

Embraco NEK6187Z compressor R134a 1/3 HP HBP commercial refrigeration replacement specifications technical data

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Embraco NEK6187Z Compressor | 1/3 HP | R134a | HBP | 220-240V 50Hz | POE Oil 380cc | Commercial Refrigeration

When you're dealing with [commercial refrigeration](#) equipment, finding the right compressor can make or break your system. The [Embraco NEK6187Z](#) is one of those workhorse compressors you'll find in plenty of beverage coolers, ice machines, and commercial display cases. Let's dive into what makes this compressor tick and everything you need to know about it.

Technical Specifications Overview

Specification	Details
Model	NEK6187Z
Brand	Embraco/Aspera
Utilisation (MBP/HBP/LBP)	HBP (High Back Pressure) / MBP
Domaine (Freezing/Cooling)	Cooling (Commercial Refrigeration)
Cooling Wattage at -23°C	Approximately 480W
Cubic Feet Capacity	8-12 cubic feet
Litres Capacity	200-350 litres
Kcal/h	774 kcal/h (at +5°C evap)
TON	0.26 TR (approximate)
Oil Type and Quantity	POE Oil 380cc (350-380ml)
Horsepower (HP)	1/3 HP
Refrigerant Type	R134a
Power Supply	220-240V ~ 50Hz, 1 Phase
Cooling Capacity BTU	3,340 BTU/h (at +5°C)
Motor Type	CSIR (Capacitor Start Inductor Run)
Displacement	10.0 cm ³ (9.99 cc)
Winding Material	Copper
Pressure Charge	Delivered with dry air (~1 bar) or light vacuum
Capillary	Capillary tube system
Refrigerator Models	Whirlpool K40 ice machines, commercial display cases, beverage coolers

Specification	Details
Temperature Function	-15°C to +10°C evaporating range
With Fan or No	Yes (fan cooling recommended – 520 m ³ /h)
Commercial or No	Yes – Commercial grade
Amperage in Function	Operating: ~1.3A, LRA: 16.1A
LRA (Locked Rotor Amps)	16.1A
Type of Relay	CSIR start relay required
Capacitor	Yes – Start capacitor required (starting device mandatory)
Country of Origin	Slovakia
Exporting Countries	Throughout Europe, Middle East, Asia-Pacific

Cooling Capacity at Different Temperatures

The NEK6187Z performs differently depending on your evaporating temperature. Here's what you can expect

gastroparts.com:

Evaporating Temperature	Cooling Capacity
-10°C	482 W
-5°C	624 W
0°C	791 W
+5°C	983 W
+10°C	1,201 W

Efficiency Metrics (COP)

Understanding the Coefficient of Performance helps you gauge efficiency at

different operating conditions:

Evaporating Temp (°C)	-30	-25	-23.3	-20	-15	-10	0	4	10
Cooling Capacity (Watts)	280	380	420	480	580	688	900	1020	1200
Power Consumption (Watts)	320	340	350	365	390	420	480	520	580
COP	0.88	1.12	1.20	1.32	1.49	1.64	1.88	1.96	2.07

Note: COP values calculated based on EN 12900 test conditions with condensing temperature at +54.4°C for HBP applications

www.hutes-klima-technika.hu

Application Details

This compressor is built for **high back pressure (HBP)** applications, which means it's designed for warmer refrigeration tasks like:

- Beverage coolers
- Display cases
- Ice machines
- Wine coolers
- Commercial refrigerators

The unit features **high starting torque (HST)**, which is crucial for commercial applications where you might have hard starting conditions

www.skh-kaeltetechnik.de. The [CSIR motor](#) design provides reliable performance, though it does require a starting device – the label clearly states “NO START WITHOUT STARTING DEVICE” for a reason

crltd.co.uk.

Physical Characteristics

- **Connection Type:** Tube-to-tube connections
- **Suction Line:** 1/4" diameter
- **Height:** Approximately 200mm
- **Weight:** Around 11-12 kg

- **Terminal Type:** European standard terminal board

Oil Information

The compressor uses **POE (Polyolester) oil** with a viscosity grade of POE 22. The oil charge is 380cc (though some sources indicate 350ml is acceptable)

www.prokes-auto.com. [POE oil](#) is hygroscopic, meaning it absorbs moisture from the air, so you need to work quickly during installation and keep the system sealed.

Electrical Specifications

- **Voltage Range:** 220-240V, 50Hz (single phase)
- **Motor Protection:** Thermally protected (built-in overload)
- **Starting Current:** 16.1A maximum
- **Running Current:** Approximately 1.0-1.3A under normal conditions
- **Start Device:** External CSIR start relay and capacitor required

Replacement Compressors

Same Refrigerant (R134a) – Direct Replacements

1. **Embraco** [NEU6210Z](#) – 1/3 HP, R134a, HBP, similar displacement
2. **Embraco** [NE6187Z](#) – Previous generation, identical specs
3. **Secop/Danfoss SC12G** – 1/3 HP, 12.87cc, R134a, HBP/MBP
www.ebay.co.uk
4. **Secop/Danfoss TL3G** – Universal compressor, 1/3 HP equivalent, R134a
www.piecesfrigo.com
5. **GMCC FH2711** – 10.8cc, R134a, HBP application manuals.plus

Alternative Refrigerant Replacements

If you're considering converting to a different refrigerant:

1. **Embraco** [NEU6212Z \(R290\)](#) – Propane, similar capacity, requires system modification
2. **Embraco NLE11MN (R290)** – 1/2 HP equivalent, natural refrigerant
whufc.pl
3. **Secop SC15G (R600a)** – Isobutane, 1/3 HP class, requires different oil and charge
allairaircon.co.za
4. **GMCC R600a 10cc series** – Direct displacement match, different refrigerant
refricompressor.com

5. **Embraco FFI10HBX (R134a)** – Alternative R134a option, 1/3 HP

www.ebay.com

Important: Switching refrigerants isn't a simple swap. You'll need to change the oil type, adjust the charge, and possibly modify the capillary tube or expansion device. R290 and R600a are flammable refrigerants requiring special handling and certification.

Common Applications

You'll find the NEK6187Z working in:

- **Whirlpool K40 ice machines** – This is a very common application
www.ascateringsupplies.com
- Commercial beverage dispensers
- Glass door display refrigerators
- Undercounter commercial fridges
- Hospitality refrigeration equipment
- Supermarket display cases (medium temperature)

Installation Tips

1. **Always use a starting device** – The compressor won't start without the proper CSIR start relay and capacitor
2. **Fan cooling is recommended** – Use a fan with at least 520 m³/h airflow for optimal performance www.kaeltetechnikshop.com
3. **Check oil level** – [POE oil](#) absorbs moisture quickly; minimize exposure time
4. **Evacuation** – Pull a good vacuum (500 microns or better) before charging
5. **Charge carefully** – Follow the equipment manufacturer's specifications

Troubleshooting Common Issues

Compressor won't start:

- Check start relay and capacitor (most common issue)
- Verify voltage at terminals
- Check thermal overload

High amp draw:

- Check for restricted capillary tube
- Verify proper refrigerant charge

- Inspect condenser for dirt/restriction

Low cooling capacity:

- Check for refrigerant leaks
- Inspect evaporator fan operation
- Verify proper door seals on equipment

Where to Buy

These compressors are available through:

- HVAC/R wholesale distributors
- Online refrigeration parts suppliers
- Commercial equipment service companies
- Direct from Embraco authorized distributors

Pricing typically ranges from \$150-250 USD depending on your location and supplier

hvacspareparts.com.

Warranty and Support

Embraco compressors typically come with a 1-year warranty from the date of manufacture. Always keep your proof of purchase and verify the manufacturing date code before installation.

Focus Keyphrase

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Meta Description

Complete technical guide for [Embraco NEK6187Z](#) compressor: 1/3 HP, R134a, HBP, 220-240V 50Hz. Cooling capacity, COP values, replacement options, installation tips. [Commercial refrigeration](#) specs.

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Excerpt (First 55 words)

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