CAPABILITY OVERVIEW

Industrial Refrigeration Systems

Brine Chillers · Direct Cooling · Condensing Units · Compressor Packages

Sincerity as Foundation, Integrity as Principal

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1. Overview

Suzhou Lmart Energy Equipment Co., Ltd. (Lmart) designs and manufactures turnkey industrial refrigeration systems for the petrochemical, chemical, and oil & gas industries. Our integrated capability covers process design, equipment fabrication, skid assembly, factory acceptance testing (FAT), and on-site commissioning support.

200+	50+	200–3,500	30+
Units Delivered	Petrochemical Plants Served	Cooling Capacity (kW)	Units for Wanhua Chemical

System Types

- **Brine Chiller Packages** — Indirect cooling via calcium chloride or ethylene glycol brine loops for precise temperature control in polymer production (PP, PE, PVC, MDI, styrene, acrylonitrile).
- **Direct Cooling Systems** — Refrigerant directly cools process gas in shell & tube heat exchangers; higher efficiency for large-scale petrochemical plants.
- **Condensing Units** — Ammonia and propylene condensing packages for rectisol, BOG recovery, and chemical process cooling.

Refrigerants

Propylene (R1270), Ammonia (R717), R134a, R507A, Propane (R290). System design optimized for each refrigerant's thermodynamic properties and safety requirements.

2. Applications

Petrochemical

- Polypropylene (PP) production
- Polyethylene (PE / LDPE / HDPE)
- Polyvinyl Chloride (PVC / vinyl chloride)
- MDI / TDI / XDI isocyanate production
- Styrene & acrylonitrile plants
- Polycarbonate (PC) production
- POE base oil production

Chemical & Oil & Gas

- Rectisol / ammonia synthesis
- Ethylene tank farm cooling
- CCR catalyst regeneration cooling
- PDH (propane dehydrogenation)
- Vinyl acetate (VAC) production
- Chloromethane gas cooling
- Offshore platform refrigeration

3. Scope of Supply

Lmart delivers fully integrated refrigeration packages on a turnkey basis:

Phase	Scope
Process Design	Thermal calculations, P&ID development, refrigerant cycle optimization
Compressor Selection	Screw & reciprocating compressors — Bitzer, Hanbell, Fusheng, Mycom
Heat Exchanger Sizing	Shell & tube evaporators, condensers, sub-coolers, oil coolers (in-house design & fabrication)
Piping & Valves	Refrigerant piping, process piping, safety valves, control valves
Controls & Instrumentation	PLC/DCS-ready control panels, VFD, safety interlocks, remote monitoring
Skid Frame	Structural steel skid, vibration isolation, lifting lugs, marine lashing (if required)
Testing	Hydrostatic test, leak test, FAT with performance verification
Commissioning	On-site installation supervision, startup assistance, operator training

4. Design Codes & Certifications

ASME
U & U2 Stamps

GB
A2 Pressure Vessel License

ISO 9001
Quality Management

CERTIFICATION DETAILS

Chinese Manufacturing License: A2 (pressure vessels, Class I/II/III). ASME U & U2 stamps for international projects. All heat exchangers designed per GB151/TEMA with in-house HTRI thermal rating.

5. Key Client References

Client	Project	System Type	Units
Wanhua Chemical	MDI, PC, LDPE/EVA, BPA, XDI, HDI, MQ Silicone, VC, R&D	Brine chiller & direct cooling	30+
Zhejiang Petrochemical	PP, Styrene, VAC, EC, Phase III	Brine chiller & direct cooling	15+
Sinopec Zhenhai	PDH, Acrylonitrile, Solvent/BOG	Brine chiller & refrigeration	10+
Satellite Petrochemical	PSA, Exhaust Gas, Ethylene	Refrigeration systems	8+
Ningxia Baofeng	HDPE, PP	Brine chiller packages	6+
Shandong Yulong	CCR, Acrylonitrile	Brine chiller systems	4+
Sinochem Quanzhou	Large-scale refinery	Refrigeration package	4+
CNOOC	Offshore platform	Refrigeration skids	2+

KEY DIFFERENTIATOR

Vertically integrated: process design + heat exchanger fabrication + skid assembly under one roof — shorter lead times, single-source responsibility, and proven repeat-order track record with China's largest petrochemical producers.

6. Contact

SALES INQUIRY

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