening
Hydroponics
Soilless culture
Pulse irrigation

Aquarius PC Design Characteristics

Ultrasonic Welding Technology

The advanced welding process of Aquarius PC eliminates the problem all online emitters eventually face, leakage between the body and the cover of the emitter. In our emitter this is prevented by a parallel formation and welding of the cover, around the edge of the body of Aquarius PC, making it impossible to leak regardless of the climatic or pressure conditions

The design of Aquarius PC emitter provides all the benefits of the large online emitters in compact dimensions which make it the perfect choice in terms of value

Aquarius PC emitters are tested from both CIT and Irstea institutes and achieved the highest ranking for CV, emission uniformity, flow accuracy and clogging resistance



Cylindrical labyrinth with wide water passages. Color distinction for different flow rates

Chemical-resistant silicon diaphragm

Emitter cover with color distinction for Drain and Non-Drain function

Installation with a 2,8 mm punch tool

Actual Size

28 mm



Packaging



Aquarius PC Emitter Specifications

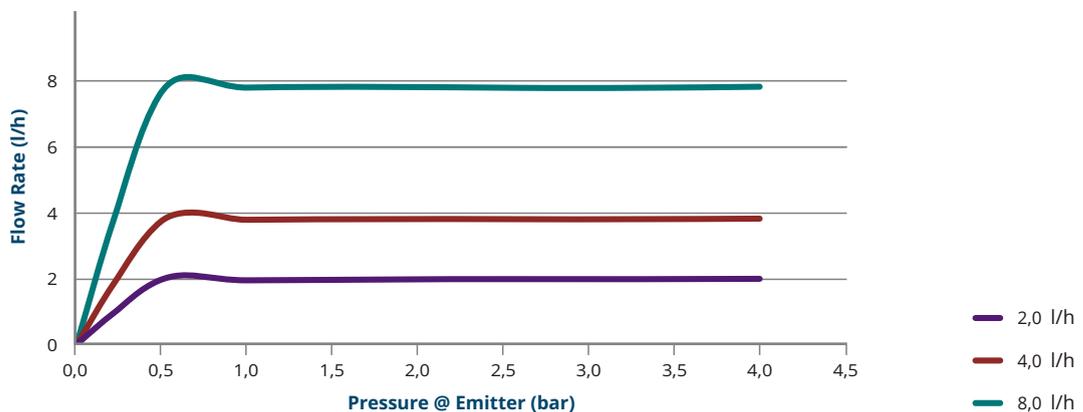
Nominal Flow Rate (l/h)	Constant k (bar)	Exponent (x)	Coefficient of Variation CV (%)	Water Passage Width x Depth x Length (mm)	Filtration Area (mm ²)	Recommended Filtration (mesh/micron)
2,0	2,0	0,0	2,0	1,00 x 1,00 x 55,4	3,80	120/130
4,0	3,9	0,0	2,0	1,30 x 1,10 x 50,6	3,80	120/130
8,0	7,9	0,0	2,2	1,50 x 1,15 x 46,5	3,80	120/130

Pressure range: 0,5 - 4,0 bar

Opening pressure: 0,30 bar

Closing pressure: 0,20 bar

Aquarius PC Emitter Flow Curves



Nano

Flat Turbulent Emitter

The most affordable approach for the end user due to the small weight and dimensions of the emitter.



The small dimensions of Nano emitter along with its curved edge design provide a very low kd factor resulting in extremely low friction losses of water flowing inside the dripline.

Emitter Flow Path

One of the most important elements in the design of an emitter is the flow path. Its width, depth and length determine the flow rate of the emitter in liters per hour but most importantly determines their anti-clogging ability. A highly turbulent flow design creates multiple vortexes inside the flow path and therefore prevents clogging.

Emitter Characteristics

Wide range of flow rates from 0,6 to 2,0 l/h.
State of the art combination of performance and manufacturing technology enable emitter spacings starting from 10 cm and wall thicknesses from 5 mil and greater.
Suitable for driplines with any diameter from 12 mm and on.
Superior and efficient emitter design enables very high downstream production speeds.

Excellent Coefficient of Variation (CV), far superior to labyrinth tape products, due to the long length of the finely tuned labyrinth. Specially designed labyrinth creates turbulent flow, thus preventing clogging of the emitter.

Advanced Three-Dimensional water inlet increases filtering area, thus enhancing the anti-clogging performance of the emitter.

Cost efficient, due to its ultracompact design.

The finished coils contain more meters for the same outer dimensions, resulting at lower logistics costs per meter, compared to other thin wall and tape products.

Product Applications

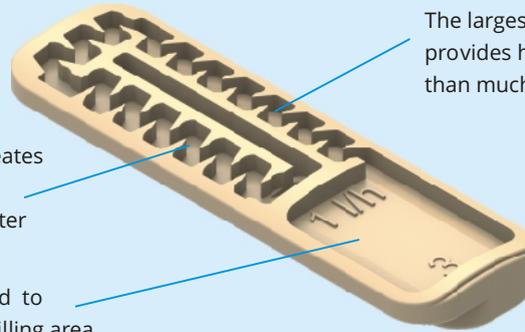
Row crops
Vegetables
Gardening
Suitable for both on surface and shallow subsurface installations depending on wall thickness

Nano Design Characteristics

3D Filtration Area

The unique 3D filtration area of Nano prevents particle insertion into the emitter. The inlet design provides a filtration area larger than much bigger emitters

Nano emitters are tested from both CIT and Irstea institutes and achieved the highest ranking for CV, emission uniformity, flow accuracy and clogging resistance



Specially designed labyrinth creates high turbulent flow, therefore preventing clogging of the emitter

The largest cross section in the industry provides high clogging resistance, better than much bigger flat emitters

Vast drilling tolerance compared to similar emitters due to large drilling area

Actual Size



19 mm

Packaging



50.000 pcs



120 boxes
6.000.000 pcs



11 pallets
66.000.000 pcs

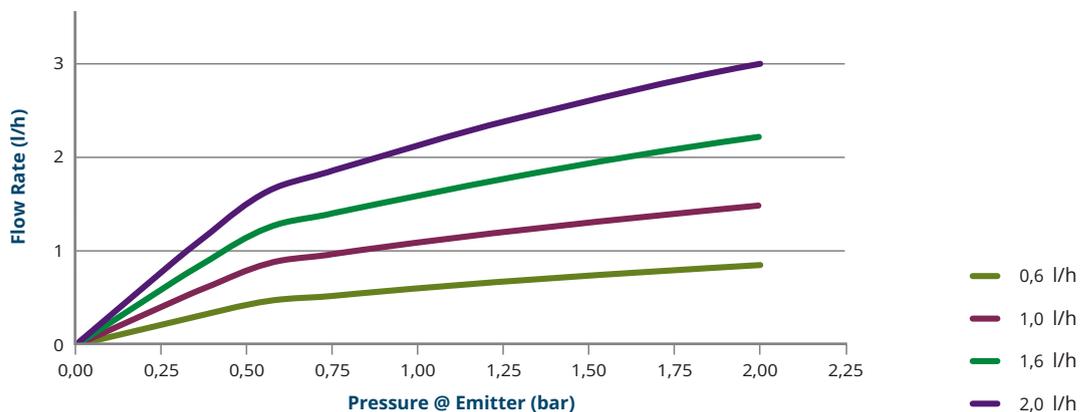


22 pallets
132.000.000 pcs

Nano Emitter Specifications

Nominal Flow Rate (l/h @ 1bar)	Constant k (bar)	Exponent (x)	Coefficient of Variation CV (%)	Water Passage Width x Depth x Length (mm)	Filtration Area (mm ²)	Recommended Filtration (mesh/micron)
0,6	0,60	0,48	1,90	0,51 x 0,46 x 44,2	28,20	150/100
1,0	1,09	0,46	1,15	0,59 x 0,60 x 41,9	28,20	120/130
1,6	1,60	0,47	1,80	0,69 x 0,65 x 40,0	28,20	120/130
2,0	2,13	0,49	1,50	0,80 x 0,65 x 38,2	28,20	120/130

Nano Emitter Flow Curves



Turbo

Flat Turbulent Emitter

One of the world's most proven and trusted flat emitter, used in both surface and subsurface applications for more than 27 years worldwide.

Emitter Flow Path

One of the most important elements in the design of an emitter is the flow path. Its width, depth and length determine the flow rate of the emitter in liters per hour but most importantly determines their anti-clogging ability. A highly turbulent flow design creates multiple vortexes inside the flow path and therefore prevents clogging.

Emitter Characteristics

Wide range of flow rates from 0,8 to 3,8 l/h.

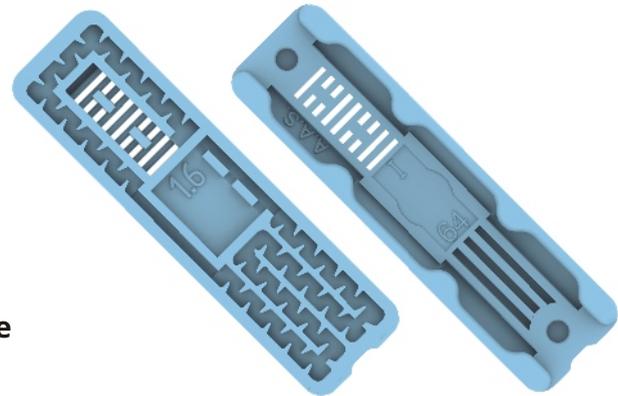
Designed for insertion systems of wall thicknesses ranging from 5 mil up to 47 mil (0,135 mm - 1,2 mm).

Suitable for driplines with any diameter from 12 mm and on.

Highly turbulent labyrinth with large cross section design, ensure superior clogging resistance.

Symmetrical design allows the highest insertion rates and higher production speed.

Ideal for single season as well as multi-season applications and subsurface installation.



Injected molded emitters with excellent Coefficient of Variation (CV).

Advanced water inlet design, increases filtering area and prevents particle insertion in the emitter, thus enhancing the anti-clogging performance.

Product Applications

Row crops

Orchards

Landscaping

Vegetables

Gardening

Suitable for both on surface and subsurface installations depending on wall thickness

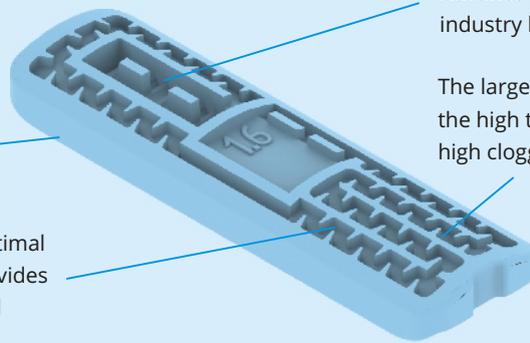
Turbo Design Characteristics

The Most Successful Flat Emitter

Turbo was designed in 1991 and since then it was installed in numerous fields worldwide making it the most successful flat emitter in the drip irrigation industry. As a result Turbo is also the most copied emitter in the industry

Turbo emitters are tested from both CIT and Irstea institutes and achieved the highest ranking for CV, emission uniformity, flow accuracy and clogging resistance

Symmetrical emitter for easier inserting and drilling. Along with its unique design, it can achieve the highest production speed in the industry



Advanced water inlet design with industry leading filtration area

The large cross section along with the high turbulent flow path, provides high clogging resistance

The unique design and the optimal dimensions of the emitter provides the ability to insert it in all wall thicknesses and diameters

Actual Size



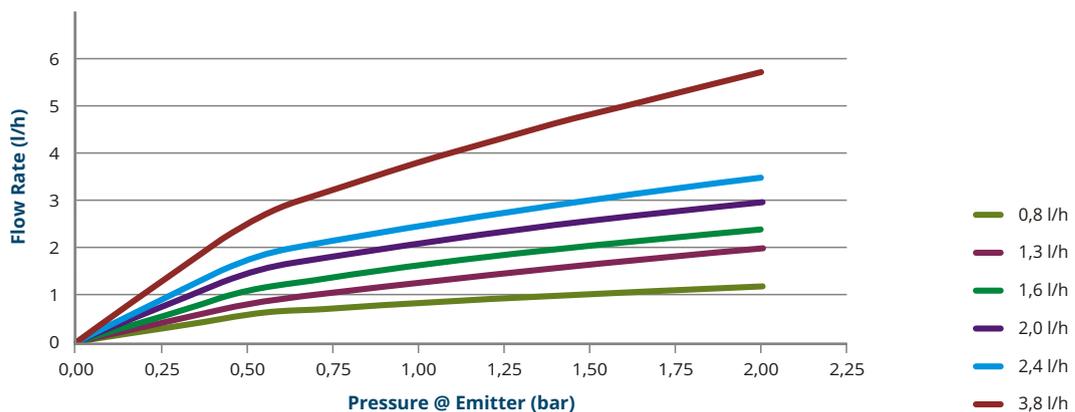
Packaging



Turbo Emitter Specifications

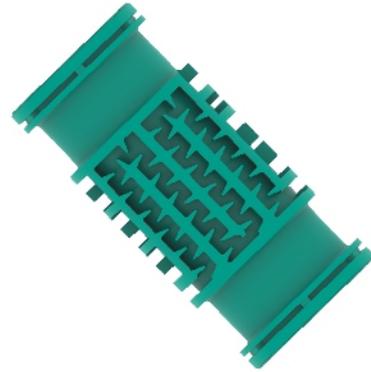
Nominal Flow Rate (l/h @ 1bar)	Constant k (bar)	Exponent (x)	Coefficient of Variation CV (%)	Water Passage Width x Depth x Length (mm)	Filtration Area (mm ²)	Recommended Filtration (mesh/micron)
0,8	0,82	0,48	1,4	0,62 x 0,62 x 116	20,00	120/130
1,3	1,25	0,49	1,6	0,70 x 0,62 x 106	20,00	120/130
1,6	1,61	0,49	1,8	0,70 x 0,67 x 106	20,00	120/130
2,0	2,07	0,47	1,7	0,75 x 0,75 x 104	20,00	120/130
2,4	2,46	0,48	2,1	0,75 x 0,85 x 104	20,00	120/130
3,8	3,80	0,49	2,2	0,97 x 0,85 x 64,4	12,00	120/130

Turbo Emitter Flow Curves



Turbo Compact

Cylindrical Turbulent Emitter



Compact and economical emitter for a wide range of applications. Suitable for permanent crops, multi seasonal usage and unexperienced farmers.

Emitter Flow Path

One of the most important elements in the design of an emitter is the flow path. Its width, depth and length determine the flow rate of the emitter in liters per hour but most importantly determines their anti-clogging ability. A highly turbulent flow design creates multiple vortexes inside the flow path and therefore prevents clogging.

Emitter Characteristics

Available in two flow rates 2,0 and 4,0 l/h.

Suitable for driplines with 16 mm diameter.

Manufactured from the finest raw materials that provide durability and long-lasting performance.

Injected molded emitters with excellent Coefficient of Variation (CV).

Specially designed labyrinth creates high turbulent flow, therefore preventing clogging of the emitter.

Very high resistance to agrochemicals and hard field conditions.

Advanced water inlet design, increases filtering area and prevents particle insertion in the emitter, thus enhancing the anti-clogging performance.

Product Applications

Row crops

Orchards

Landscaping

Vegetables

Gardening

Suitable for both on surface and subsurface installations

Turbo Compact Design Characteristics

Compact and Economical Emitter

Compact and economical emitter for a wide range of both surface and subsurface applications

Turbo Compact emitters are tested from both CIT and Irstea institutes and achieved the highest ranking for CV, emission uniformity, flow accuracy and clogging resistance

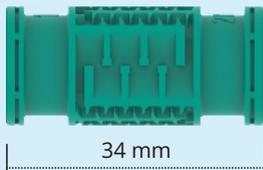
Symmetrical emitter for easier inserting and drilling. Along with its unique design, it can achieve the highest production speed in the industry



Advanced water inlet design with industry leading filtration area

The large cross section along with the high turbulent flow path, provides high clogging resistance

Actual Size



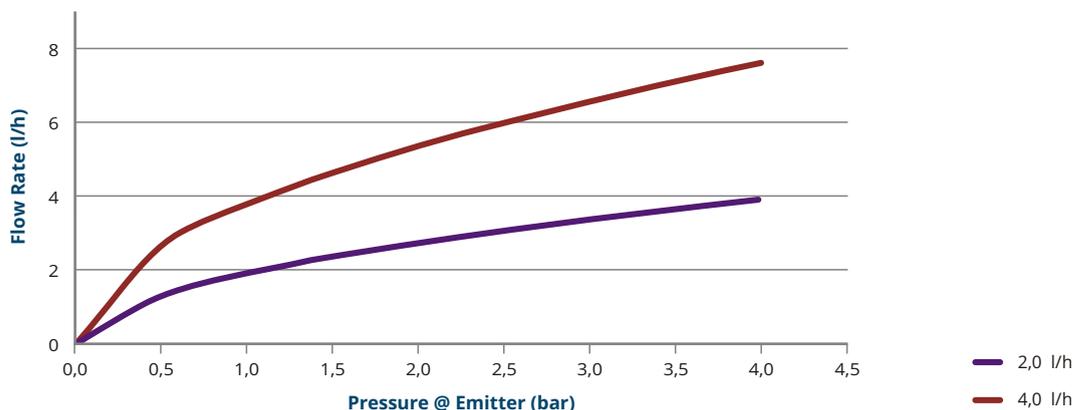
Packaging

7.000 pcs	30 boxes 210.000 pcs	10 pallets 2.100.000 pcs	20 pallets 4.200.000 pcs

Turbo Compact Emitter Specifications

Nominal Flow Rate (l/h @ 1bar)	Constant k (bar)	Exponent (x)	Coefficient of Variation CV (%)	Water Passage Width x Depth x Length (mm)	Filtration Area (mm ²)	Recommended Filtration (mesh/micron)
2,0	1,98	0,49	1,20	0,95 x 1,00 x 197	20,80	120/130
4,0	3,97	0,49	1,35	1,03 x 1,35 x 143	53,00	120/130

Turbo Compact Emitter Flow Curves





By utilizing our knowledge, experience and expertise, we are able to provide comprehensive solutions for the drip irrigation industry

Services

By utilizing our knowledge, experience and expertise we are able to provide the best possible solution for your needs. We do not treat you as a customer that purchases products from us, you are our partner and we strive to add value to your investment.

Custom-made, Turn-key Production Lines

Our team can design, develop, build and install a complete drip irrigation production line according to your specific needs. We cooperate with major manufacturers in the drip irrigation industry and therefore have a variety of equipment which will suit your production needs.

Emitter Design

Our specialized emitter design team is able to design and develop custom made emitters according to your market needs and make sure that will accommodate your production line requirements. We can also provide a vast range of emitters which are currently produced in our Cyprus facilities.

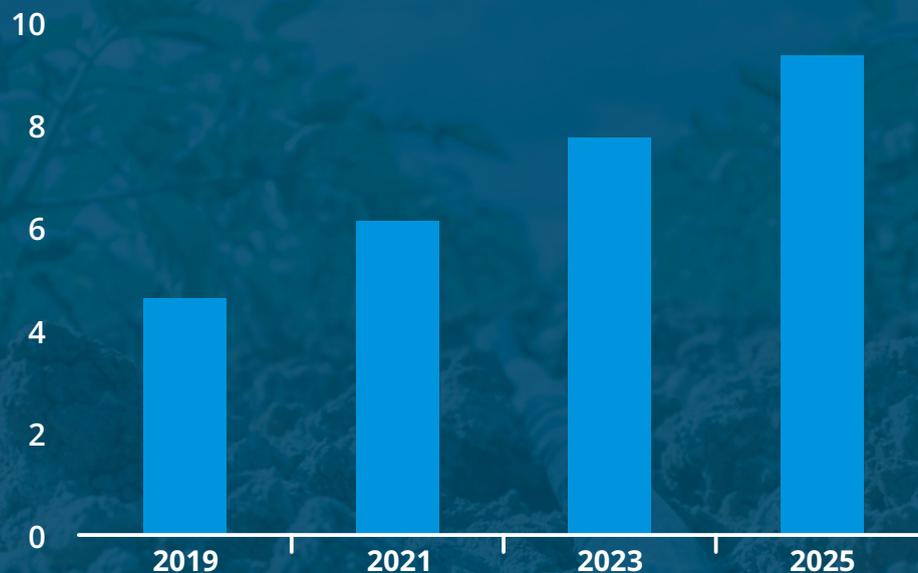
Technical Consultation and After Sales Service

Our goal is to ensure that our services surpass the expectations of our partners. Our experienced technical team can provide you with all the answers, propose the optimum solution and offer comprehensive after sales service and support.

Project and Investment Consultation

The accumulated expertise and experience allows A.A.S. to embark and consult on any drip irrigation project of new investment, restructuring, merger and or acquisition worldwide.

Drip irrigation market growth



The global drip irrigation systems market is estimated at USD 4,9 Billion for 2019 and is expected to reach USD 8,5 Billion by 2025, expanding at a CAGR of 9,6% from 2019 to 2025

Source: "Drip Irrigation Market by Component, Emitter/Dripper Type, Application, Crop Type, and Region - Global Forecast 2025"

A business opportunity

By utilizing our knowledge, experience and expertise we offer to our partners the opportunity to enter the drip irrigation market.

Startup Projects

Our team of experts can undertake complete startup projects for investors choosing to enter the industry of drip irrigation, with no previous involvement or manufacturing experience of any kind. We offer a comprehensive end-to-end solution, based on the specific market requirements and tailored to suit investor's needs.

Feasibility Studies

We provide comprehensive feasibility studies for investing in the drip irrigation sector. Whether it is an idea or a final concept, we can help you bring the overall project to fruition.

Marketing Services

We provide the opportunity, to penetrate the targeted market with the exact product that our lines will produce once they have been installed. This option is available from the production of one of our trusted partners. The same applies in the event that the investment has been materialized, the production lines are running at capacity, additional quantities are needed but there is not enough time for a new investment or the additional quantities do not justify a new investment.

Depending on the needs of the manufacturer, we can offer international marketing services for specified markets since we have the knowledge and experience in this field.

Global footprint

Our multi-year global presence in the industry of drip irrigation, equips us with deep knowledge of the particularities and challenges of every country and region. Therefore, we are the experts in the drip irrigation industry.

Geographical Presence

A.A.S. has a wide geographical presence deriving from our ability to offer comprehensive solutions and superior product quality. A.A.S. is a highly respected brand amongst the drip irrigation product manufacturers and technology providers worldwide.

Our global sales and our technical team are always in reach, working hand in hand with our partners in every part of the world, taking advantage of our wide distribution network.

Over the years we have supplied many companies around the globe with our advanced, high quality emitters and state of the art production lines for the manufacturing of driplines.

Partners in all Five Continents

Our large manufacturing capacity along with the dedicated R&D and Quality Control departments enables us to have long-term contracts for the supply of emitters worldwide with many companies in the field of irrigation.

Our major partners are internationally renowned companies or corporations, ranking in the top 10 largest drip irrigation manufacturers, spread on all five continents, trusting us for delivering the optimal solution for their drip irrigation production needs.



**We have partners in all five continents.
We know drip**



Showroom:

10 Andrea Araouzou str.,
3056 Limassol, Cyprus

Head Office:

12 Andrea Araouzou str.,
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