



**acniti LLC**  
1-2-9 Nyoidani  
Minoh Osaka  
562-0011  
Japan

**acniti**

**agrigalf**

Nanobubble generator to improve irrigation water quality in greenhouses, horticulture and agriculture for healthier roots, vigorous growth, and increased yield



## agrigalf

### ultrafine agrigalf nanobubble generator

- ✓ Hybrid design increases both dissolved oxygen levels and generates ultrafine bubbles.
- ✓ Optimized control suppresses the rise in temperature and reducing power consumption.
- ✓ Improve performance of plant factories, urban farming or city farming operations.
- ✓ Larger units available for horticulture greenhouse companies.
- ✓ Suitable for aeration of RAS and fish-tanks (Recirculating aquaculture system).
- ✓ agriGaLF requires a compressor or for better results an oxygen concentrator.

The agriGaLF uses a hybrid technology for optimization of dissolved oxygen and ultrafine bubble production. High dissolved oxygen levels in irrigation water accelerates the growth of plant roots and activates micro-organisms in the rootzone.

The agriGaLF is available in various sizes, the smallest unit is 1.5 m<sup>3</sup>/h, 6 m<sup>3</sup>/h and the largest is 12 m<sup>3</sup>/h. There is an option to buy the agriGaLF pumpless, in this case the user needs to add the pump locally. The best way to operate the agriGaLF is to recirculate the water in the day storage tank, it's not recommended to use the agriGaLF inline with the dosing unit. The agriGaLF is equipped with a PLC for standalone operation but the PLC can be easily connected to any climate computer in a greenhouse.

The agriGaLF works best in combination with an oxygen concentrator. Alternatively, a compressor can be used to provide gas to the unit. A compressor supplies a little less than 20% oxygen while an oxygen concentrator supplies 95% oxygen. This makes the unit 5 times more efficient. From an electricity usage point of view its more economical to run the unit on an oxygen concentrator. The smaller agriGaLF units have a compressor on board the larger units need to have the compressor added locally when opting for a compressor instead of an oxygen concentrator.

## agrigalf 15 specs

|    | Description                    | Metric                         | Imperial                       |
|----|--------------------------------|--------------------------------|--------------------------------|
| 1  | Model name                     | agriGaLF 15                    | agriGaLF 15                    |
| 2  | Model number                   | FZ1G-15                        | FZ1G-15                        |
|    | Liquid                         | Metric                         | Imperial                       |
| 3  | Flow / minute                  | 25 Liter                       | 6.6 Gallon                     |
| 4  | Flow / hour                    | 1.5 M3                         | 53.0 CF                        |
| 5  | water temperature minimum      | 0 °C                           | 32 °F                          |
| 6  | water temperature maximum      | 50 °C                          | 122 °F                         |
| 7  | Strainer availability and size | Yes 400 µm                     | Yes 400 µm                     |
| 8  | Recommended inlet filter(s)    | Small pump inlet filter series | Small pump inlet filter series |
|    | Ambient                        | Metric                         | Imperial                       |
| 9  | Ambient temperature minimum    | 0 °C                           | 32 °F                          |
| 10 | Ambient temperature maximum    | 40 °C                          | 104 °F                         |
| 11 | Relative humidity minimum      | 45 %                           | 45 %                           |
| 12 | Relative humidity maximum      | 85 %                           | 85 %                           |
|    | Gas                            | Metric                         | Imperial                       |
| 13 | Flow / minute                  | 1.0 Liter                      | 0.3 Gallon                     |
| 14 | Flow / hour                    | 60 Liter                       | 16 Gallon                      |
| 15 | Pressure                       | 130 kPa                        | 19 PSI                         |

| Gas                          | Metric   | Imperial   |
|------------------------------|--|--|
| 16 Gas quality               | Do not use corrosive gases. Use of Oxygen, Carbon Dioxide, Nitrogen or Ambient Air is allowed. | Do not use corrosive gases. Use of Oxygen, Carbon Dioxide, Nitrogen or Ambient Air is allowed. |
| 17 Gas remark                | Gas intake time 3 seconds / 2 minutes.   | Gas intake time 3 seconds / 2 minutes.   |
| Electrical                   | Metric   | Imperial   |
| 18 Unit phase Ø voltage      | 1 Ø 110 ~ 120 VAC  | 1 Ø 110 ~ 120 VAC  |
| 19 Unit power consumption    | 1000 watts   | 1000 watts   |
| 20 Wetted parts              | PP   | PP   |
| 21 Pump phase Ø voltage      | 1 Ø 100 VAC / 1 Ø 200 VAC  | 1 Ø 100 VAC / 1 Ø 200 VAC  |
| 22 Pump motor 50Hz           | 170 Watt   | 0.2 hp   |
| 23 Pump motor 60Hz           | 265 Watt   | 0.4 hp   |
| 24 Pump head 50Hz            | 15 Meter   | 49 ft  |
| 25 Pump head 60Hz            | 21 Meter   | 69 ft  |
| 26 Pump phase Ø voltage 60Hz | 1 Ø 100 VAC / 1 Ø 200 VAC  | 1 Ø 100 VAC / 1 Ø 200 VAC  |
| 27 Pump suction method       | Spiral magnetic drive pump   | Spiral magnetic drive pump   |
| 28 Pump pressure setting     | Manual via valve   | Manual via valve   |
| 29 Control                   | PLC-control  | PLC-control  |
| Dimensions & weight          | Metric   | Imperial   |
| 30 Dim. (w) x (d) x (h)      | 550 x 420 x 610 mm   | 21.7 x 16.5 x 24.0 inch  |
| 31 weight                    | 69 Kg  | 152.1 lbs.   |
| 32 Shipping dim. (w)x(d)x(h) | 104 x 96 x 104 cm  | 41 x 38 x 41 inch  |
| 33 Shipping weight           | 107 Kg   | 236 lbs.   |

## agrigalf 60 specs

| Description |                                | Metric                                 | Imperial                               |
|-------------|--------------------------------|--|--|
| 1           | Model name                     | agriGaLF 60                            | agriGaLF 60                            |
| 2           | Model number                   | FZ1G-60                                | FZ1G-60                                |
| Liquid      |                                | Metric                                 | Imperial                               |
| 3           | Flow / minute                  | 100 Liter                              | 26 Gallon                              |
| 4           | Flow / hour                    | 6.0 M3                                 | 211.9 CF                               |
| 5           | water temperature minimum      | 0 °C                                   | 32 °F                                  |
| 6           | water temperature maximum      | 50 °C                                  | 122 °F                                 |
| 7           | Strainer availability and size | Yes 400 µm                             | Yes 400 µm                             |
| 8           | Recommended inlet filter(s)    | Medium pump inlet filter series        | Medium pump inlet filter series        |
| Ambient     |                                | Metric                                 | Imperial                               |
| 9           | Ambient temperature minimum    | 0 °C                                   | 32 °F                                  |
| 10          | Ambient temperature maximum    | 40 °C                                  | 104 °F                                 |
| 11          | Relative humidity minimum      | 45 %                                   | 45 %                                   |
| 12          | Relative humidity maximum      | 85 %                                   | 85 %                                   |
| Gas         |                                | Metric                                 | Imperial                               |
| 13          | Flow / minute                  | 4.0 Liter                              | 1.1 Gallon                             |
| 14          | Flow / hour                    | 240 Liter                              | 63 Gallon                              |
| 15          | Pressure                       | 130 kPa                                | 19 PSI                                 |
| 16          | Gas remark                     | Gas intake time 3 seconds / 2 minutes. | Gas intake time 3 seconds / 2 minutes. |

|    | Electrical             | Metric   | Imperial   |
|----|------------------------|--|--|
| 17 | Unit phase Ø voltage   | 3 Ø 200 ~ 240 VAC  | 3 Ø 200 ~ 240 VAC  |
| 18 | Unit power consumption | 2000 watts   | 2000 watts   |
| 19 | Pump model             | No corrosive gases.<br>Can use Oxygen,<br>Carbon Dioxide,<br>Nitrogen or Ambient Air | No corrosive gases. Can<br>use Oxygen, Carbon<br>Dioxide, Nitrogen or<br>Ambient Air |

## agrigalf 120 specs

|    | Description                    | Metric                          | Imperial                        |
|----|--------------------------------|---------------------------------|---------------------------------|
| 1  | Model name                     | agriGaLF 120                    | agriGaLF 120                    |
| 2  | Model number                   | FZ1G-120                        | FZ1G-120                        |
|    | Liquid                         | Metric                          | Imperial                        |
| 3  | Flow / minute                  | 200 Liter                       | 53 Gallon                       |
| 4  | Flow / hour                    | 12 M3                           | 424 CF                          |
| 5  | water temperature minimum      | 0 °C                            | 32 °F                           |
| 6  | water temperature maximum      | 45 °C                           | 113 °F                          |
| 7  | Strainer availability and size | Yes 400 µm                      | Yes 400 µm                      |
| 8  | Recommended inlet filter(s)    | Medium pump inlet filter series | Medium pump inlet filter series |
|    | Ambient                        | Metric                          | Imperial                        |
| 9  | Ambient temperature minimum    | 0 °C                            | 32 °F                           |
| 10 | Ambient temperature maximum    | 40 °C                           | 104 °F                          |
| 11 | Relative humidity minimum      | 45 %                            | 45 %                            |
| 12 | Relative humidity maximum      | 85 %                            | 85 %                            |
|    | Gas                            | Metric                          | Imperial                        |
| 13 | Flow / minute                  | 8.0 Liter                       | 2.1 Gallon                      |
| 14 | Flow / hour                    | 480 Liter                       | 127 Gallon                      |
| 15 | Pressure                       | 130 kPa                         | 19 PSI                          |

| Gas        |                        | Metric   | Imperial   |
|------------|------------------------|--|--|
| 16         | Gas quality            | Do not use corrosive gases. Use of Oxygen, Carbon Dioxide, Nitrogen or Ambient Air is allowed. | Do not use corrosive gases. Use of Oxygen, Carbon Dioxide, Nitrogen or Ambient Air is allowed. |
| 17         | Gas remark             | Gas intake time 3 seconds / 2 minutes.   | Gas intake time 3 seconds / 2 minutes.   |
| Electrical |                        | Metric   | Imperial   |
| 18         | Unit phase Ø voltage   | 3 Ø 200 ~ 240 VAC  | 3 Ø 200 ~ 240 VAC  |
| 19         | Unit power consumption | 3000 watts   | 3000 watts   |