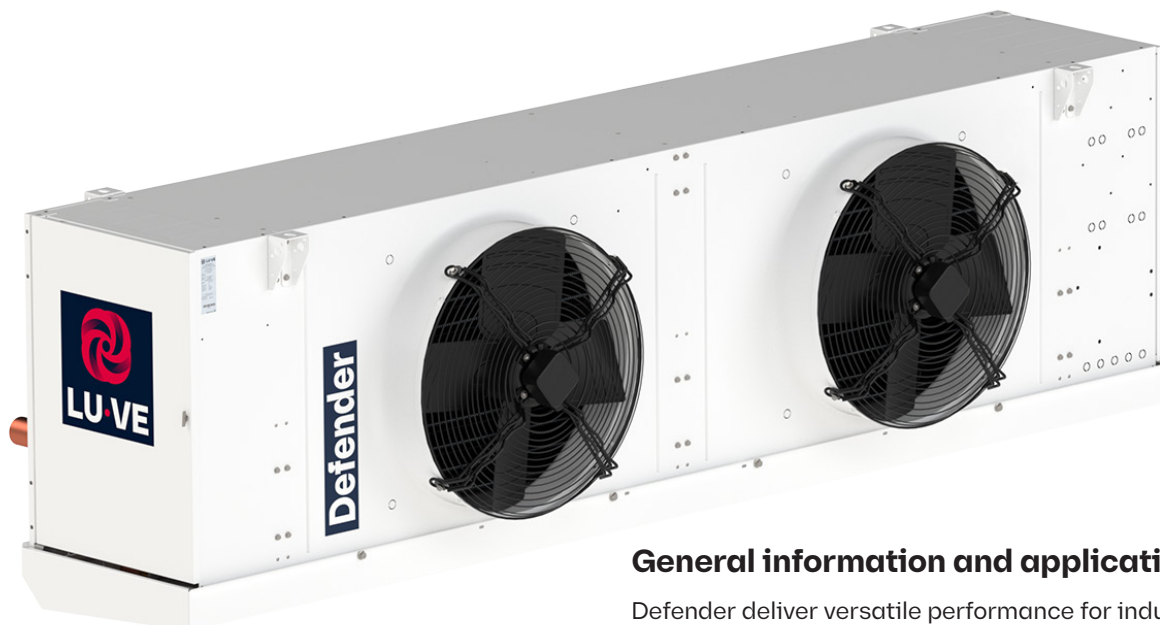


Defender CS | LS | ECS

Hi-tech cubic industrial Air coolers



Top Advantages

- Reliable performance - Eurovent certified, independently tested
- Superior energy efficiency
- Full refrigerant compatibility
- TURBOCOIL heat exchanger: unique to LU·VE, ensures maximum performance and minimized defrost frequency
- Easy-access, easy-clean – Hinged side panels and drip tray



Scan for more
information

General information and application

Defender deliver versatile performance for industrial cold room and data center cooling applications. Designed for multi-refrigerant flexibility, they meet demanding needs of low-moisture storage (CS), high-humidity/freezing (LS), and CO₂-optimized cooling (ECS) with superior efficiency and durability. The Defender platform offers a wide selection of cooler configurations and an extensive options list, empowering you to choose the ideal model tailored precisely to your needs.

Refrigerants	HFC/HFO, NH ₃ , CO ₂ , Brine
Capacities (SC2 with R404)	6.7 up to 261.7 kW
Air quantity	3,900 up to 94,000 m ³ /h

Standard configuration

- Modular industrial air cooler in draw-through design.
- Available for ceiling or floor installation.
- CS (compact surface) models feature internally grooved tubes and staggered rows, making them suitable for both positive and negative temperature applications.
- LS (large surface) models feature internally grooved tubes and in-line rows, have a high ratio of secondary fin surface to primary tube surface.
- ECS models feature internally grooved tube (for models with 60 bar design pressure) and staggered rows, with a dedicated design for CO₂.
- Copper tubes with TURBOFIN aluminium fins. Multiple fin spacing options (4.5 up to 12 mm). Stainless steel tubes for ammonia.
- EC or AC fan motors from 450 to 950 mm diameter, 1 to 4 fans per unit.
- Corrosion-resistant galvanized steel casing, epoxy-coated RAL 9003 (stainless options available).
- Designed for high energy efficiency and low defrost frequency.

Options

- Shut up sock
- Textile tube adapter
- Air streamer
- Insulated rear air director cover
- Unit coolers switches
- Unit coolers wiring
- Insulated drain tray
- Stainless steel casing and coil frame
- Hinged fan shroud - not available for Ø 450 mm
- Mounting feet - for Ø 500, 630, 710, 800, 910, 950 mm
- Inclined motor
- Motorized rear shutter
- Electric defrost (E)
- Fan shroud heater
- Hot-gas defrost in coil+electric defrost in drain tray (G)
- Hot-gas defrost both in coil and drain tray (GB)
- Water defrost (SB)
- Hot glycol defrost both in coil and drain tray (HG)
- Hot glycol defrost in coil+electric defrost in drain tray (HE)
- Hot glycol defrost in drain tray only (HB)
- Hot glycol defrost in coil only (HC)
- Blow-trough fan

Selection

Selection and pricing is to be performed with our online air heat exchanger selection software Plair. Selection output includes all relevant technical data and dimensional drawings.

Certifications

The LUVE quality system is in accordance with ISO 9001. All products are manufactured according to PED regulations. LUVE participates in the ECP program for HE. Check ongoing validity of certificate: www.eurovent-certification.com



Ammonia and Brine refrigerant is not covered by Eurovent certification

31800544EN-00 | LUVE reserves the right to change specifications without prior notification

Design pressure

Model	Refrigerant	Max working pressure (bar)
CSH, LSH	HFC	24*
CSA, LSA	NH ₃	24
CSH CO ₂ , LSH CO ₂	CO ₂	45-60
CSW, LSW	Brine	24*
ECS	CO ₂	60-85

*19 bar with ø 108 mm headers

Each heat exchanger is leak tested with dry air and finally supplied with a dry air pre-charge.

Fitted with Schröder valve on the suction connection for testing purposes (only for HFC).

Threaded connections for brine units.

Code description

CS	63	H	*	2214	E	6	*
1	2	3	4	5	6	7	8

- 1 Industrial air coolers for cold room (CS=Compact Surface, LS=Large Surface)
- 2 Fan diameter (45=450, 50=500, 62=630, 71=710, 80=800, 90=910, 95=950 mm)
- 3 Technology (H=Hitec® for HFC and CO₂, blank=for ammonia and brine)
- 4 Refrigerant system (blank=HFC, A=ammonia, W=brine, in case of CO₂ see pos. 8)
- 5 Model type
- 6 Defrost system (N=air defrost, E=electric defrost, G=hot-gas defrost in coil + electric defrost in drain tray, GB=hot-gas defrost both in coil drain tray)
- 7 Fin spacing (4=4.5, 6=6.0, 7=7.5, 10=10.0, 12=12.0 mm)
- 8 Application (DX CO₂=direct expansion for CO₂, PB=pumped bottom feed for ammonia, PT=pumped top feed for ammonia)

ECS	63	2214	E	6
1	2	3	4	5

- 1 Industrial air coolers for CO₂ applications
- 2 Fan diameter (45=450, 50=500, 62=630, 71=710, 80=800)
- 3 Model type
- 4 Defrost system (N=air defrost, E=electric defrost, G=hot-gas defrost in coil + electric defrost in drain tray, GB=hot-gas defrost both in coil and drain tray)
- 5 Fin spacing (4=4.5, 6=6.0, 7=7.5, 10=10.0, 12=12.0 mm)