LIVEPANEL OUTDOOR

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The patented LivePanel outdoor system creates a unique and innovative green façade, ideal for the installation of vertical greenery in otherwise grey and urban areas. Also known as living walls, the LivePanel is planted with real plants, introducing foliage and flower and contributing not only to the aesthetic beauty of an exterior wall, but to the biodiversity, clean air quality levels, heat regulation and climate-proofing of city buildings.

A UNIQUE SYSTEM

Adding a LivePanel outdoor system transforms a bare and grey exterior expanse into a natural flourishing living wall. LivePanel outdoor is a modular green façade system with exchangeable plant cassettes. The cassettes have slots into which plants are placed. Each row of plant cassettes is placed in a gutter profile that also serves as a water reservoir. The plants absorb water from the reservoir through capillary action. The system can be installed on both new and existing walls.

VERTICAL GREEN

LivePanel outdoor can be used in a multitude of vertical greenery scenarios. The customer can construct the green wall to suit, in terms of design, layout and plant choice. LivePanel outdoor is easy to install on all wall types. LivePanel outdoor not only creates a green façade, but can be a real head-turner for a building – for all the right reasons. In addition, the plants within the LivePanel stimulate local biodiversity.

LIVEPANEL OUTDOOR MATERIALS

Cassettes: The cassettes are made of breathable Expanded Polypropylene (EPP) material on the front side, Polypropylene (PP) on the backside. The cassette is fitted with microfibre textile with capillary action consisting of 80% polyester and 20% polyamide. Returned cassettes are fitted with a new microfibre textile on our production site and reused.

Fire-retardant cassettes: The cassettes are also available in grey EPP with fire-retardant. The green wall complies with fire classification B-s2, d0.

Gutter profiles and mounting materials: The aluminium extruded gutter profiles are made of alloy AL 6063 T5. The profiles are black anodised. Because of this, the profiles have optimal corrosion resistance and can be used outdoors. The mounting material for installing the profiles is of A2 stainless steel quality. The profiles are provided with end and transit caps made of fiberglass polyamide that is attached to the profile with self-tapping screws. Between the end caps and profiles, there is an EPDM rubber seal. The transit caps are fitted with hose tails where a plastic hose is mounted with stainless steel hose clamps.

Planting: The plants used in the pre-cultivated cassettes in the LivePanel Outdoor system are grown at the Dartplant production site under the "On the way to PlanetProof" certification. This independent certification proves that the plants for the LivePanel Outdoor facade have been produced more sustainably and are therefore a better choice for nature, climate and animals. The online Mobilane PlantGuide gives an overview of selected plant species that are recommended for planting on the LivePanel Outdoor facade.

UNIQUE FEATURES

Choose manual or automatic irrigation system

Available in any size

Economical water consumption and no waste

Space saving and slim system

Modular system

Interchangeable plant cassettes

Easy and quick installation

Allows freedom in design and plant choice

Fully recyclable

BENEFITS

Improves air quality

Improves a sense of well-being

Stimulates biodiversity

Cools and regulates the environment

Better aesthetic appeal

Increases the value of real estate

Insulating and sound-dampening effects

INSTALLATION

For the green facade system LivePanel Outdoor, automatic watering by means of an irrigation system is advised. Water consumption varies from season to season and depends on the climate and type of planting. It should be taken into account that maximum water consumption of approx 4 litres per m^2 per day is used in hot periods. Mobilane can also optionally offer a maintenance contract.

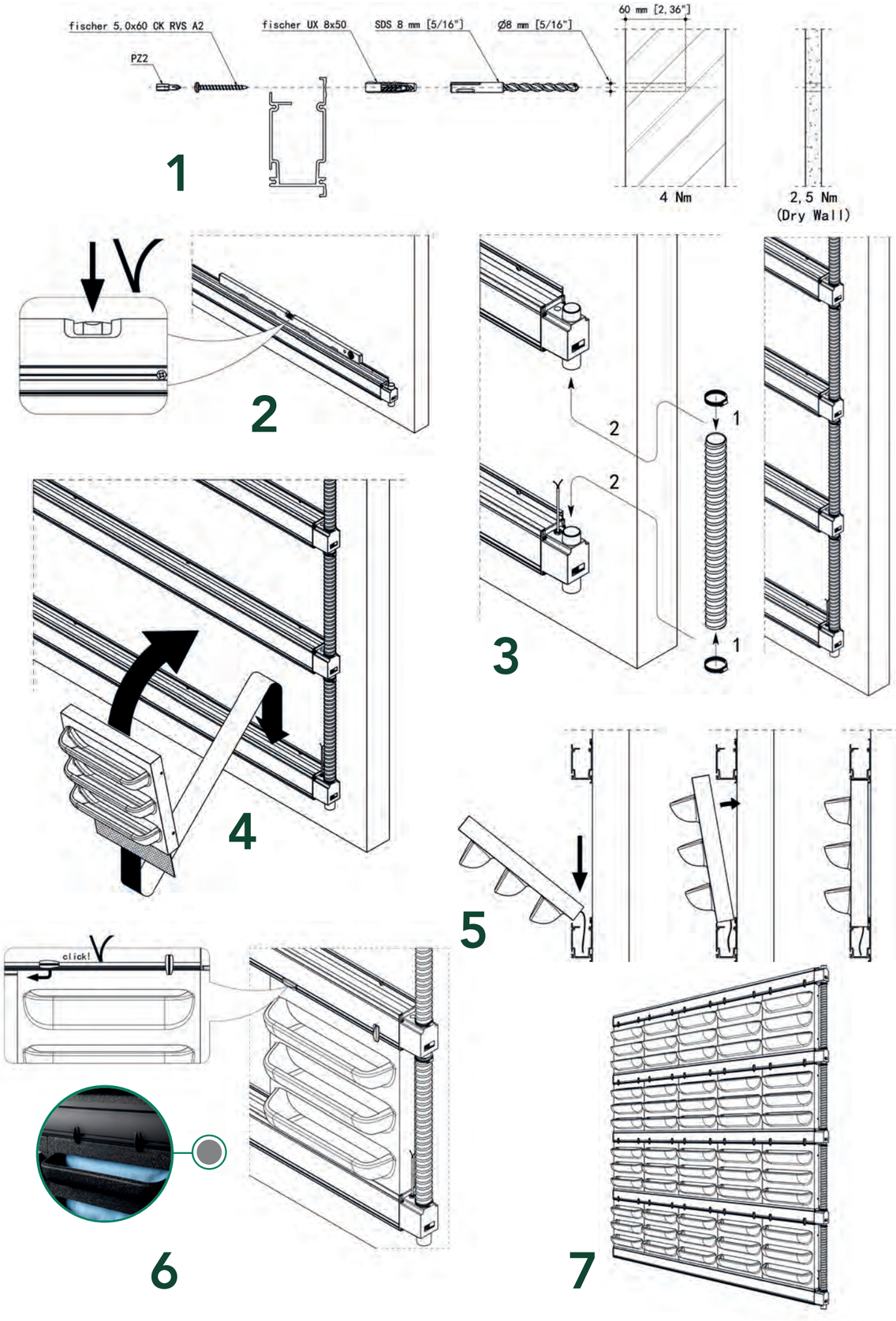
PLACING AND WATERING

	LivePanel Outdoor
Indoor	
Outdoor	●
Watergift	
Manual	
Tank	
Irrigation system	●

PROFILES AND CASSETTES

In most cases, the installation can be directly fitted to any back wall by means of the supplied fasteners; as long as the profiles hang level. The correct distance between them is shown on the supplied building plan specification for the project in question, this must be adhered to. The irrigation system is then connected and activated, after which the cassettes (with planting) can be placed on the profiles.

- The maximum profile length is 520 cm excluding the end caps. Larger walls are therefore made up of a series of profiles, placed next to each other.
- Both the profiles and the (optional) frame are easily customized by the installer. The cassettes can be divided by using the indicated cutting line at the back of the cassette. With calculations, tolerances in the aluminium profiles have to be taken into account.
- The cassettes have a standard size of 40 x 40 cm. The weight of the LivePanel Outdoor system is 40 kg/m^2 including plants.
- The choice of plants is dependent on where the facade is installed. The surface orientation is important so the amount of sun exposure and shade that a facade receives is taken into account. Depending on this, a planting plan is made.



MAINTENANCE

The maintenance of a green facade consists of pruning, replacing bad plants, identifying and controlling any diseases and pests. The frequency of maintenance depends on the types of plants, season, and the associated growth of the planting. Maintenance of a green facade is very important for ensuring optimum appearance and a healthy green facade.

1. PRUNING

For the protection of the green facade, it is essential that the wall is well maintained and the planting is pruned. The wall should be pruned about twice a year, depending on plant type. This should be avoided in colder seasons and nesting periods. The planting in the green facade must be pruned in order to keep it's optimal design, giving the planting light and space grow to grow and bloom again. The green facade is pruned by means of an (electric) hedge trimmer or pruning shears.

2. CONTROL OF DISEASES AND PESTS

During inspection visits, the presence of diseases and pests us also carefully considered, and treated if necessary. This happens biological as much as possible. For example, nematodes are used in the control of vine weevil larvae.

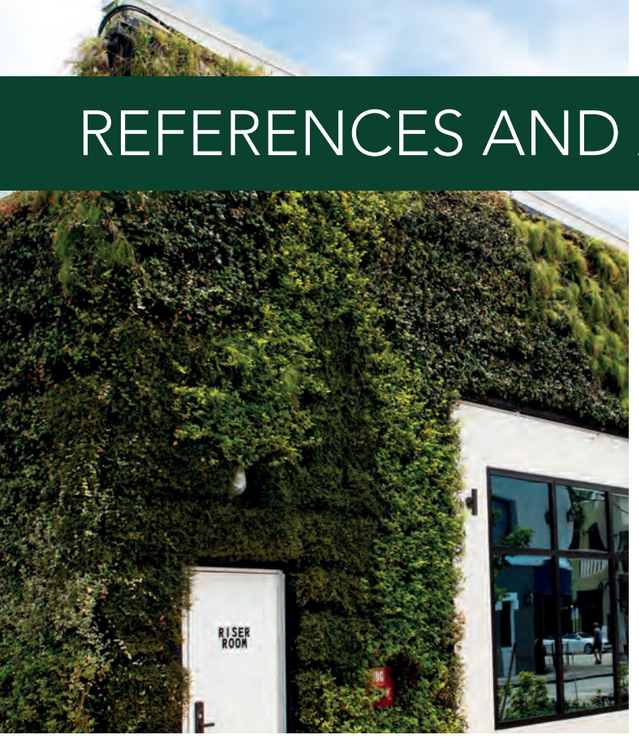
3. ANNUAL IRRIGATION SYSTEM CHECK

The irrigation system should be checked regularly. Mobilane offers a suitable irrigation system with integrated nutrient supply for every green facade. Every green facade is different and requires appropriate adjustment. For example, it is important that a wall on the north does not get as much water as a wall on the south, because a wall on the south will consume more water in summer than a northern wall. Many variables are under monitoring to ensure that the green facade has a healthy appearance all year round.

4. NUTRITION

Non-ground-based systems such as Mobilane's LivePanel Outdoor, having no connection to the ground, require a permanent and a responsive needs-adapted water and power supply. The MobiPanel facade vegetation system used an irrigation system in which continuous nutrition is added to the water to give the green facade the perfect appearance and keep plants healthy.

REFERENCES AND APPLICATIONS



UTILITY CONSTRUCTION

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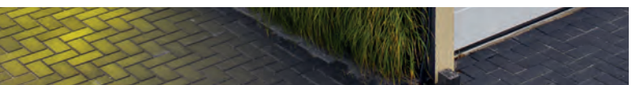

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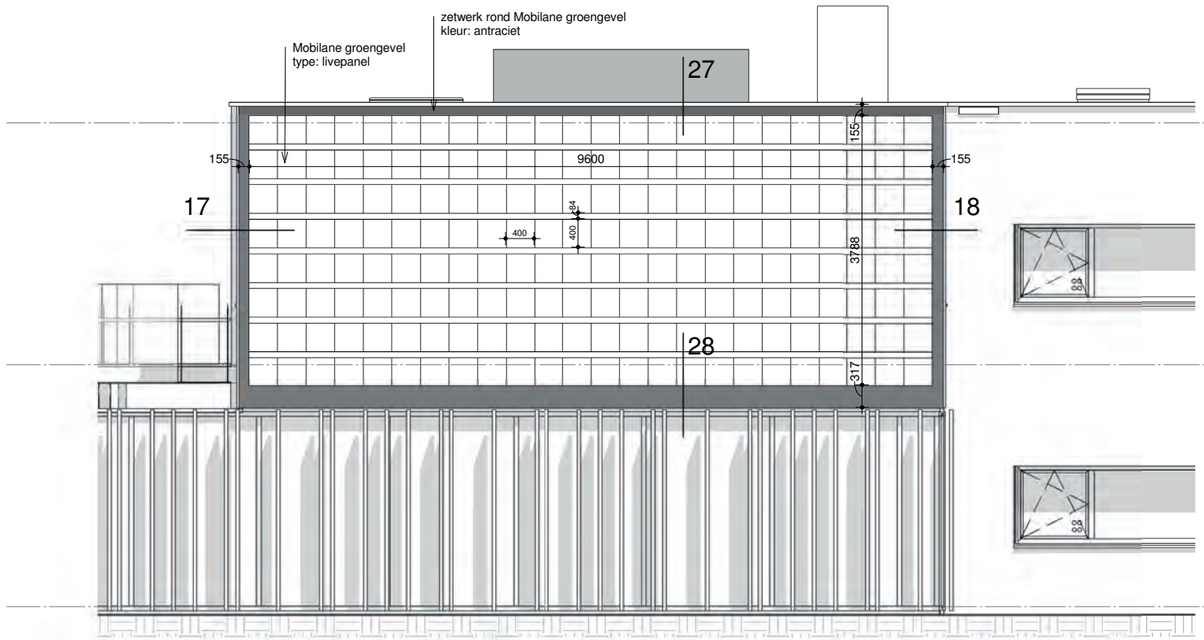
CASE STUDY



PROJECT INFORMATION

In 2015, a green wall was installed on the facade of the nursing home Wiekendael in Roosendaal. The green facade spans 38,5 m^2 and to integrate the wall as a whole, it has been chosen to place a frame in the same RAL colour as the frame of the building. A plant mix was chosen that is suitable for a north-facing wall.

GREEN FACADE SYSTEM

The green wall has been realised with the LivePanel Outdoor green wall system from Mobilane. In the building, there is a technical room where the irrigation unit is installed. From here, the green wall is automatically provided with water and nutrition. The system is provided with an alarm function.

CLIENT : Groenhuysen
ARCHITECT: Rothuizen Architecten - BouwMeesterPro
CONTRACTOR: Isobautec
YEAR OF CONSTRUCTION: 2016
LOCATION : Roosendaal, NL

CALCULATION MODEL

Height in CM	Sqm																												
20	983,0		4,7	8,7	12,6	16,6	20,5	24,5	28,4	32,3	36,3	40,2	44,2	48,1	52,1	SPACE BETWEEN GUTTERS	56,8	60,8	64,7	68,7	72,6	76,6	80,5	84,4	88,4	92,3	96,3	100,2
19	934,5		4,5	8,3	12,0	15,8	19,5	23,3	27,0	30,7	34,5	38,2	42,0	45,7	49,5		54,0	57,8	61,5	65,3	69,0	72,8	76,5	80,3	84,0	87,8	91,5	95,3
18	886,0		4,3	7,8	11,4	14,9	18,5	22,0	25,6	29,2	32,7	36,3	39,8	43,4	46,9		51,2	54,8	58,3	61,9	65,5	69,0	72,6	76,1	79,7	83,2	86,8	90,3
17	837,5		4,1	7,4	10,8	14,1	17,5	20,8	24,2	27,6	30,9	34,3	37,6	41,0	44,4		48,4	51,8	55,2	58,5	61,9	65,2	68,6	71,9	75,3	78,7	82,0	85,4
16	789,0		3,8	7,0	10,1	13,3	16,5	19,6	22,8	26,0	29,1	32,3	35,5	38,6	41,8		45,6	48,8	52,0	55,1	58,3	61,5	64,6	67,8	70,9	74,1	77,3	80,4
15	740,5		3,6	6,6	9,5	12,5	15,5	18,4	21,4	24,4	27,3	30,3	33,3	36,3	39,2		42,8	45,8	48,8	51,7	54,7	57,7	60,7	63,6	66,6	69,6	72,5	75,5
14	692,0		3,4	6,1	8,9	11,7	14,5	17,2	20,0	22,8	25,6	28,3	24,0	33,9	36,7		40,0	42,8	45,6	48,4	51,1	53,9	56,7	59,5	62,2	65,0	67,8	70,6
13	643,5		3,1	5,7	8,3	10,9	13,4	16,0	18,6	21,2	23,8	26,3	28,9	31,5	34,1		37,2	39,8	42,4	45,0	47,6	50,1	52,7	55,3	57,9	60,5	63,0	65,6
12	595,0		2,9	5,3	7,7	10,1	12,4	14,8	17,2	19,6	22,0	24,4	26,8	29,1	31,5		34,4	36,8	39,2	41,6	44,0	46,4	48,7	51,1	53,5	55,9	58,3	60,7
11	546,5		2,7	4,9	7,0	9,2	11,4	13,6	15,8	18,0	20,2	22,4	24,6	26,8	29,0		31,6	33,8	36,0	38,2	40,4	42,6	44,8	47,0	49,2	51,3	53,5	55,7
10	498,0		2,4	4,4	6,4	8,4	10,4	12,4	14,4	16,4	18,4	20,4	22,4	24,4	26,4		28,8	30,8	32,8	34,8	36,8	38,8	40,8	42,8	44,8	46,8	48,8	50,8
9	449,5		2,2	4,0	5,8	7,6	9,4	11,2	13,0	14,8	16,6	18,4	20,2	22,0	23,8		26,0	27,8	29,6	31,4	33,2	35,0	36,8	38,6	40,4	42,2	44,0	45,8
8	401,0		2,0	3,6	5,2	6,8	8,4	10,0	11,6	13,2	14,8	16,4	18,0	19,7	21,3		23,2	24,8	26,4	28,0	29,7	31,3	32,9	34,5	36,1	37,7	39,3	40,9
7	352,5		1,7	3,1	4,6	6,0	7,4	8,8	10,2	11,6	13,0	14,5	15,9	17,3	18,7		20,4	21,8	23,2	24,7	26,1	27,5	28,9	30,3	31,7	33,1	34,6	36,0
6	304,0		1,5	2,7	3,9	5,2	6,4	7,6	8,8	10,0	11,3	12,5	13,7	14,9	16,1		17,6	18,8	20,1	21,3	22,5	23,7	24,9	26,1	27,4	28,6	29,8	31,0
5	255,5		1,3	2,3	3,3	4,3	5,4	6,4	7,4	8,4	9,5	10,5	11,5	12,5	13,6		14,8	15,8	16,9	17,9	18,9	19,9	21,0	22,0	23,0	24,0	25,1	26,1
4	207,0		1,0	1,9	2,7	3,5	4,4	5,2	6,0	6,8	7,7	8,5	9,3	10,2	11,0		12,0	12,8	13,7	14,5	15,3	16,2	17,0	17,8	18,7	19,5	20,3	21,1
3	158,5		0,8	1,4	2,1	2,7	3,3	4,0	4,6	5,3	5,9	6,5	7,2	7,8	8,4		9,2	9,8	10,5	11,1	11,8	12,4	13,0	13,7	14,3	14,9	15,6	16,2
2	110,0		0,6	1,0	1,5	1,9	2,3	2,8	3,2	3,7	4,1	4,5	5,0	5,4	5,9		6,4	6,8	7,3	7,7	8,2	8,6	9,1	9,5	9,9	10,4	10,8	11,3
1	61,5		0,3	0,6	0,8	1,1	1,3	1,6	1,8	2,1	2,3	2,6	2,8	3,1	3,3		3,6	3,9	4,1	4,3	4,6	4,8	5,1	5,3	5,6	5,8	6,1	6,3
CASSETTES	CM		47,8	87,9	128,0	168,1	208,2	248,3	288,4	328,5	368,6	408,7	448,8	488,9	529,0	* 1 cm	577,8	617,9	658,0	698,1	738,2	778,3	818,4	858,5	898,6	938,7	978,8	1.018,9
	CASSETTES		1	2	3	4	5	6	7	8	9	10	11	12	13		14	15	16	17	18	19	20	21	22	23	24	25

Width in CM

Plants per cassette:	9
Plants per m^2:	45
Water use approx.:	5L /m^2 / week
Weight:	40 kg / m^2 all-in

To add 1/3 cassette in width= **+14cm**

To add 2/3 cassette in width= **+28cm**

Add Frame:

Walls <5,2m length = **+ 28,5cm** in width

Walls >5,2m length = **+ 20,8cm** in width

To add 1/3 cassette in height = **+ 23,5 cm**

To add 2/3 cassette in height = **+ 36 cm**

Add Frame:

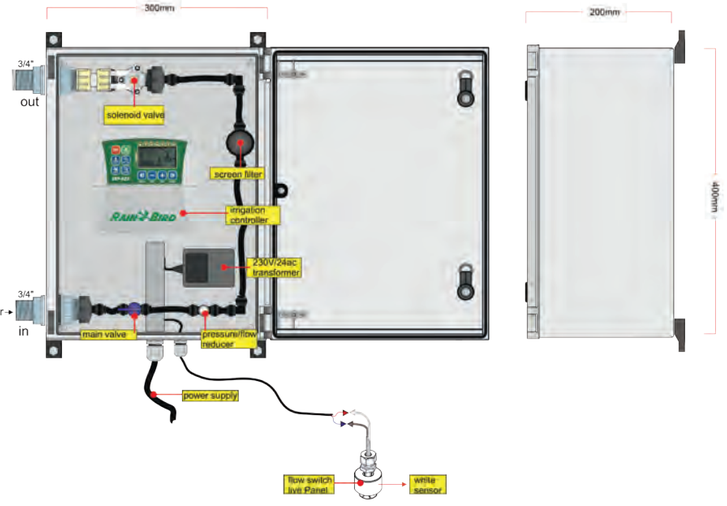
To add a frame = **+ 18cm** in height

Installation time indication:

Installation "hardware":	0,5 - 1h /m^2
Planting Cassettes:	1h /m^2
Installation "irrigation unit":	2-3 h /unit

NOTE : All dimensions are indications. The actual dimensions are defined when the technical drawing is supplied.

IRRIGATION UNITS

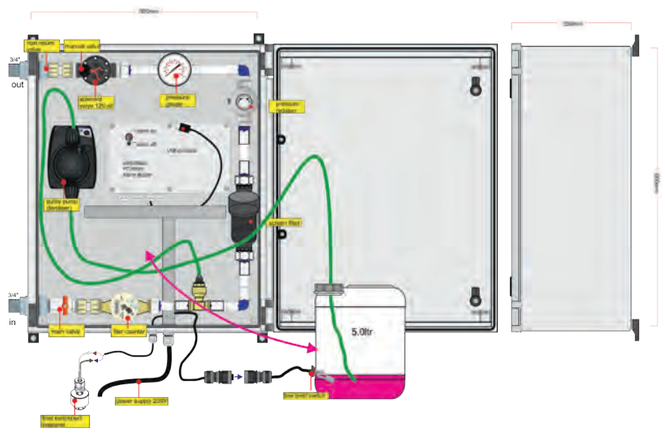


SPECIFICATIONS GN71

- Huntercontroller controlled
- 1 output 3/4" outer wire
- Sensor WHITE controlled
- Unit size 300 x 200 x 400 mm

OPTIONS

- Backflow protection NEN EN 1718
- Frost protection



SPECIFICATIONS GN91

- Automatic injector pump (Aqua)
- Laptop/tablet (USB) controlled
- 1 output 3/4" outer wire
- Sensor BLACK controlled
- Fertilization tank
- Unit size: 500 x 250 x 600 mm

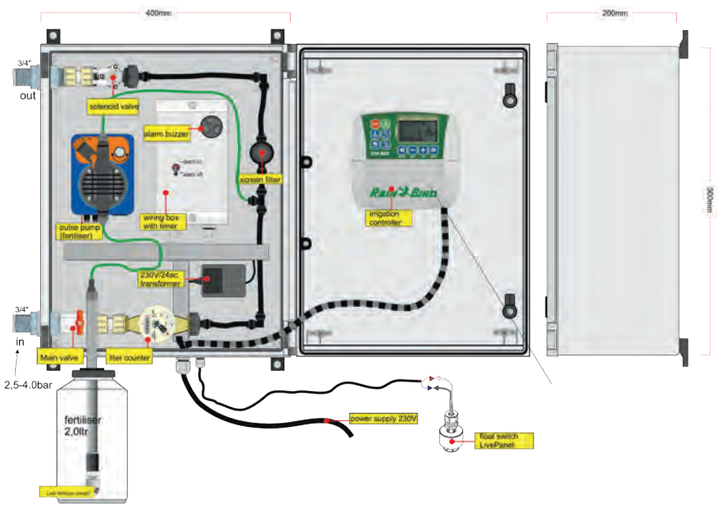
ALARM OPTIONS*

1. External alarm
2. SMS alarm integrated
3. SMS alarm external

OPTIONS

- Breaktank
- Temperature sensor
- Backflow protection NEN EN 1718
- Frost protection

* The irrigation unit is equipped with a buzzer as standard. .



SPECIFICATIONS GN81

- Automatic injector pump (Aqua)
- Rainbirdcontroller controlled
- 1 output 3/4" outer wire
- Sensor BLACK controlled
- Fertilization tank
- Unit size: 400 x 200 x 500 mm

ALARM OPTIONS*

1. External alarm
2. SMS alarm integrated
3. SMS alarm external

OPTIONS

- Breaktank
- Backflow protection NEN EN 1718
- Frost protection

* The irrigation unit is equipped with a buzzer as standard.

CAD AND BIM

All CAD and BIM models can be downloaded from the Mobilane website www.mobilane.com or by scanning the QR-code. CAD and BIM can be used for Revit, IFC, and Civil 3D by architects, engineers and construction professionals (AEC).

SCAN FOR CAD AND BIM MODELS