

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

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February 15, 2026



15, Feb 2026

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Mbsmpro.com, Compressor, GLY21RG, 5/8 hp, Cubigel, Cooling, R134a, 640 W, 3.8 A, 1Ph 200-230V 60Hz, HBP-MBP, CSR, -25°C to +10°C, Commercial Refrigeration

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)
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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.

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)

SEO Details

Focus Keyphrase:

[Cubigel GLY21RG R134a 5/8 HP](#) Commercial [Compressor](#) Specifications and Replacement Guide

SEO Title:

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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:

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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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