

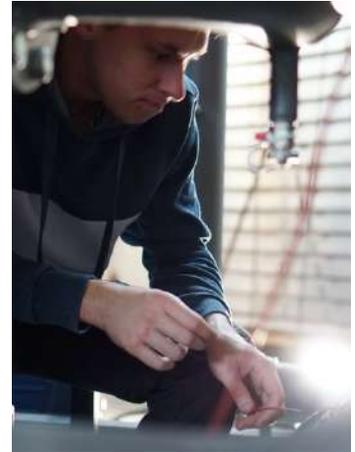


PHANTOR

THE MOBILE WATER GIANT

TECHNICAL DATASHEET

Technical data	
Length	12 m
Width	2,28 m
Height	2,65 m
Weight	14.300 kg
Power supply	max 120 kW (400V, 50Hz) 4.8 kWh neoom® Li-ion off grid battery system for autonomous emergency power supply
	Oil free chiller system, contact free magnetic bearings for highest efficiency and low maintenance
Water treatment	Combi filter, UV-disinfection, mineralization, bacterial filter. Verified drinking water (above WHO standards)
Integrated water tank	1,000 Liters
Integrated photovoltaics	1.5 kW power
Housing	Suitable for installation near the coast. Housing and steel structure in C5 coating
Measuring control technology	State of the art PLC with NTUITY® Link On Board (including visualization and remote control)



The thermodynamic simulation model of PHANTOR was developed in cooperation with the University of Applied Sciences Upper Austria. Tests in the climatic chamber of the accredited test center Rail Tec Arsenal confirm the outstanding function of PHANTOR and show that the real results are in agreement with the simulation model.



rel. F [%]	Waterproduction per 24 hours												Rail Tec Arsenal Austria		
	0,01	12,50	15,00	17,50	20,00	22,50	25,00	27,50	30,00	32,50	35,00	37,50	40,00		
95		2 055	3 071	4 039	5 127	6 351	7 775	9 396	10 240	10 168	10 674	10 890	7 573		
85			2 435	3 293	4 279	5 361	6 574	7 977	8 779	9 078	8 672	9 117	6 143		
75			1 821	2 550	3 454	4 418	5 522	6 603	7 641	7 769	8 067	7 629	4 938		
65					2 603	3 449	4 416	5 469	6 567	6 699	6 689	6 685	4 634		
55						2 479	3 308	4 228	5 201	6 334	6 981	6 316	4 764		
45								2 936	3 754	4 683	5 711	6 274	4 428		
35												4 747	4 186		
30													3 717		
[°C]	0,01	12,50	15,00	17,50	20,00	22,50	25,00	27,50	30,00	32,50	35,00	37,50	40,00		



rel. F [%]	Energyefficiency in Watthours per litre												Rail Tec Arsenal Austria		
	0,01	12,50	15,00	17,50	20,00	22,50	25,00	27,50	30,00	32,50	35,00	37,50	40,00		
95		427	327	289	285	282	260	260	211	210	194	183	206		
85			394	328	310	301	308	268	249	253	252	229	264		
75			454	415	351	329	331	365	323	319	289	283	338		
65					416	383	354	352	379	366	357	338	373		
55						479	419	389	395	384	377	378	394		
45								484	467	443	432	425	459		
35												495	532		
30													582		
[°C]	0,01	12,50	15,00	17,50	20,00	22,50	25,00	27,50	30,00	32,50	35,00	37,50	40,00		





In response to the increasing demand for new ways to produce drinking water and building on the latest scientific findings, we developed an atmospheric water generator that surpasses everything that has gone before.

The Mobile Water Giant PHANTOR marks a new category in the field of atmospheric water generators. PHANTOR, as a high-performance mobile AWG, is designed for both stationary and semi-stationary use, unlike most conventional atmospheric water generators.

PHANTOR can extract up to 10,000 liters of drinking water from the air daily and thus belongs to the biggest AWGs.

The innovative design of the system and the integrated self-optimizing software set new standards in the field of energy efficiency of atmospheric water generators. This shows

the years of experience in the field of energy systems and renewable energies of neoom group gmbh, the company behind the project. With PHANTOR, the concentrated know-how of the neoom hardware and NTUITY software team is driven to perfection.

PHANTOR is named after the elephant, who can smell water for several kilometers and even drill for it.



Who needs a mobile water generator?

AWGs are used where water scarcity is a daily challenge: in remote locations, in dry regions or agricultural areas, during peacekeeping operations and catastrophes, but also for urban development.

In large Green Housing plants, drying equipment is used to keep the humidity in the greenhouse in the optimum range. At the same time, water is used for irrigation. These two activities can be perfectly combined with an atmospheric water generator: The processed water from the air is added back to the roots of the plants.

During peacekeeping missions or disaster operations, a self-sufficient water supply system must be set up temporarily. PHANTOR can be delivered immediately by container and produce drinking water on site.

The PHANTOR atmospheric water generator can supply a complete residential building, hotel or hospital with fresh water. In many areas this is more economical than a water pipe.

AWG = ATMOSPHERIC WATER GENERATOR

PHANTOR, the high-performance mobile AWG

Current AWG on the market are often too small to produce sufficient water or too complex and only intended for stationary use. The mobile water giant PHANTOR represents the missing link in the field of atmospheric water generators and sets several new standards in mobile water extraction and water treatment. PHANTOR is designed as a mobile high-performance AWG for both stationary and semi-stationary use. In order to increase energy efficiency, the dehumidified and cool air is not simply blown out in the circuit, but fed directly inside the housing to the recycler for cooling the system.

In addition, PHANTOR can generate energy for the basic supply from renewable sources through a photovoltaic system on the roof. In combination with a power storage unit, power outages are no longer a problem. Depending on the application, a suitable operation strategy of the high-performance AWG can be individually selected.

Depending on the application, a suitable strategy for the operation of the high-performance AWG can be selected individually.



Hardware and software in perfect symbiosis

With a volume of 10,000 litres of drinking water per day, PHANTOR belongs to the top league of AWGs and at the same time provides innovative functions that open up completely new possibilities for added value for the operator. The system is equipped with a self-optimizing control system and secure remote access via the Internet is possible at any time and worldwide. Current weather data is continuously included in the calculation in real time, resulting in significant energy savings.

This shows the many years of experience in the field of energy systems and renewable energies of neoom group gmbh, the company behind the project. With an uncompromising portfolio of energy storage and charging products under the neoom brand in combination with an intuitive energy management software called NTUITY, the neoom group is already showing today what the energy systems of the future must look like. With PHANTOR, the concentrated know-how of the neoom hardware and NTUITY software team of the neoom group is driven to perfection.



Austrian drinking water quality

The drinking water produced by PHANTOR does not only comply with the worldwide WHO guidelines but also with the even higher Austrian standards. The harvested water must pass through a number of filters, including activated carbon filters, UV disinfection, mineralisation and bacterial filters.

In November/December 2019, tests were carried out at an accredited testing laboratory to provide practical proof of the mathematical theoretical model. **It was confirmed that PHANTOR works exactly as calculated and that 10,000 litres of drinking water can be harvested per day.**





IMHOTEP INDUSTRIES

2700 years BC IMHOTEP went down in history. He was a high dignitary, inventor and the first great builder.

Imhotep wanted to build a much higher pyramid as a tomb for King Djoser than his predecessors. The supply of water for his workers was a fundamental prerequisite for this. Therefore he developed a machine, the Shaduf, and brought water from the Nile into the country. Shaduf provided people with drinking water and made it possible to grow vegetables and fruits.

Water meant life. Survival. That has not changed to this day.





CEO & Founder **Walter Kreisel** and CTO & Co-Founder **Manfred Ledermüller** nearing completion of the first PHANTOR.

PHANTOR

The Mobile Water Giant

- ✓ Highest efficiency due to modern measurement and control technology as well as integrated PV system
- ✓ Water output up to 10,000 liters per day
- ✓ Mobile and easy to transport (therefore especially suitable for disaster relief operations)
- ✓ Low maintenance effort
- ✓ Software for continuous self-optimization of the system via machine learning
- ✓ Highly functional and at the same time attractive design
- ✓ Significantly longer service life due to magnetic bearings and robust industrial components
- ✓ Cloud solution with data evaluation and "predictive data" implementation

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