

Cubigel GLY21RG R134a 5/8 HP Commercial Compressor Specifications and Replacement Guide

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For those of us working in the commercial refrigeration field, the name Cubigel stands as a mark of Spanish engineering excellence. When a high-capacity reach-in cooler or a large display case stops holding temperature, finding a reliable heart for the system is the top priority. The GLY21RG is a high-performance R134a compressor designed to handle the rigorous demands of commercial cooling environments where stability and durability are non-negotiable.

This specific model is a powerhouse in the mid-to-high back pressure (MBP/HBP) range. Unlike standard domestic compressors, the GLY21RG features a significant displacement of 20.72 cc, allowing it to move a substantial volume of refrigerant. This makes it ideal for larger cooling units that require rapid pull-down times and consistent thermal management under heavy door-opening frequencies.

Technical Data and Specifications

Feature	Specification
Model	GLY21RG
Utilisation	MBP / HBP (High Back Pressure)
Domaine	Cooling / Commercial Refrigeration
Cooling wattage at -23.3°C	Approx 510 Watts (LBP context)
Cubic feet (Cooling Capacity)	45 - 60 cu. ft. (Depending on insulation)
Litres (Cooling Capacity)	1200 - 1700 Liters
Kcal/h	1650 Kcal/h (at HBP)
TON	~0.55 Ton
Oil Type and Quantity	POE (Polyolester), 550 ml
Horsepower (HP)	5/8 HP
Refrigerant Type	R134a
Power Supply	200-230V / 60Hz / 1 Phase

Cooling Capacity BTU	6,550 BTU/h (at HBP conditions)
Motor Type	CSR (Capacitor Start - Capacitor Run)
Displacement	20.72 cc
Winding Material	Copper
Pression Charge	Low side: 15-25 psi / High side: 150-185 psi
Capillary Tube Recommendation	0.054" or 0.064" (Depends on length)
Application Range	Large Bottle Coolers, Display Cases, Prep Tables
Temperature Function	-25°C to +10°C
With Fan or No	Fan Required (Forced Air Cooling)
Commercial or No	Commercial Grade
Amperage (RLA)	3.8 A to 4.5 A
LRA (Locked Rotor Amps)	24 A
Type of Relay	Potential Relay
Capacitor Value	Start: 60-80 µF / Run: 15 µF
Country of Origin	Spain (Cubigel/Huayi Group)

Efficiency Metrics (COP) - Performance Analysis

Efficiency in commercial units is measured by the Coefficient of Performance (COP). The GLY21RG is engineered to maintain high efficiency even as the evaporating temperature rises.

Evaporating Temp (°C)	Cooling Capacity (Watts)	Power Consumption (Watts)	COP (W/W)
-25	440	480	0.92
-20	580	520	1.12
-15	750	565	1.33
-10	950	610	1.56
-5	1180	660	1.79
0	1450	715	2.03
5	1760	775	2.27
7.2	1920	805	2.38

Comparison with Industry Standards

When comparing the Cubigel GLY21RG to competitors like Embraco or Danfoss, the primary advantage lies in its displacement-to-size ratio. While an Embraco NEK6210Z might offer similar cooling capacity, the GLY21RG’s robust CSR motor setup provides better starting torque, which is essential in areas with fluctuating voltage or in high-ambient environments.

Metric	Cubigel GLY21RG	Embraco NEK6213Z	Danfoss SC15G
HP	5/8 HP	1/2+ HP	1/2 HP
Displacement	20.72 cc	12.11 cc	15.28 cc
Start Torque	High (CSR)	High (CSIR/CSR)	High (HST)

Field Expert Advice and Technical Notice

- 1. Proper Cooling:** This is a high-displacement compressor. It generates significant heat during operation. Never operate this unit without a dedicated condenser fan motor. Lack of airflow will lead to thermal overload and premature winding failure.
 - 2. Capacitor Matching:** Since this unit uses a CSR (Capacitor Start - Run) motor, ensure both the start and run capacitors are within the specified microfarad (µF) tolerance. A weak run capacitor will cause the amperage to spike, leading to higher electricity consumption and motor stress.
 - 3. Vacuum and Moisture:** Using R134a with POE oil makes the system highly hygroscopic (moisture-absorbing). Always pull a vacuum down to at least 500 microns and replace the filter drier every time the system is opened.
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Compressor Replacements

Top 5 Replacements (Same Refrigerant - R134a):

1. **Embraco:** NEK6213Z (High Torque)
2. **Danfoss/Secop:** SC18G / SC21G
3. **Tecumseh:** AE4460Y
4. **Bristol:** H23B15QABH
5. **Aspera:** NE6213Z

Top 5 Replacements (Different Refrigerant - R404A/R290):

1. **Embraco:** NEK6213GK (R404A version - requires TXV adjustment)
 2. **Cubigel:** NUT21LR (R290 - High efficiency alternative)
 3. **Danfoss:** SC15MLX (R404A)
 4. **Tecumseh:** AE4460Z (R404A)
 5. **Secop:** DLE10CN (R290 - Eco-friendly replacement)
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SEO Details

Focus Keyphrase:

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SEO Title:

Mbsmpro.com | Cubigel GLY21RG Compressor | 5/8 HP | R134a MBP/HBP

Meta Description:

Detailed technical guide for the Cubigel GLY21RG compressor. Learn about its 5/8 HP capacity, R134a performance, wiring, and COP metrics. Perfect for commercial refrigeration repairs and replacements.

Slug:

cubigel-gly21rg-compressor-5-8-hp-r134a-specs

Tags:

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Excerpt:

The Cubigel GLY21RG is a robust 5/8 HP commercial compressor designed for R134a systems. Operating in the MBP/HBP range with a 20.72 cc displacement, it offers high cooling capacity for display cases and reach-in coolers. This guide explores its technical specs, efficiency metrics, and industry-standard replacements for professional HVAC technicians and field workers.

Q&A Space

Q: Can I use the GLY21RG in a domestic freezer?

A: No, it is not recommended. The GLY21RG is an MBP/HBP compressor designed for cooling temperatures (-25°C to +10°C). Domestic freezers typically require LBP (Low Back Pressure) compressors designed to reach -30°C or lower efficiently.

Q: What happens if I use the wrong oil?

A: R134a compressors like the GLY21RG must use POE (Polyolester) oil. Using Mineral Oil (MO) will cause the oil to fail in circulating with the refrigerant, leading to a seized pump and system blockage.



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