

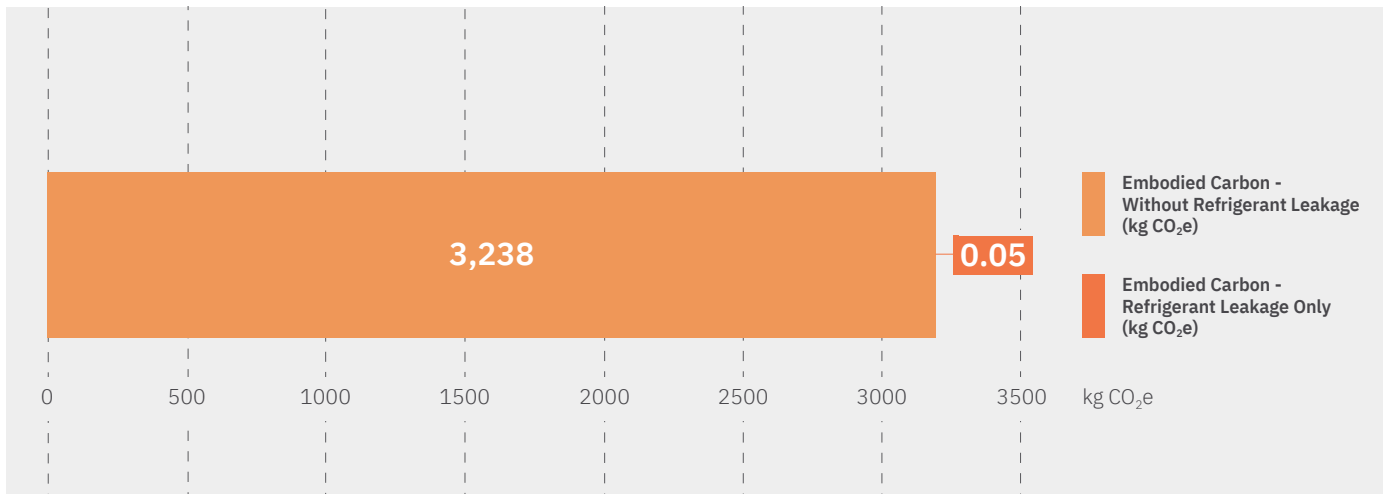
CAHV-Z450YA-HPB

CIBSE TM65 Embodied Carbon Mid-level Calculation

Assesment Date:	15th January 2025
Assessor / Organisation:	Mitsubishi Electric
Contact:	embodied.carbon@meuk.mee.com

**Embodied Carbon with 'Mid-level
TM65 Calculation' Method Total:**

3,238 (kg CO₂e)



CAHV-Z450YA-HPB - Product Information

Type of product	A2W Heat Pump
Capacity of equipment (kW)*	40.00
Product weight (kg)	363.50
Material breakdown for at least 95% of the product weight? (Y/N)	Y
Service life of the product (years)	25
Type of refrigerant	R290
Refrigerant GWP**	0.02
Energy consumption of the factory per unit of product (kWh)	2.60
Location of manufacture	Japan
Product Complexity	Category 3: High



*Nominal heating capacity conditions as per data book. **IPCC 6th edition.

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Embodied Carbon Results Breakdown (kg CO₂e)

A1: Material extraction	1,881
A2: Transport	287
A3: Manufacturing	4
A4: Transport to Site	85
B1: Use	0.05
B3: Repair	226
C1: Deconstruction	0.001
C2: Transport	5
C3: Waste Processing	1
C4: Disposal	1

Embodied Carbon Results - without Refrigerant Leakage (kg CO₂e)

A1-C4 (excluding B1,C1)	2,491
A1-C4 with Buffer Factor (excluding B1, C1)	3,238

Embodied Carbon Result - Refrigerant Leakage Only (kg CO₂e)

B1 (Refrigerant leakage during use) + C1 (Refrigerant leakage end of life)	0.05
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TM65 Assumptions

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



Telephone: 01707 282880
 email: embodied.carbon@meuk.mee.com
les.mitsubishielectric.co.uk



UNITED KINGDOM Mitsubishi Electric Europe Living Environment Systems Division, Travellers Lane, Hatfield, Hertfordshire, AL10 8XB, England. Telephone: 01707 282880
 IRELAND Mitsubishi Electric Europe, Plunkett House, Grange Castle Business Park, Nangor Road, Dublin 22, Ireland. Telephone: (00353) 1 4198800 Email: sales.info@meir.mee.com Web: les.mitsubishielectric.ie

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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), R32 (GWP:675), R407C (GWP:1774), R134a (GWP:1430), R513A (GWP:631), R454B (GWP:466), R515B (GWP:292), 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. Mitsubishi Electric's air conditioning equipment and heat pump systems contain a hydrocarbon, R290 (GWP:0.02). *These GWP values are based on IPCC 6th edition.

Effective as of April 2026

