



NextGen
LIVING WALLS



INSTRUCTION MANUAL



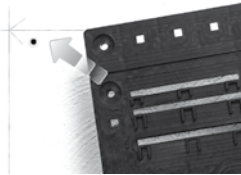
NATURE'S GREEN : EUROPE / MIDDLE EAST
ARCHITECTURAL SUPPLEMENTS : NORTH AMERICA



Originally developed for Europe, now available in North America.



Works with Hydro or Soil plants in their original grow pots.



The easiest to install.



The easiest to maintain.



The easiest to change.



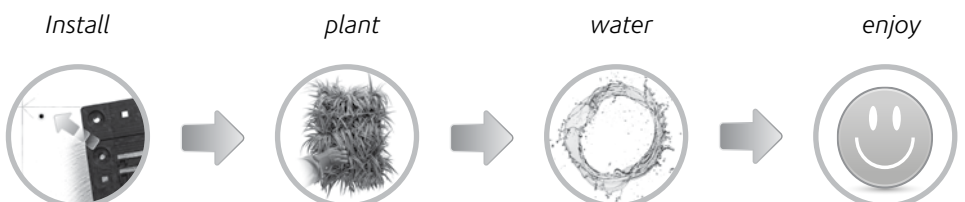
4 week watering cycle.



Optional Water Machine.



Optional LED Lighting System.



NEXT GEN LIVING WALLS INSTRUCTION MANUAL

How to Install, Plant, Water and Light the Wall

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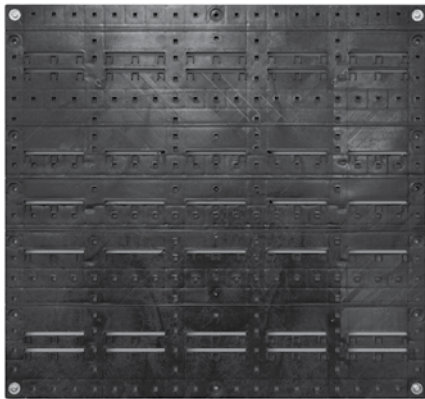
DISTRIBUTED IN NORTH AMERICA BY ARCHITECTURAL SUPPLEMETNTS

TOOLS NEEDED

Electric Drill, Extension Cord (Unless Drill is cordless), Level (at least 1 meter long), Tape Measure, Marking Pencil, Screw Driver.

NEXTGEN LIVING WALL COMPONENTS

STANDARD COMPONENTS



Grid



Tray with Drainage



Leaf Screen



Tray with no Drainage



Drain Hose

OPTIONAL COMPONENTS



Side Panels



HydroScreens



Water Meter



Track Lighting

GENERAL INSTALLATION GUIDELINES

- 1) Two people needed for proper installation.
- 2) If possible, obtain drawings of the wall to be installed on which show studs, wiring, water lines and other possible obstructions behind the wall.
- 3) Determine what material the wall is made of, including the studs behind the wall.
- 4) Bring each type of fastener to the job, no matter what material the wall is. We stock the fasteners.

UNDERSTANDING HOW THE GRID AND TRAY SYSTEM WORKS

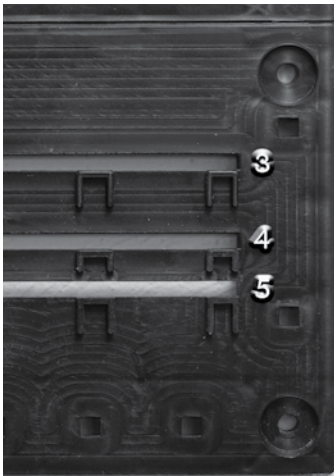
- 1) There are two different Grids, the GRID-5075 and the GRID-8075. The grids are for different trays, as follows:

GRID-5075: This grid is 50 cm long (19 ¾") by 75 cm high (29 ½") and holds the PT-50-1210 tray, which is 50 cm long (19 ¾") and holds smaller soil grow pots.

GRID-8075: This grid is 80 cm long (31 ½") by 75 cm high (29 ½") and holds the PT-100-1312 and the PT-100-1519 trays. Both trays are 100 cm long (39 ⅝") and hold hydro grow pots or larger soil grow pots.

NOTE: BOTH GRIDS PROVIDE GOOD VENTILATION THROUGH NUMEROUS AIR HOLES ON THE FRONT AND THROUGH VERTICAL AIR CHANNELS ON THE BACK OF EACH GRID.

- 2) GRID-5075 has numerous slots on it. Slot locations are marked with either a "3", "4", or "5". The most important slots on this grid are the "4" and "5" slots, because they allow either 4 or 5 of the PT-50-1210 trays to fit on each grid, depending on the size of the plants.



Grid-5075. Closeup of section showing slot numbers



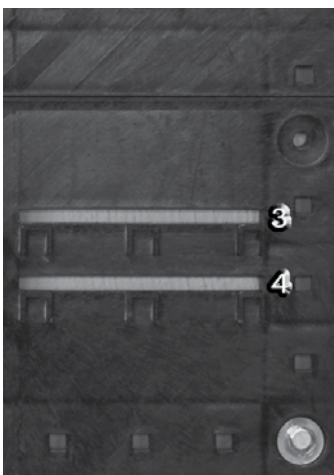
PT-50-1210



PT-50-1210, 5 per Grid

GRID-5075 covers an area of approximately .375 m² (4 square feet) when loaded with trays and plants.

- 3) GRID-8075 also has numerous slots, but no "5" slots. The slots marked "3" are designed to hold 3 of the PT-100-1519 trays. The PT-100-1312 trays can also be used 3 per grid, but normally the plants for the PT-100-1312 require tighter spacing between trays, so the slots marked "4" typically will be used for the PT-100-1312 trays. The PT-100-1519 trays can also be used 4 per grid if the plants for the installation are not developed enough to provide good coverage when only 3 trays per grid are used.



Grid-8075. Closeup of section showing slot numbers

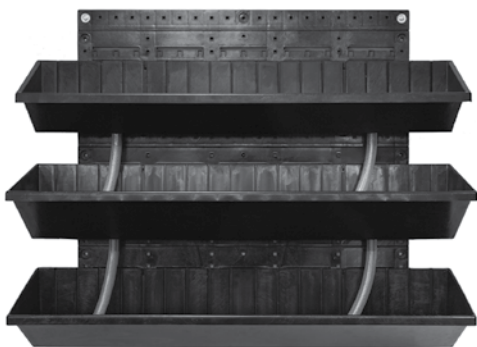


PT-100-1312



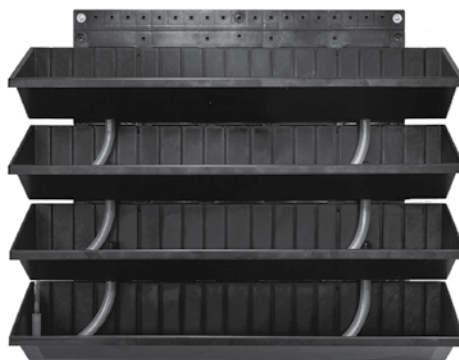
PT-100-1519

TRAYS ON GRIDS



(Bottom tray hangs 5 cm (2") below grid)

PT-100-1519, 3 per Grid



(Bottom tray hangs 8 cm (3 1/8") below grid)

PT-100-1312, 4 per Grid

GRID-8075 covers an area of approximately .75 m² (8 square feet) when loaded with trays and plants.

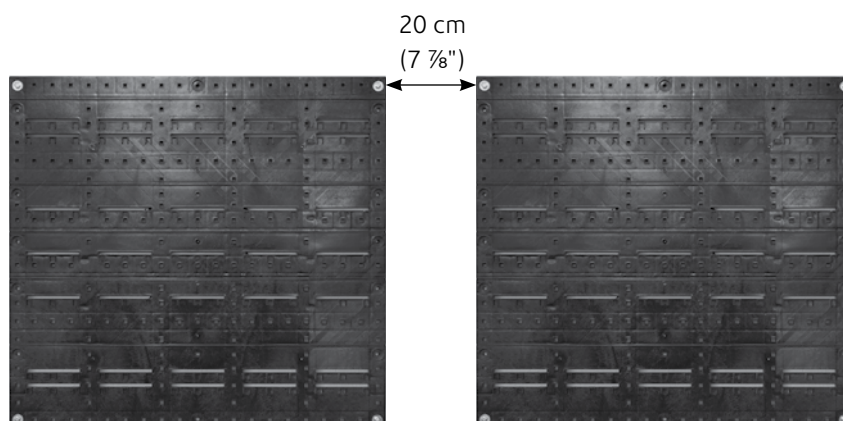
HORIZONTAL SPACING BETWEEN GRIDS

TRAY TYPE	GRID SIZE	SPACE BETWEEN EACH GRID
PT-50 TRAYS	50 cm (19 3/4") L X 75 cm (29 1/2") H	0
PT-100 TRAYS	80 cm (31 1/2") L x 75 cm (29 1/2") H	20 cm (7 7/8")

50 cm L x 75 cm H GRID SPACING



80 cm L x 75 cm H GRID SPACING



PUTTING UP THE BOTTOM ROW OF GRIDS

NOTE: IDENTIFYING THE CORRECT LOCATION FOR THE FIRST GRID IS THE MOST IMPORTANT STEP IN THE ENTIRE INSTALLATION. WE ALWAYS START WITH THE BOTTOM LEFT GRID AND WORK FROM THERE. YOU MUST DETERMINE WHERE YOU WANT THE LEFT SIDE OF THE NEXTGEN WALL TO BE AND WHERE YOU WANT THE BOTTOM OF THE WALL TO BE. FOLLOW THESE STEPS:

- 1) USE THE LEVEL AND A MARKING PENCIL TO DRAW A VERTICAL LINE TO ESTABLISH THE LEFT SIDE OF THE WALL.
 - A. GRID-5075: This grid is the same length as the tray that fits on it (50 cm / 19 ¾"), therefore, once you decide where you want the left side of the NextGen wall to be, that will be where the left side of the GRID-5075 will be.
 - B. GRID-8075: This grid is 80 cm (31 ½") long and holds trays that are 100 cm (39 ¾") long. Each tray is centered on the grid so the left side of the tray is 10 cm (4") from the left side of the grid and the right side of the tray is 10 cm (4") from the right side of the grid. Therefore, the GRID-8075 left side should be mounted 10 cm (4") from where you want the left side of the NextGen wall to be.

GRID-5075 TO BE MOUNTED FLUSH WITH THE DESIRED LEFT SIDE OF THE NEXTGEN WALL.

GRID-8075 TO BE MOUNTED 10CM (4") TO THE RIGHT OF THE DESIRED LEFT SIDE OF THE NEXTGEN WALL.

- 2) DETERMINE HOW FAR OFF THE FLOOR YOU WANT THE BOTTOM OF THE NEXTGEN WALL TO BE.
- 3) MARK THE SPOT WHERE THE TOP LEFT CORNER OF THE FIRST GRID WILL GO.
 - A) It is important to understand that depending on the slot number selected, the bottom trays will hang down below the grid by a varying amount, as follows:

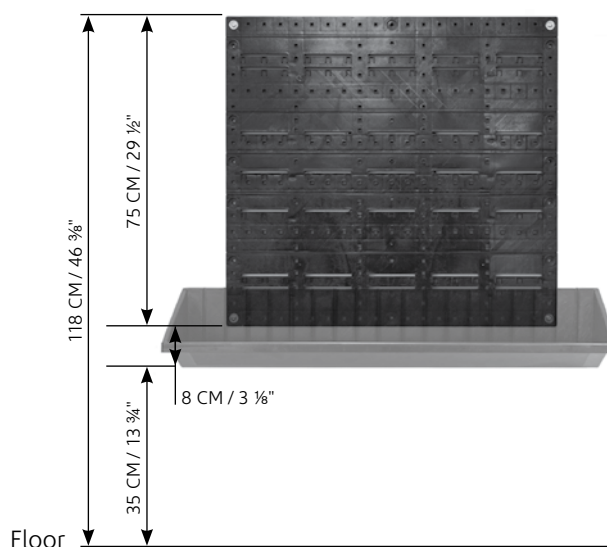
BOTTOM TRAY

HANGS BELOW GRID BY:	CM	IN
PT-100 IN "3" SLOT:	5	2
PT-100 in "4" SLOT:	8	3 ⅛
PT-50 IN "5" SLOT:	6	2 ¾
PT-50 IN "4" SLOT:	2,5	1

- C. The grids are 75 cm (29 ½") tall, so once you know the height from the floor you simply add this to the height of the grid plus the amount the bottom tray will be hanging down from the bottom of the grid.

Example:

	CM	IN
A. Bottom Distance From Floor:	35	13 ¾
B. PT-100 in "4" SLOT:	8	3 ⅛
C. Height of Grd:	75	29 ½
D. Top of Grid distance from floor	118	46 ¾

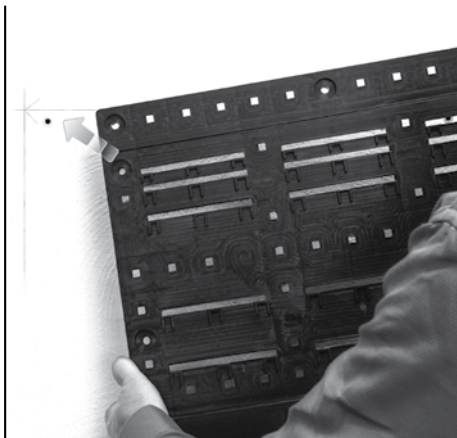


4) USE THE LEVEL AND MARKING PENCIL TO MARK THE LINE WHERE THE TOP OF THE GRID WILL BE.

5) INSTALL THE FIRST GRID.

EDGE OF
NextGen
Wall

Floor



A) One person holds the first grid in place (in line with mounting lines) while the other person uses a marking pencil to mark 4 mounting holes (in the 4 corners).*

NOTE: GRID CANNOT MOVE DURING THIS PROCESS.

* 4 holes provide plenty of holding power as long as the correct fasteners are used, but additional holes are available. We do not recommend light duty fasteners under any circumstances.

B) Remove grid and drill holes using correct size drill bit.

Note: If you are drilling in Drywall (Gypsum) and encounter resistance it might be a stud (either aluminum or wood). Check the drawings of the wall to verify or try to drill into the wall using the hole in the grid directly below. If resistance is still encountered it is probably a stud, so you will need to use a lag screw (and the appropriate size drill bit for the lag screw) rather than a Drywall (Gypsum) fastener for that hole.

C) Place grid over top of holes and connect to the wall using the correct fasteners and washers.

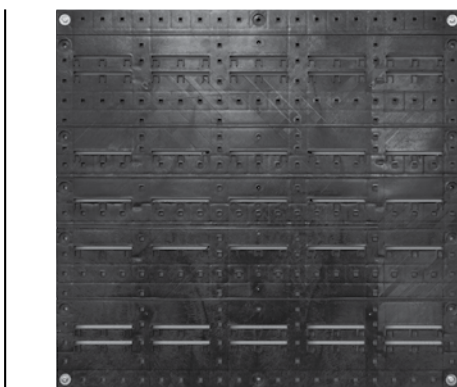
EDGE OF
NextGen
Wall

Floor



EDGE OF
NextGen
Wall

Floor



6) INSTALL THE SECOND GRID.

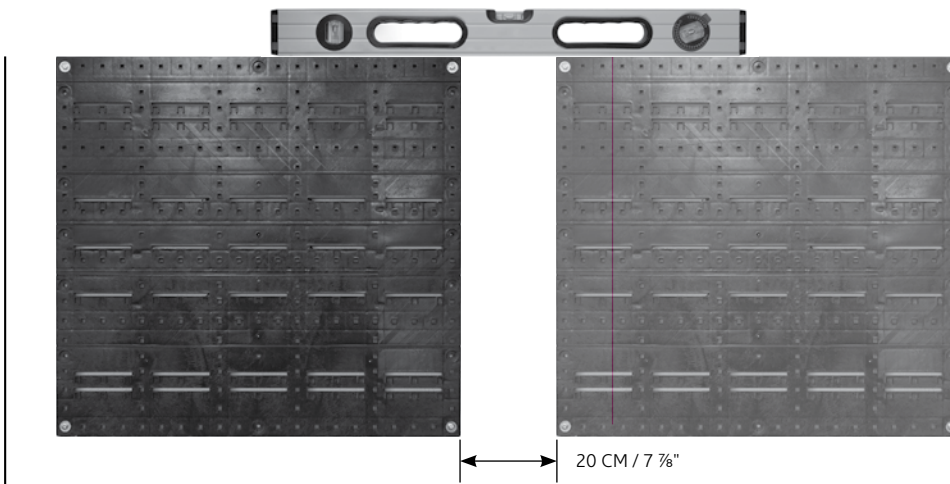
Place the level on top of the first grid and draw a horizontal line to serve as the horizontal mounting line for the next grid.

* If you are using the GRID-5075 it goes flush against the first grid. The GRID-8075 goes 20 cm (7 7/8") to the right of the first grid. In that case, measure over 20 cm (7 7/8") from the first grid and use the level to make a vertical mounting line.

SECOND GRID GOES HERE.*

EDGE OF
NextGen
Wall

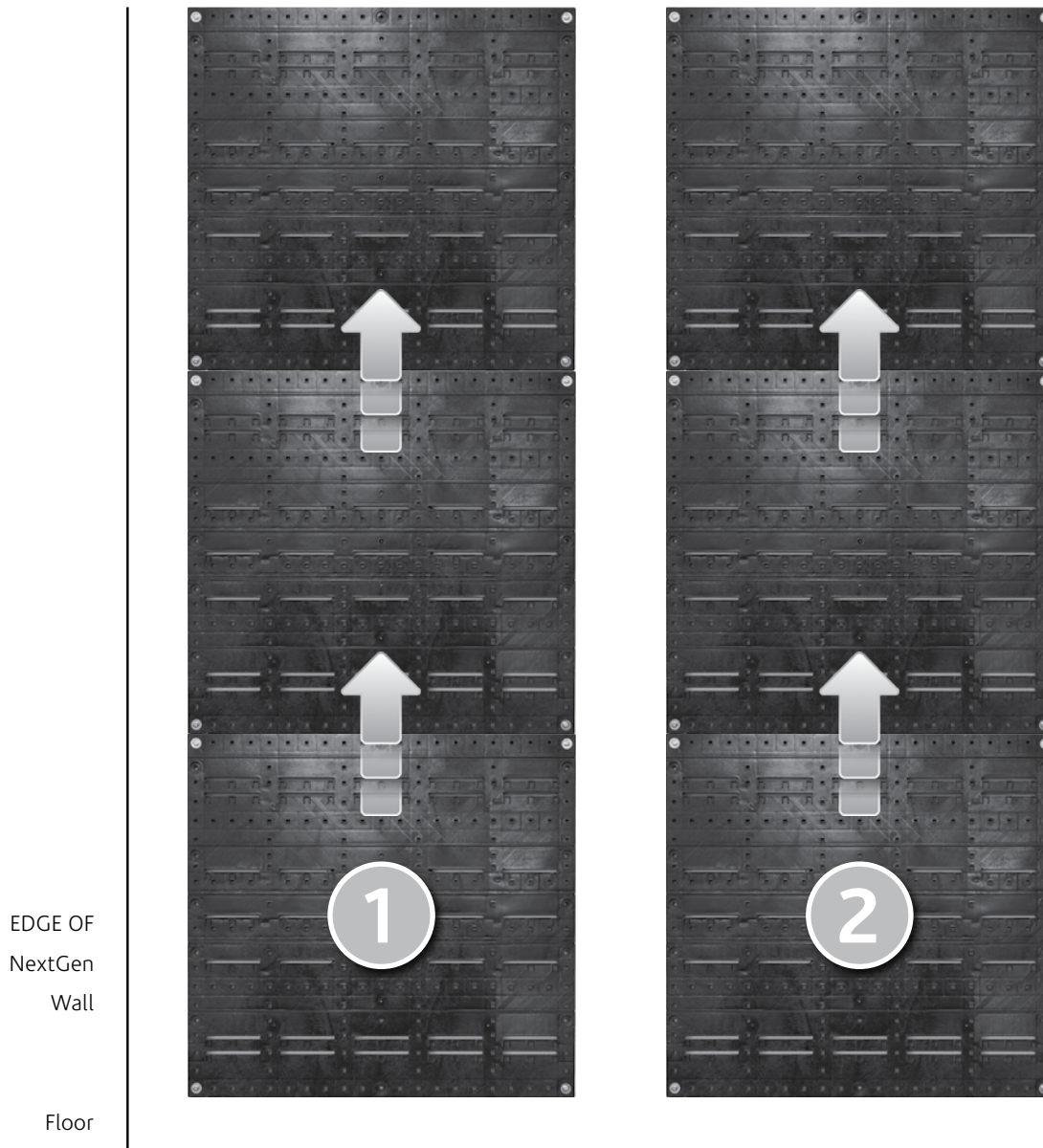
Floor



7) YOU ARE NOW READY TO MOUNT THE SECOND GRID USING STEPS 3 THROUGH 5 ABOVE. CONTINUE FROM LEFT TO RIGHT IN THIS MANNER UNTIL THE ENTIRE BOTTOM ROW OF GRIDS IS INSTALLED.

GOING VERTICAL WITH THE GRIDS

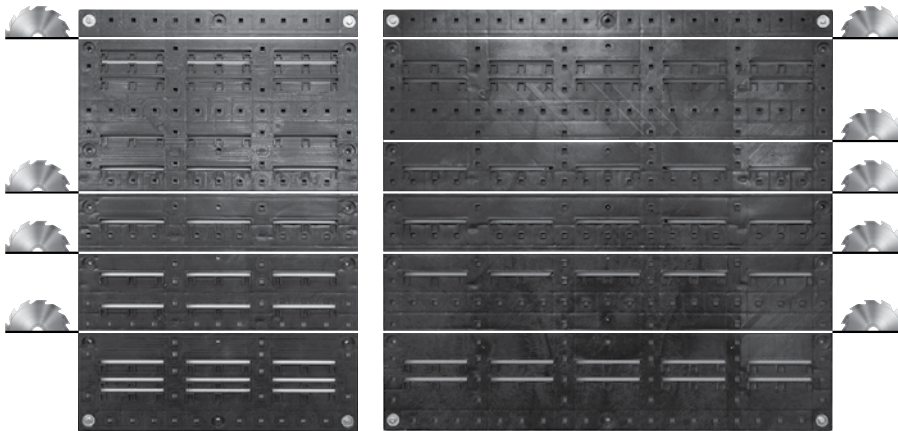
Simply place a grid on top of the one below it. One person lines up the grid while the other marks the holes. The holes are drilled and the grid is connected as before. For more precision, you can extend a vertical line up from each bottom grid to use a guide.



HEIGHT ADJUSTMENTS TO THE GRIDS

The standard height of each grid is 75 cm (29 ½").

If this increment leads to a wall height that is not what you want, you can easily cut the top grid to your desired height using a table saw or jig saw. Cut lines have been provided to make this easier.

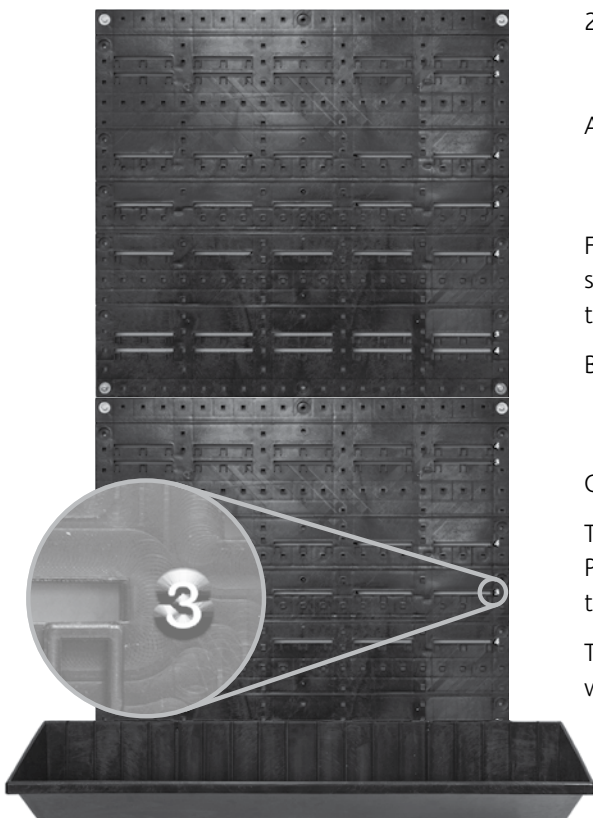


Grid-5075 Cut Lines

Grid-8075 Cut Lines

MOUNTING THE TRAYS ON THE GRIDS

1) PREPARE THE TRAYS WITH DRAINS BY ATTACHING THE LEAF SCREENS AND THE DRAIN HOSES



2) KNOW HOW MANY TRAYS YOU ARE USING PER GRID

A. For the PT-100 Trays there is a choice to use either 3 or 4 trays per grid, depending on how developed the plants are and how much plant density and coverage is desired.

For the PT-50 Trays, there is an additional option of 5 plants per grid since the plants used in this tray are much smaller than those used in the PT-100 trays.

B. There are slots on the grids to receive the trays. The numbers 3, 4 or 5 appear beside the slots. If you are doing a 4 tray per grid installation, the trays are to be inserted in the slots marked 4.

C. WORK YOUR WAY FROM THE BOTTOM TO THE TOP.

The bottom tray of the stack is normally a tray with no drain holes. Put this tray in first, then work your way up from the bottom to the top.

The drain hoses are flexible to allow placement without interference with the leaf screens.

ATTACHING THE SIDE PANELS



Velcro Strips



Rough Piece
Soft Piece

Note: Velcro comes in two pieces which connect together.
We call them the Rough Piece and the Soft Piece.

- 1) Peel white covering from back of Rough Piece to expose sticky side.
- 2) Place sticky side on side rim of Bottom Tray.
- 3) Attach Soft side of Velcro to rough side but leave the white covering on Soft half until later.
- 4) Skip a few trays and repeat process.
- 5) When finished attaching Velcro, remove white covering from all Velcro. The Velcro is now ready to receive the Side Panel.
- 6) Being careful not to touch the side panel to the sticky Velcro, line the bottom of the Side Panel up with the bottom of the bottom tray.
- 7) Making sure that the vertical side of the Side Panel is flush with the wall, push the Side Panel against the Velcro and make sure it is firmly attached.
- 8) Repeat process for next section of Side Panel.



PLANTING

PLANT SIZES

The NextGen Trays have been designed to hold plants in their original grow pots, whether Hydro or Soil. There are three sizes of trays to enable a diverse array of grow pot and plant possibilities in both Europe and North America, as follows:

PT-50-1210 TRAYS		PT-100-1312 TRAYS		PT-100-1519 TRAYS	
EUROPE					
					
12cm x 10cm H	13cm x 12cm H	14cm x 14cm	15cm x 19cm H	15cm x 19cm	
Soil Grow Pots	Hydro Pots	Soil Pots	Hydro Pots	Hybrid (Bottom Half Hydro, Top Half Soil)*	
PT-50-1210 TRAYS		PT-100-1312 TRAYS		PT-100-1519 TRAYS	
NORTH AMERICA					
					
4" Soil Pot	6" Soil Pot	8" Soil Pot	15cm x 19 cm		
			Hybrid (Bottom Half Hydro, Top Half Soil)*		

* Hybrid Pots are made by using the 15 x 19 Hydro Pots from Europe (we also stock these in North America). The bottom half of the pot is filled with Hydro pebbles, the traditional Hydro growing medium used in Europe, then a 14cm (6") soil plant is removed from its original grow pot and placed in the top of the 15 x 19 grow pot. (We also stock Hydro pebbles, known as Light Expanded Clay Aggregate, in North America.) This enables the soil plants to benefit from the pebbles more efficient management of air and water, extending the watering cycle and improving plant health in the same way that occurs with our Sub-Irrigation systems. Capillary wicks should be used to enhance capillary action of the hybrid option. (We also supply the wicks.)

PLANT TYPES

When proper light is present, virtually any kind of plant can be used with the NextGen walls. We supply an optional LED lighting system that insures this, but when that is not used, there are many plants that have a good history in performing well in moderate lighting conditions, including the following:

1. Aglaonema/Chinese Evergreen: Upright plant with many color options to choose from.
2. Dracaena: Upright plant with many color options to choose from.
3. Nephthytis/Syngonium: Upright plant with many color options to choose from.
4. Philodendron: Hanging plant with many color options to choose from.
5. Scindapsus/Pothos: Hanging plant with many color options to choose from.
6. Chlorophytum/Spider Plant: Hanging plant with dark to light variation to choose from.

PLACING THE PLANTS IN THE TRAYS

HYDRO PLANTS

Some preparatory work is needed to insure that Hydro plants perform successfully in the NextGen trays.

A. SHAKE OFF EXCESS Hydro pebbles

The top portion of the pebbles in most Hydro pots is for decoration purposes only. This excess should be shaken off into a bucket. The pebbles lower down in the grow pot are held in place by the roots of the plant and will not want to roll out of the pot when it is turned at an angle as it goes into the NextGen trays.

B. SNAP ON THE HYDROSCREENS™

In case a few loose pebbles remain in the plant, we have developed a HydroScreen, which snaps easily and firmly onto the top of the Hydro Pots. There is a HYDROSCREEN™ for the 1312 Hydro Pot and a slightly larger one for the 1519 Hydro Pots.

Both HydroScreens are designed so they can be custom fitted based on the size of the plant in the pot. For larger, more developed plants, simply trim away 1 or 2 of the HydroScreen ribs using a simple pair of scissors.



Scissors for Trimming HydroScreens if necessary.



The post on the HydroScreen slips into the hole on the Hydro pots and then the HydroScreen is snapped into place.



C. PLACING THE HYDRO PLANTS IN THE TRAY

There is a "flat" section on the Hydro Pots that is created by the indents that form a V on the side of the pots. This section is to be placed on the angled section of the tray so the pots do not want to roll.

SOIL PLANTS

Soil plant grow pots can be placed in the trays on any section of the pot circumference that you desire. Before placing in the trays, if you notice any loose soil at the top, just pack it down lightly.

WATERING THE NEXTGEN LIVING WALL

Some wall systems have a water reservoir on the floor and water must be pumped up using an electric pump. With the NextGen system, the water reservoir is on the wall itself, in each and every tray. In most cases, the wall will be built with the upper trays having drain posts that enable the tray to be filled to a certain level, then drain excess water down to the next tray. The very bottom tray will have no drains and will function as the final reservoir. This section will explain how to water the wall from the top down without too much water ending up in the bottom trays. This is easily accomplished.

The easiest way to water the NextGen walls is using a Watering Machine.

No matter what the source of water, you follow these steps:

- 1) Select a water flow that is about medium.
- 2) Water the top tray first. Allow water to enter the tray until you see or hear the water draining down into the next tray down. Move to the next tray down.
- 3) Follow this procedure approximately $\frac{2}{3}$ of the way down the wall.
- 4) When you get down to the bottom third of the wall, pay careful attention not to overfill the tray immediately above the bottom tray.
- 5) Allow the system to stop draining. Fill the bottom tray to the appropriate level. (Optional Water Level Indicators are available for use in the trays if more precision is required.)
- 6) Wait 15-20 minutes while the grow pots are saturating themselves with water. (During this time, you can prune away any dead or unsightly leaves). Then refill the trays to the height of the drains. This will allow for a maximum watering cycle.
- 7) You can use the Optional Water Meter in the PT-100 trays if you want to, although it is not necessary.

Water NextGen Living Wall from Top to Bottom



LIGHTING THE WALL

HOW MUCH LIGHT IS NEEDED

Ideally, the wall will have light in the range of 1600 to 3200 Lux (150 to 300 Footcandles). Plants can survive with less light than this but if you want to maximize plant life and minimize plant replacements this is the light range you want. Use a light meter to determine if additional light is needed at the proposed wall location.

OUR LIGHTS

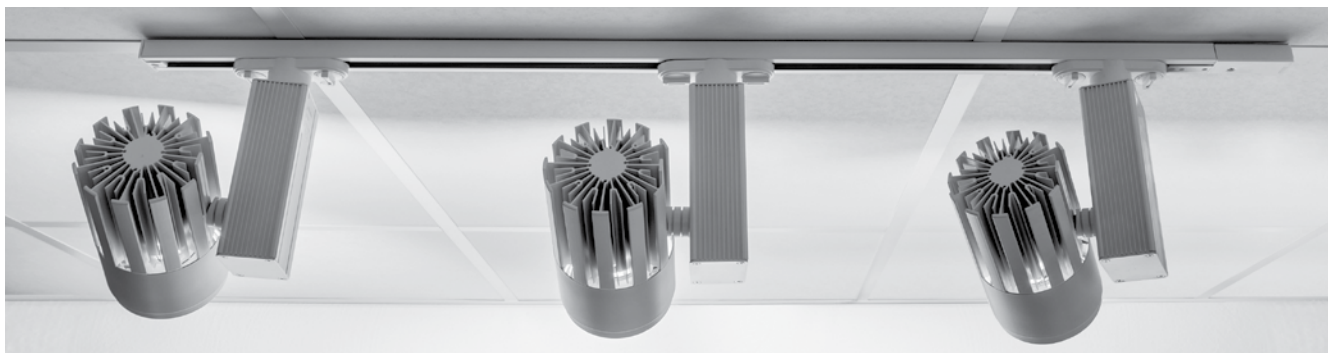
We have tested many different kinds of light, and found the ideal LED track light specification to provide not only the right amount of light to the wall, but the right kind of light.

Next Gen LED Track Light Specifications:

Wattage	40w
Color Temperature	5500k
Beam Angle	60 degrees
Number of Wires	3 (2 conductors, 1 ground)
Phase	Single
Coverage	Generally, one bulb can cover an area of 1.5 to 2 square meters (15 to 20 square feet), depending on the location of the light in relation to the wall. Typically the track will be mounted 1 to 2 meters (3 to 6 feet) from the wall.
Certifications	CE, RoHS approved, UL approved LED Driver
Track Fit	Fits standard 3 wire-track

Example

A wall that is 3 meters long and 1.5 meters high can easily be lit by 3 bulbs on one track, for example.



INSTALLING LIGHTING

No matter if you use our Lighting System or another one, an electrician should be used to do the installation. If you are installing our lights, let the electrician know it is a 1 phase/three-wire light and that they should bring the track and mounting clips needed for the installation.

The appropriate track type is a standard 3 wire-track.

It is also ideal if your electrician installs a switch and a timer so the lights can run during the day and be off at night. 10-12 hours a day of light is ideal for most plants.

NEXTGEN LIVING WALLS SPECIFICATIONS



GRIDS	Description	Length		Height		Depth		Weight	
		CM	IN	CM	IN	CM	IN	KG	LBS
GRID-5075	Grid for the PT-50-1210 Trays	50	19.7	75	29.5	2	0.8	1,75	3.9
GRID-8075	Grid for the PT-100-1312 and PT-100-1519 Trays	80	31.5	75	29.5	2	0.8	2,8	6.2

TRAYS		Length		Height		Depth		Weight		# of plants per tray		Water Capacity when unplanted		Estimated Weight when planted/watered	
		CM	IN	CM	IN	CM	IN	KG	LBS	Hydro	Soil	Liters	Gallons	KG	LBS
PT-50-1210	Holds 12 cm x 10 cm H or 4" soil plants.	50	19.7	13	5.1	15	5.9	1	2.2	na	3-4	1,6	0.42	5	11.0
PT-50-1210-DP*															
PT-100-1312	Holds 13 cm x 12 cm Hydro or 14 cm soil or 6" soil plants.	100	39.4	17	6.7	20	7.9	1,8	4.0	6	5	5,4	1.43	12,5	27.6
PT-100-1312-DP*															
PT-100-1519	Holds 15 cm x 19 cm Hydro or 20 cm or 8" soil plants.	100	39.4	17	6.7	26	10.2	2,5	5.5	5	4	7	1.85	15	33.1
PT-100-1519-DP*															

*DP stands for Drain Post. When no "DP" in model it is a no hole tray and often is used as the bottom tray in a vertical row.

TRAY AND GRID COMBINATIONS	Estimated Weight planted/watered		Area Covered	
	KG	LBS	M2	Sq. Ft.
5 PT-50-1210 ON GRID-5075	27	60	0,375	4
4 PT-100-1312 ON GRID-8075	53	117	0,75	8
3 PT-100-1519 ON GRID-8075	48	106	0,75	8

ACCESSORIES**

LF-09	Leaf Screen
DH-14	Drain Hose for PT-50-1210-DP
DH-24	Drain Hose for PT-100-1519-DP and PT-100-1312-DP
SP-1880	18 cm x 80 cm Side Panels for PT-50-1210 installations.
SP-18155	18 cm x 155 cm Side Panels for PT-50-1210 installations.
SP-2480	24 cm x 80 cm Side Panels for PT-100-1312 installations.
SP-24155	24 cm x 155 cm Side Panels for PT-100-1312 installations.
SP-3080	30 cm x 80 cm Side Panels for PT-100-1519 installations.
SP-30155	30 cm x 155 cm Side Panels for PT-100-1519 installations.
HS-1312	HydroScreen for 1312 hydro pots
HS-1519	HydroScreen for 1519 hydro pots

**We also have fasteners for attaching the Grids to walls and Velcro for attaching the Side Panels to the Walls.

OPTIONAL WATER MACHINE

WM-95L	95 Liter Water Machine (25 gallon)
FI-WM95L	Fertilizer Infuser for Water Machine

OPTIONAL LED LIGHTING SPECS

LED40	LED Light 40 watt
Wattage	40w
Color Temperature	5500k
Beam Angle	60 degrees
Number of Wires	3 (2 conductors, 1 ground)
Phase	Single
Coverage	1.5 to 2 square meters (15-20 square feet)
Certifications	CE, RoHS approved, UL approved LED Driver



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