

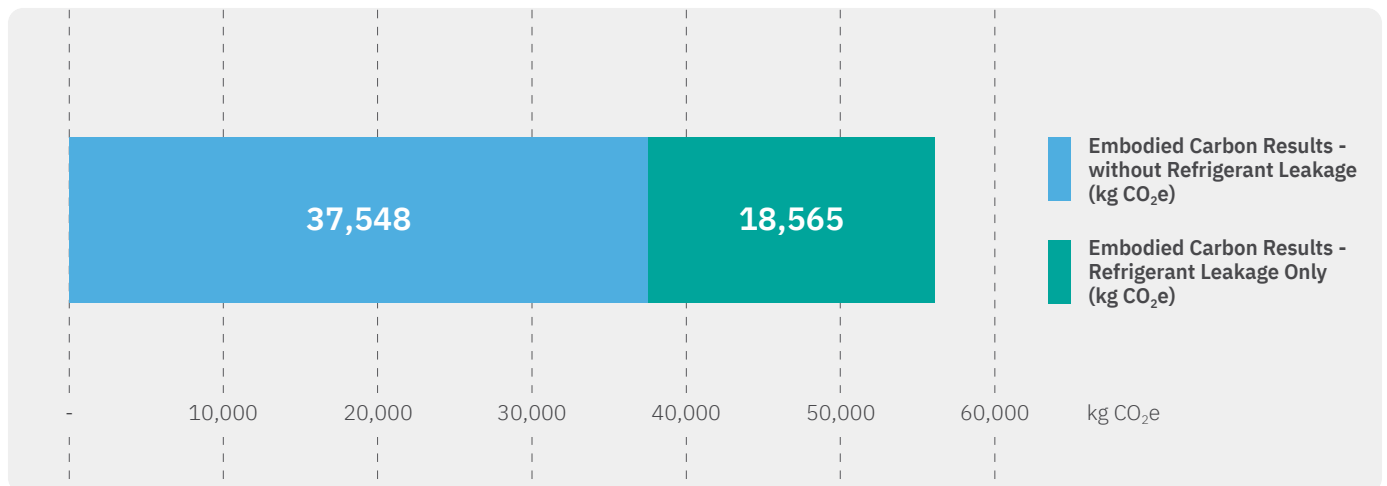
MECH-iF-G05 0411

CIBSE TM65 Embodied Carbon Mid-level Calculation

Assesment Date:	23rd May 2024
Assessor / Organisation:	Mitsubishi Electric UK
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Embodied Carbon with 'Mid-level TM65 Calculation' Method (kg CO₂e) Total:

56,113



MECH-iF-G05 0411 - Product Information

Type of product	Chiller
Capacity of equipment (kW)	414.4
Product weight (kg)	4,100
Material breakdown for at least 95% of the product weight? (Y/N)	Y
Service life of the product (years)	17.5
Type of refrigerant	R513A
Refrigerant GWP	573
Energy consumption of the factory per unit of product (kWh)	3,112
Location of manufacture	Europe
Product Complexity	Category 3: High





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CIBSE TM65 Embodied Carbon Mid-level Calculation

Embodied Carbon Results Breakdown (kg CO₂e)

A1: Material extraction	20,156
A2: Transport	95
A3: Manufacturing	4,232
A4: Transport to Site	808
B1: Use	18,050
B3: Repair	2,626
C1: Deconstruction	516
C2: Transport	53
C3: Waste Processing	902
C4: Disposal	11

Embodied Carbon Results - without Refrigerant Leakage (kg CO₂e)

A1-C4 (excluding B1,C1)	28,883
A1-C4 with Buffer Factor (excluding B1, C1)	37,548

Embodied Carbon Result - Refrigerant Leakage Only (kg CO₂e)

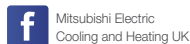
B1 (Refrigerant leakage during use) + C1 (Refrigerant leakage end of life)	18,565
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Assumptions

A1: Material carbon coefficient source	TM65 Table 2.1 & The ICE Database
B1: Refrigerant annual leakage rate (%)	2 (TM65 Assumption)
C1: Refrigerant end of life recovery rate (%)	99 (TM65 Assumption)
B3: Materials replaced as part of repair (%)	10 (TM65 Assumption)
C4: Percentage of product going to landfill (%)	30 (TM65 Assumption)



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Note: The fuse rating is for guidance only and please refer to the relevant databook for detailed specification. It is the responsibility of a qualified electrician/electrical engineer to select the correct cable size and fuse rating based on current regulation and site specific conditions. Mitsubishi Electric's air conditioning equipment and heat pump systems contain a fluorinated greenhouse gas, R410A (GWP:2088), R290 (GWP:3), R32 (GWP:675), R407C (GWP:1774), R134a (GWP:1430), R513A (GWP:631), R454B (GWP:466), R454C (GWP:148), R1234ze (GWP:7) or R1234yf (GWP:4). *These GWP values are based on Regulation (EU) No 517/2014 from IPCC 4th edition. In case of Regulation (EU) No.626/2011 from IPCC 3rd edition, these are as follows. R410A (GWP:1975), R32 (GWP:550), R407C (GWP:1650) or R134a (GWP:1300).

Effective as of May 2024

