Unionaire G+ ITWG 022 R5 Air Conditioner Specifications, 21500 BTU Cooling Capacity, Technical Manual and Installation Guide

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Focus Keyphrase: Unionaire G+ ITWG 022 R5 Air Conditioner Specifications, 21500 BTU Cooling Capacity, Technical Manual and Installation Guide
SEO Title: Mbsmpro.com, Unionaire, G+ ITWG 022 R5, 21500 BTU/Hr, 6.30 KW, 12.5 Kg, Indoor Unit, 220-240V 50Hz, Split System
Meta Description: Explore the professional technical specifications of the Unionaire G+ ITWG 022 R5 indoor unit. Featuring 21,500 BTU/Hr cooling capacity

and specialized Egyptian engineering for high-ambient climates.
Slug: unionaire-g-plus-itwg-022-r5-technical-specs
Tags: Unionaire, G+ ITWG 022 R5, Air Conditioning, 21500 BTU, HVAC Egypt, Cooling Capacity, Split System, Mbsmgroup, Mbsm.pro, mbsmpro.com, mbsm
Excerpt:
The Unionaire G+ ITWG 022 R5 represents a robust cooling solution engineered for demanding Mediterranean and Middle Eastern climates. Delivering a potent 21,500 BTU/Hr cooling capacity, this Egyptian-manufactured indoor unit balances high-volume airflow with structural durability. Designed for 220-240V/50Hz systems, it features an IPX4 rating and a compact 12.5 kg chassis for versatile wall-mounted installation.

Mbsmpro.com, Unionaire, G+ ITWG 022 R5, 21,500 BTU/Hr, 6.30 KW, High-Efficiency Indoor Unit, Made in Egypt

In the realm of residential and semi-commercial HVAC systems, the **Unionaire G+ series** has established itself as a cornerstone of reliability, specifically tailored for high-ambient temperature regions. The **G+ ITWG 022 R5** indoor unit is a high-capacity component designed to provide rapid thermal exchange while maintaining a compact footprint. This article provides an engineering-grade breakdown of its performance metrics, electrical requirements, and installation nuances.

Technical Analysis of the G+ ITWG 022 R5

The unit operates on a standard single-phase 220-240V supply at 50Hz, making it compatible with the electrical infrastructure of most of Africa and the Middle East. With a cooling output of **21,500 BTU/Hr (equivalent to 6.30 KW)**, this model sits comfortably in the 2.5 HP to 3.0 HP category, capable of cooling large living spaces or office environments efficiently.

Core Specifications Table

Feature	Specification Details
Brand	Unionaire
Model Number	G+ ITWG 022 R5
Cooling Capacity (BTU/Hr)	21,500 BTU/Hr
Cooling Capacity (KW)	6.30 KW
Electrical Power Supply	220-240V / 1 Ph / 50 Hz
Net Weight	12.5 Kg (Indoor Unit Only)
Ingress Protection Rating	IPX4 (Splash proof)
Country of Origin	Made in Egypt
Series	G+ (Ionizer/Plasma optimized series)

Comparative Value Analysis

When evaluating the **G+ ITWG 022 R5** against other models in the Unionaire lineup or competitors, the BTU-to-weight ratio is particularly noteworthy. At only 12.5 kg, the indoor unit is relatively lightweight for its cooling class, reducing stress on wall mounts while housing a large-diameter cross-flow fan for quiet operation.

Performance Comparison: 1.5 HP vs. 2.5 HP vs. 3.0 HP

Model Class	BTU Range	Suitable Area (Avg)	Cooling Speed
Unionaire 1.5 HP	12,000 BTU	12 – 15 m²	Standard
G+ ITWG 022 R5 (2.5 HP)	**21,500 BTU**	**22 – 30 m²**	**High Velocity**
Unionaire 3.0 HP	24,000 – 28,000 BTU	30 – 40 m²	Ultra High

Electrical Schematic and Wiring Overview

The **G+ ITWG 022 R5** follows a standard control logic for split systems. For field technicians, understanding the terminal block configuration is essential for safe integration with the outdoor condenser.

- **Terminal L (Brown):** Main Power Phase.
- **Terminal N (Blue):** Neutral Return.
- **Terminal S (Signal/Communication):** Data line between indoor and outdoor units (vital for compressor cycling).
- **Terminal E (Yellow/Green):** Earth Grounding.

Engineering Note: Ensure that the communication cable is shielded or properly separated from high-voltage lines to prevent electromagnetic interference (EMI), which can lead to sensor errors or erratic fan speeds.

Engineering Advice and Installation Notices

1. **Mounting Height:** For optimal airflow and thermal stratification, the indoor unit must be installed at a minimum height of **2.3 meters** from the floor. This ensures that the cold air plume has sufficient distance to mix with room air before reaching occupants.
2. **IPX4 Compliance:** The IPX4 rating indicates protection against water splashes from any direction. However, this unit is strictly for indoor use. Avoid installation in high-humidity zones like laundry rooms without adequate ventilation.
3. **Condensate Management:** Given the 6.30 KW cooling capacity, significant condensation will occur. Ensure the drain pipe has a minimum downward slope of 1:50 to prevent water backup and microbial growth in the pan.
4. **Air Filter Maintenance:** The G+ series often includes high-density filters. These should be inspected every 15 days in dusty environments to maintain the rated 21,500 BTU/Hr efficiency.

Benefits of the G+ ITWG 022 R5 Model

- **Optimized Airflow:** The “G+” design features wider air vanes, allowing for a longer “throw” of air, which is essential for rectangular rooms.
- **Tropicalized Design:** Specifically engineered to handle the high head pressures associated with Egyptian and Gulf climates.
- **Serviceability:** As a widely distributed model, spare parts such as fan motors and PCB controllers are readily available throughout the region.



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Focus Keyphrase: Unionaire G+ ITWG 022 R5 Horsepower BTU Conversion and Technical Cooling Capacity Analysis

SEO Title: Mbsmpro.com, Unionaire, G+ ITWG 022 R5, 2.5 HP, 21500 BTU/Hr, 6.30 KW, Technical Specifications

Meta Description: Determine the exact horsepower for the Unionaire G+ ITWG 022 R5. With 21,500 BTU/Hr and 6.30 KW cooling capacity, this unit is classified in the 2.5 HP to 3 HP range for professional HVAC applications.
Slug: unionaire-g-plus-itwg-022-r5-hp-rating
Tags: Unionaire, 2.5 HP, 3 HP, 21500 BTU, G+ ITWG 022 R5, HVAC Engineering, Air Conditioner HP, Mbsmgroup, Mbsm.pro, mbsmpro.com, mbsm
Excerpt:
The Unionaire G+ ITWG 022 R5 is a high-performance indoor unit with a cooling capacity of 21,500 BTU/Hr (6.30 KW). Technically classified within the 2.5 Horsepower (HP) category, it serves as a robust solution for medium-to-large spaces. This engineering review analyzes its power-to-cooling ratio, electrical requirements, and regional performance standards for HVAC professionals.

Mbsmpro.com, Unionaire, G+ ITWG 022 R5, 2.5 HP, 21,500 BTU/Hr, Professional Cooling Capacity Analysis

When evaluating the power of an air conditioning unit like the **Unionaire G+ ITWG 022 R5**, technicians and engineers often look for the "Horsepower" (HP) rating to determine suitability for specific room volumes. Based on the technical data plate indicating a cooling capacity of **21,500 BTU/Hr (6.30 KW)**, this unit is officially categorized as a **2.5 HP** model.

The Engineering Logic: BTU to HP Conversion

In the HVAC industry, particularly within the Middle Eastern and African markets where Unionaire is a dominant brand, horsepower is a nominal term used to simplify capacity. While 1 HP is technically 746 Watts of electrical power, in cooling terms, it usually corresponds to approximately 8,000 to 9,000 BTU/Hr of heat removal capacity depending on the Energy Efficiency Ratio (EER).

Horsepower Classification Table

Nominal HP	BTU/Hr Range	KW Cooling Capacity	Model Reference
1.5 HP	12,000 – 13,000	3.51 – 3.81	ITWG 012 / 013
2.25 HP	18,000 – 19,000	5.27 – 5.56	ITWG 018 / 019
2.5 HP	**21,000 – 22,000**	**6.15 – 6.45**	**G+ ITWG 022 R5**
3.0 HP	24,000 – 26,000	7.03 – 7.62	ITWG 024 / 025

Technical Value Comparison: G+ ITWG 022 R5 vs. Standard 3 HP Units

The **G+ ITWG 022 R5** provides a unique middle ground. While many manufacturers jump from 18,000 BTU (2.25 HP) directly to 24,000 BTU (3 HP), this **21,500 BTU** unit offers a specialized "high-ambient" solution. It provides more "muscle"

than a standard 2.25 HP unit without the higher electrical draw of a full 3 HP system.

Metric	Unionaire 2.25 HP	**Unionaire G+ 2.5 HP**	Competitor 3 HP
Cooling (BTU)	18,000	**21,500**	24,000
Cooling (KW)	5.27	**6.30**	7.03
Weight (Indoor)	11.0 Kg	**12.5 Kg**	14.5 Kg
Voltage	220-240V	**220-240V**	220-240V

Electrical and Mechanical Characteristics

The **G+ ITWG 022 R5** is engineered for durability. The “R5” suffix typically indicates a specific revision of the refrigerant cycle or control board logic, optimized for the R410A or R22 gas types (refer to the outdoor unit label for gas type confirmation).

- **Cooling Power:** 6.30 KW allows for rapid temperature pull-down in rooms up to 30 square meters.
- **Mass:** At 12.5 Kg, the internal heat exchanger (evaporator) is dense, featuring high-grade copper tubing and hydrophilic aluminum fins to prevent “ice-up” during long operation cycles.
- **Protection:** The **IPX4** rating ensures that the internal electronics are shielded from moisture ingress, which is critical during the dehumidification process.

Installation Notice and Engineering Tips

1. **Circuit Breaker Selection:** For a 2.5 HP (21,500 BTU) unit, a dedicated **20A or 25A C-Type circuit breaker** is recommended to handle the inductive start-up current of the compressor.
2. **Piping Diameter:** This capacity usually requires a **1/2″ (12.7mm) suction line** and a **1/4″ (6.35mm) liquid line**. Using undersized piping will significantly reduce the 6.30 KW cooling output.
3. **Placement:** Due to the high airflow velocity of a 2.5 HP unit, avoid placing it directly facing seating areas to prevent “cold draft” discomfort.
4. **Vacuuming:** Always perform a deep vacuum (below 500 microns) during installation to ensure the 21,500 BTU efficiency is met and to protect the compressor from non-condensables.

Professional Benefits of the 2.5 HP G+ Series

- **Balanced Load:** Ideal for “L-shaped” living rooms where a 1.5 HP unit is too weak and a 3 HP unit cycles too frequently (short-cycling).
- **Egyptian Engineering:** Built to withstand the T3 climate conditions (up to 52°C ambient temperatures).
- **Quiet Operation:** Despite the high BTU output, the G+ series uses an oversized tangential fan to move air at lower RPMs, reducing decibel levels.
