

# TECHNICAL PRODUCT SUBMITTAL

## AMICUS LAHP-1654HTNN ULTRA LOW NOISE AIR SOURCE HEAT PUMP

| Data                                                  | Unit              | LAHP-1654HTNN |
|-------------------------------------------------------|-------------------|---------------|
| <b>Heating Data</b>                                   |                   |               |
| Heating Capacity (EN14511) <sup>1</sup>               | kW                | 165           |
| Total Power input (EN14511) <sup>1</sup>              | kW                | 36.6          |
| COP (EN14511) <sup>1</sup>                            | W/W               | 4.51          |
| Nominal flow rate                                     | m <sup>3</sup> /h | 28.51         |
| Pressure drop across the heat pump                    | kPa               | 32.2          |
| Design air flow rate                                  | m <sup>3</sup> /h | 41085         |
| <b>EcoDesign data <sup>2</sup></b>                    |                   |               |
| Energy Label Rating Low temperature                   |                   | A++           |
| SCOP Low Temperature                                  |                   | 4.15          |
| Seasonal Efficiency Low temperature                   | %                 | 163           |
| Energy Label Rating High temperature                  |                   | A++           |
| SCOP High Temperature                                 |                   | 3.4           |
| Seasonal Efficiency High temperature                  | %                 | 133           |
| <b>Cooling Data (RV units only)</b>                   |                   |               |
| Cooling Capacity (EN14511) <sup>3</sup>               | kW                | 138           |
| Total Power input (EN14511) <sup>3</sup>              | kW                | 50.7          |
| EER (EN14511) <sup>3</sup>                            | W/W               | 2.72          |
| Nominal flow rate                                     | m <sup>3</sup> /h | 23.83         |
| Pressure drop across the heat pump                    | kPa               | 26.8          |
| Design air flow rate                                  | m <sup>3</sup> /h | 44055         |
| <b>General data</b>                                   |                   |               |
| Refrigerant                                           |                   | R410A         |
| Compressor Type                                       |                   | E.V.I. Scroll |
| Number of Compressors                                 |                   | 4             |
| Number of Circuits                                    |                   | 2             |
| Capacity steps                                        |                   | 4             |
| Minimum capacity step                                 | %                 | 25            |
| Sound power level                                     | dB(A)             | 74            |
| Sound pressure level (10m)                            | dB(A)             | 42            |
| Minimum water content in the user circuit             | litre             | 820           |
| <b>Electrical Data</b>                                |                   |               |
| Power supply                                          | V/Ph/Hz           | 400/3+N/50    |
| Maximum input power                                   | kW                | 76.4          |
| Maximum input current standard unit                   | A (per phase)     | 136           |
| Peak input current standard unit                      | A (per phase)     | 277           |
| Peak input current unit with soft start option fitted | A (per phase)     | 208           |
| Fuse rating (delayed)                                 | A                 | 200           |
| <b>Fans</b>                                           |                   |               |
| Type                                                  |                   | Axial EC      |
| Number of fans (standard unit)                        | n°                | 4             |
| <b>Dimensions</b>                                     |                   |               |
| Height                                                | mm                | 2355          |
| Length                                                | mm                | 4205          |
| Width                                                 | mm                | 2190          |
| Shipping Weight                                       | Kg                | 2800          |

<sup>1</sup>=external air+7C 30/35 flow

<sup>2</sup>=average conditions according to EU/811/2013

<sup>3</sup>=Cooling external air +35C 12/7 flow

# TECHNICAL PRODUCT SUBMITTAL

## AMICUS LAHP-1654HTNN ULTRA LOW NOISE AIR SOURCE HEAT PUMP

| LAHP-1654NN                |     |                  | Heating OUT |      |      |      |      |      |      | Max Outlet |
|----------------------------|-----|------------------|-------------|------|------|------|------|------|------|------------|
| Water Delivery Temperature |     |                  | 35C         | 40C  | 45C  | 50C  | 55C  | 60C  | *    |            |
| Source air temperature     | -10 | Heat Output (KW) | 97          | 98.2 | 99.3 | 101  | 104  | n/a  | n/a  | 59         |
|                            |     | Efficiency COP   | 2.61        | 2.42 | 2.24 | 2.06 | 1.90 | n/a  | n/a  |            |
|                            | -8  | Heat Output (KW) | 102         | 103  | 104  | 106  | 108  | 112  | 112  | 61         |
|                            |     | Efficiency COP   | 2.72        | 2.52 | 2.33 | 2.15 | 1.97 | 1.83 | 1.79 |            |
|                            | -6  | Heat Output (KW) | 108         | 109  | 109  | 111  | 113  | 116  | 119  | 63         |
|                            |     | Efficiency COP   | 2.86        | 2.65 | 2.42 | 2.23 | 2.04 | 1.88 | 1.81 |            |
|                            | -4  | Heat Output (KW) | 113         | 114  | 115  | 117  | 119  | 123  | 125  | 63         |
|                            |     | Efficiency COP   | 2.97        | 2.75 | 2.54 | 2.34 | 2.14 | 1.98 | 1.89 |            |
|                            | -2  | Heat Output (KW) | 122         | 123  | 124  | 126  | 129  | 132  | 134  | 63         |
|                            |     | Efficiency COP   | 3.23        | 2.98 | 2.74 | 2.50 | 2.30 | 2.11 | 2.01 |            |
|                            | 0   | Heat Output (KW) | 131         | 133  | 134  | 136  | 139  | 142  | 144  | 63         |
|                            |     | Efficiency COP   | 3.49        | 3.23 | 2.95 | 2.69 | 2.46 | 2.25 | 2.14 |            |
|                            | 2   | Heat Output (KW) | 141         | 143  | 144  | 146  | 149  | 152  | 154  | 63         |
|                            |     | Efficiency COP   | 3.78        | 3.48 | 3.16 | 2.87 | 2.63 | 2.39 | 2.27 |            |
|                            | 4   | Heat Output (KW) | 151         | 153  | 157  | 158  | 161  | 164  | 166  | 63         |
|                            |     | Efficiency COP   | 4.07        | 3.72 | 3.44 | 3.10 | 2.82 | 2.57 | 2.43 |            |
|                            | 6   | Heat Output (KW) | 162         | 163  | 165  | 167  | 169  | 171  | 173  | 63         |
|                            |     | Efficiency COP   | 4.41        | 3.99 | 3.62 | 3.27 | 2.95 | 2.66 | 2.52 |            |
|                            | 8   | Heat Output (KW) | 168         | 169  | 172  | 173  | 175  | 178  | 179  | 63         |
|                            |     | Efficiency COP   | 4.59        | 4.13 | 3.76 | 3.37 | 3.04 | 2.76 | 2.59 |            |
|                            | 25# | Heat Output (KW) | 213         | 214  | 215  | 216  | 218  | 220  | 223  | 63         |
|                            |     | Efficiency COP   | 5.80        | 5.14 | 4.56 | 4.05 | 3.63 | 3.26 | 3.09 |            |

\*Performance at max flow temperature

# Use for DHW performance in summer months

Amicus air to water heat pumps must be installed and maintained in line with the Installation Commissioning and Maintenance Instructions which are available on the Literature & Downloads section of [www.lochinvar.ltd.uk](http://www.lochinvar.ltd.uk)

# TECHNICAL PRODUCT SUBMITTAL



## AMICUS LAHP-1654HTNN ULTRA LOW NOISE AIR SOURCE HEAT PUMP

| model    | octave bands (hz) |      |      |      |      |      |      |      | lw   |    | lp |
|----------|-------------------|------|------|------|------|------|------|------|------|----|----|
|          | 63                | 125  | 250  | 500  | 1k   | 2k   | 4k   | 8k   |      |    |    |
|          | db                | db   | db   | db   | db   | db   | db   | db   | db   | db | db |
| 252HTNN  | 80.1              | 72.3 | 66.2 | 64.7 | 63.6 | 58.2 | 54.8 | 45.7 | 81.9 | 68 | 36 |
| 302HTNN  | 81.1              | 73.3 | 67.2 | 65.7 | 64.6 | 59.2 | 55.8 | 46.7 | 82.9 | 69 | 37 |
| 452HTNN  | 83.1              | 75.3 | 69.2 | 67.7 | 66.6 | 61.2 | 57.8 | 48.7 | 84.9 | 71 | 39 |
| 492HTNN  | 83.1              | 75.3 | 69.2 | 67.7 | 66.6 | 61.2 | 57.8 | 48.7 | 84.9 | 71 | 39 |
| 602HTNN  | 83.1              | 75.3 | 69.2 | 67.7 | 66.6 | 61.2 | 57.8 | 48.7 | 84.9 | 71 | 39 |
| 752HTNN  | 85.1              | 76.3 | 70.2 | 68.7 | 67.6 | 62.2 | 58.8 | 49.7 | 85.9 | 72 | 40 |
| 852HTNN  | 85.1              | 76.3 | 69.2 | 67.7 | 66.6 | 61.2 | 57.8 | 48.7 | 84.9 | 71 | 39 |
| 1002HTNN | 85.1              | 76.3 | 70.2 | 68.7 | 67.6 | 62.2 | 58.8 | 49.7 | 85.9 | 72 | 40 |
| 1202HTNN | 85.1              | 76.3 | 70.2 | 68.7 | 67.6 | 62.2 | 58.8 | 49.7 | 85.9 | 72 | 40 |
| 1454HTNN | 87.1              | 78.3 | 72.2 | 70.7 | 69.6 | 64.2 | 60.8 | 51.7 | 87.9 | 74 | 42 |
| 1654HTNN | 87.1              | 78.3 | 72.2 | 70.7 | 69.6 | 64.2 | 60.8 | 51.7 | 87.9 | 74 | 42 |
| 1854HTNN | 88.1              | 79.3 | 73.2 | 71.7 | 70.6 | 65.2 | 61.8 | 52.7 | 88.9 | 75 | 43 |
| 2154HTNN | 88.1              | 79.3 | 73.2 | 71.7 | 70.6 | 65.2 | 61.8 | 52.7 | 88.9 | 75 | 43 |

# TECHNICAL PRODUCT SUBMITTAL

## AMICUS LAHP-1654HTNN ULTRA LOW NOISE AIR SOURCE HEAT PUMP

