

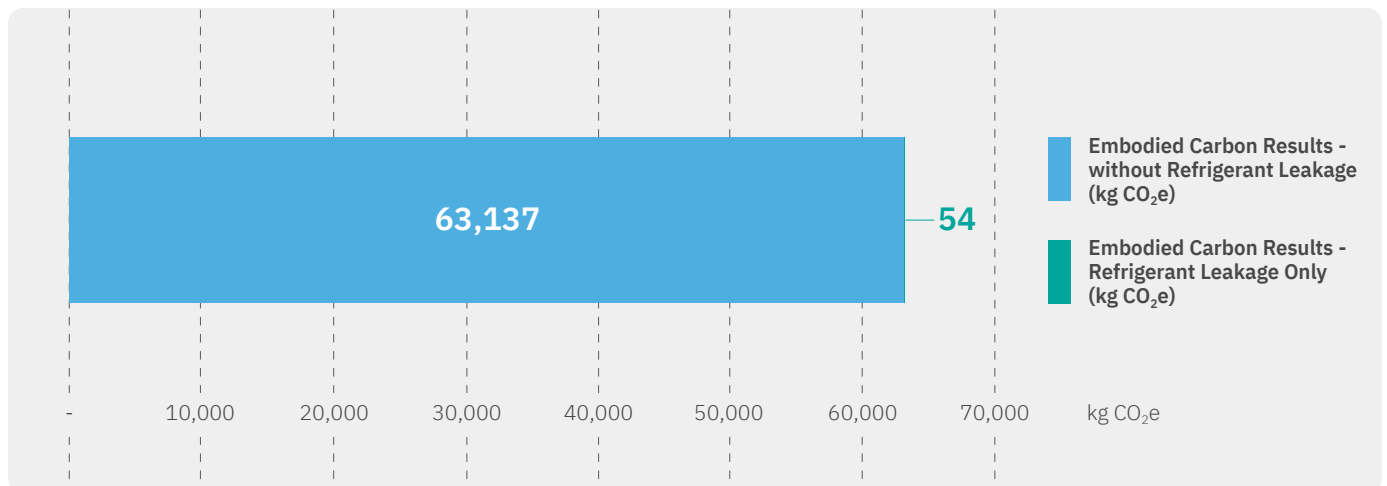
# MECH-iF-G04 0702

## CIBSE TM65 Embodied Carbon Mid-level Calculation

<b>Assesment Date:</b>	23rd May 2024
<b>Assessor / Organisation:</b>	Mitsubishi Electric UK
<b>Contact:</b>	embodied.carbon@meuk.mee.com

Embodied Carbon with 'Mid-level TM65 Calculation' Method (kg CO<sub>2</sub>e) Total:

**63,191**



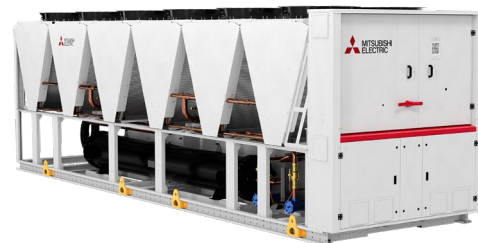
### MECH-iF-G04 0702 - Product Information

Type of product	Chiller
Capacity of equipment (kW)	701.9
Product weight (kg)	7,310
Material breakdown for at least 95% of the product weight? (Y/N)	Y
Service life of the product (years)	17.5
Type of refrigerant	HFO1234ze
Refrigerant GWP	1
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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### Embodied Carbon Results Breakdown (kg CO<sub>2</sub>e)

A1: Material extraction	37,309
A2: Transport	169
A3: Manufacturing	4,232
A4: Transport to Site	1,425
B1: Use	53
B3: Repair	4,415
C1: Deconstruction	2
C2: Transport	95
C3: Waste Processing	902
C4: Disposal	19

### Embodied Carbon Results - without Refrigerant Leakage (kg CO<sub>2</sub>e)

A1-C4 (excluding B1,C1)	48,567
A1-C4 with Buffer Factor (excluding B1, C1)	63,137

### Embodied Carbon Result - Refrigerant Leakage Only (kg CO<sub>2</sub>e)

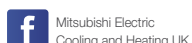
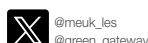
B1 (Refrigerant leakage during use) + C1 (Refrigerant leakage end of life)	54
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### Assumptions

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

