

THE REAL PROPERTY AND ADDRESS OF TAXABLE PARTY ADDRESS O

FATTEN-UP YOUR RETURN ON INVESTMENT

INTRODUCING THE CARRIER IDROFAN[®] 42EP THE SLIMMEST FAN COIL UNIT ON THE MARKET

The new Carrier ultra-slim FCU increases potential yields throughout the supply chain, whilst allowing for creative building design without compromising on performance.





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ULTRA-SLIM ULTRA-BENEFITS

BOOST PROJECT RETURNS

The uniquely slim profile of the unit means it can be installed in very low-height ceiling voids and under-floor applications, preserving living space and helping to maximise property values.

SAVING SPACE

The 42EP can be used to accommodate increased ceiling height, allowing larger windows and enhancing natural light entering the building.

This makes the property more appealing for investors and estate agencies, and in addition commands higher rental and sales yields. Due to the superior levels of comfort and space achieved, occupants, owners and tenants alike often stay for longer. Longer more regular tenancies means less expense and infrequent turnover of viewings, contracts, commission payments and work for owners.

When used in commercial settings, the increased space and ceiling height boosts productivity, while whisper quiet operation aids concentration and gives the working space a premium ambience. This is another attractive benefit for property investors and commercial agents, since it can result in longer leases and help support a strong demand pipeline for future businesses looking to take over the building.

GENERATING YIELD

Developers also have the option to use the vertical space liberated to add extra floors within a given permitted building height. Again, this helps boost property values by increasing the number of saleable / lettable units within a building.

Example: How 42EP frees up revenue-generating space in a 50-storey residential tower

Conventional fan coils measuring 235mm deep require 300mm of ceiling space. This contrasts with the new 150mm deep 42EP unit, which requires just 200mm of ceiling space - a 30% reduction of ceiling void required, creating significant additional useable vertical space.

For a 50-storey building, this could equate to 50×100 mm = 5 mm of additional vertical space. This creates an opportunity to add an additional floor within the existing permitted building height.

With typically six apartments per floor, and property values increasing towards the top of a building, the 42EP offers significant potential to increase returns. For example, if the average floor space for one two-bedroom flat in London is around 70SM, six of these would mean an extra 420SM of space. In monetary terms, if we take an average of £4000/SM valuation for properties within the M25, this could result in potential returns of an additional £1.6m or more for this single extra storey alone.

Using a conventional fan coil Using the Idrofan 42EP



Liberated vertical space can be used to add extra floors within a given permitted building height, boosting values.



THE SLIMMEST FAN COIL UNIT ON THE MARKET

PIONEERING DESIGN

The unique space-saving and performance characteristics of Idrofan 42EP have been made possible by a new approach to fan coil design, pioneered by Carrier.

Traditional centrifugal fan motors used in fan coils can be bulky and do not lend themselves to low profile designs. The 42EP uses a new patented design that incorporates a split supply and return chamber before the cooling coil, enabling a **super-compact plug** fan to be perfectly positioned to minimise use of internal space.

A completely new approach to mounting controls was required since, when placed side-by-side with the fan coil unit, the controls are effectively taller than the unit is high. The new design gives optimal performance and space efficiency.

Our patented application of "plug fan" technology enables the unique installation of this component within the FCU chasis. This means we can offer a markedly reduced footprint compared to the competition.

NOISE

With noise ratings as low as NR22, the unit is particularly suited for use in residential and hotel applications. It is also ideal for use in commercial offices, where similar space constraints and expectations for high performance increasingly apply.

With whisper quiet operation, the 42EP works unobtrusively in the background to maintain perfect conditions for work, study, leisure and sleep.

INDOOR AIR QUALITY

To ensure the highest indoor air quality is maintained at all times, there is an optional carbon dioxide sensor which links to fresh air valves. If CO₂ concentrations exceed acceptable limits, fresh air is drawn into the living space to maintain air quality in living spaces, bedrooms and offices.

OPTIONS

- Two-pipe and four-pipe versions are available, offering heating between 0.5kW to 5kW and cooling 0.4kW to 4kW.
- Water valves are available as two-way, four-way and auto-balancing
- Control options include basic electro-mechanical, water terminal controller (WTC) BACnet and third party controls.



Idrofan 42EP with Plug fan, an industry first!

TECHNICAL SPECIFICATION

| | | | 42EP02 | 9F | | 42EP03 | 9F | 42EP129F | | 9F |
|--|---|---|---|-----------------------------|------|--------------------------------|-----------------------|----------------|--|----------------------|
| Fan Speed | | MIN | MED | MAX | MIN | MED | MAX | MIN | MED | MAX |
| Variable Speed | V | 4 | 6 | 8 | 4 | 6 | 8 | 4 | 6 | 8 |
| Air Flow Rate | m3/h | 181 | 301 | 422 | 170 | 288 | 408 | 215 | 350 | 480 |
| External Static Pressure | Pa | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Cooling Mode | | 0.04 | | 1.10 | 0.71 | 1.05 | 1.05 | 0.04 | 1.00 | 1.00 |
| Iotal Capacity | <u>kW</u> | 0.64 | 0.9 | 1.12 | 0.71 | 1.05 | 1.35 | 0.94 | 1.32 | 1.62 |
| Sensible Capacity | | 12 5 | 0.88 | <u> </u> | 0.66 | $-\frac{1}{12}$ | $-\frac{1.31}{12.7}$ | 1.84 | $-\frac{1.22}{12.1}$ | 1.52 |
| Supply All Temperature | | 0 11 | 0.16 | 0.21 | 0.13 | - <u>13</u> 0 10 | 0.25 | 017 | 0.24 | - <u>14</u> 0.20 |
| Fluid Pressure Drop | kPa | 2.9 | 5.9 | 9.21 | 1.6 | 25 | 6 | 91 | 18.5 | 26.7 |
| Flectric Motor Consumption | W | 21 | 52 | 86 | 21 | 52 | 86 | 22 | 52 | 87 |
| FCEER Class | | | C | | | _ <u></u> B | | | _ <u></u> B | |
| Noise level | | | - | | | | | | | |
| Lw (global): Sound power level | dB(A) | 50 | 58 | 64 | 59 | 59 | 65 | 56 | 61 | 67 |
| Lw (inlet + radiated): Sound power level | dB(A) | 46 | 54 | 60 | 55 | 55 | 61 | 52 | 56 | 63 |
| Lw (outlet): Sound power level | dB(A) | 48 | 56 | 62 | 57 | 57 | 63 | 54 | 59 | 65 |
| Lp (global): Sound pressure level | dB(A) | 33 | 41 | 47 | 42 | 42 | 48 | 39 | 44 | 50 |
| NC level | dB(A) | 25 | 33 | 40 | 34 | 34 | 40 | 31 | 35 | 42 |
| NR level | dB(A) | 27 | 35 | 42 | 36 | 36 | 42 | 33 | 37 | 44 |
| Dimensions (HxWxD) | mm | 1 | 50x520> | (730 | 1 | 50x520> | (730 | 1 | 50x820> | (730 |
| | | | 42EP13 | 9F | | 42EP22 | 9F | | 42EP23 | 9F |
| Fan Speed | | MIN | MED | MAX | MIN | MED | MAX | MIN | MED | MAX |
| Variable Speed | V | 4 | 6 | 8 | 4 | 6 | 8 | 4 | 6 | 8 |
| Air Flow Rate | m3/h | 207 | 338 | 459 | 388 | 617 | 856 | 352 | 585 | 816 |
| External Static Pressure | Pa | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Cooling Mode | | | | | | | | | | |
| Total Capacity | kW | 1.04 | 1.52 | 1.9 | 1.61 | 2.15 | 2.63 | 1.74 | 2.53 | 3.18 |
| Sensible Capacity | kW | 0.89 | 1.35 | 1.72 | 1.44 | 2 | 2.49 | 1.49 | 2.25 | 2.9 |
| Supply Air Temperature | °C | 10.8 | 11.6 | 12.2 | 12.5 | 13.8 | 14.7 | 10.9 | 12 | 12.7 |
| Fluid flow rate | m3/h | 0.18 | 0.27 | 0.34 | 0.28 | 0.39 | 0.48 | 0.31 | 0.45 | 0.58 |
| Fluid Pressure Drop | kPa | 4.9 | 10.9 | 17.3 | 31.2 | 53.5 | 78.4 | 17.1 | 34.7 | 52.8 |
| Electric Motor Consumption | W | 22 | _ 55 | 87 | 42 | 100 | 170 | 42 | 99 | 170 |
| FCEER Class | | | A | | | В | | | В | |
| Noise level | | 50 | <u></u> | 07 | 50 | | | 50 | <u></u> | |
| Lw (global): Sound power level | | 52 | _ <u>61</u> | _ <u>b/</u> | 52 | - <u>61</u> | - <u>b/</u> | 52 | _ <u>61</u> | - 67 |
| Lw (milet + radiated): Sound power level | $\frac{dB(A)}{dB(A)}$ | 4/ 50 | _ 50 | 65 | 49 | - 20 | _ <u>02</u> | 49 50 | _ <u>50</u> | 66 |
| Lw (outlet): Sound power level | $\frac{dB(A)}{dB(A)}$ | 35 | <u>59</u> | <u>05</u> | 35 | <u>59</u> | _ <u>00</u> 50 | 35 | <u>59</u> | _ <u>00</u> 50 |
| | $\frac{dD(A)}{dR(\Delta)}$ | 26 | 35 | 42 | 27 | | 41 | 27 | - 35 | 41 |
| NR level | $\frac{dB(A)}{dB(A)}$ | 28 | 37 | 44 | 29 | 37 | 43 | 29 | 37 | 43 |
| Dimensions (HxWxD) | | 1 | 50x820x | 730 | 15 | 50x1020 | x730 | 15 | 50x1020 | x730 |
| | | | | | | | | 12502400 | | |
| | | | 42EP04 | 90 | | 42EP14 | 90 | | 42EP24 | 90 |
| Fan Speed | | MIN | MED | MAX | MIN | MED | MAX | MIN | MED | MAX |
| Variable Speed | <u>V</u> | 4 | 6 | 8 | 4 | 6 | 8 | 4 | 6 | 8 |
| Air Flow Rate | <u>m3/h</u> | 168 | 281 | 401 | 205 | 326 | 449 | 337 | 573 | 790 |
| External Static Pressure | Ра | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Cooling Mode | 1.1.1/ | 0.02 | 0.02 | 1.0 | 0.02 | 1.00 | 1.00 | 1.52 | 2.27 | 2.05 |
| Lotal Capacity | | 0.63 | 0.93 | <u>1.2</u> | 0.93 | <u>1.33</u> | 1.69 | 1.53 | 2.27 | 2.85 |
| Supply Air Tomporature | °C | 12.0 | 120 | 1/16 | 11 5 | 122 | 120 | 11.50 | 2.09 | 2.07 |
| Fluid flow rate | | <u>12.5</u> | 014 | 0.18 | 014 | $-\frac{12.2}{0.2}$ | 0.25 | 0.22 | 0.34 | 0.43 |
| Fluid Pressure Dron | kPa | 1 1 | 1.9 | 3.3 | 2.8 | - <u>0.2</u> 5.9 | 9.5 | 9.3 | 21 | 32 |
| Electric Motor Consumption | W | 13 | 32 | 69 | 22 | 54 | 85 | 43 | 100 | 169 |
| FCEER Class | | | В | | | В | | | В | |
| Heating Mode (fluid coil) | | | | | | | | | | |
| Total Capacity | kW | 1.15 | 1.56 | 1.96 | 1.59 | 2.13 | 2.59 | 2.41 | 3.34 | 4.1 |
| Supply Air Temperature | °C | 40.2 | 36.5 | 34.5 | 43 | 39.4 | 37.1 | 41.2 | 37.3 | 35.4 |
| Fluid flow rate | m3/h | 0.1 | 0.14 | 0.17 | 0.14 | 0.19 | 0.23 | 0.21 | 0.29 | 0.36 |
| Fluid Pressure Drop kPa | kPa | 6.4 | 11 | 16.4 | 17.1 | 28.6 | 40.4 | 43.6 | 77.7 | 112 |
| Electric motor consumption | W | 13 | 32 | 69 | 22 | 54 | 85 | 43 | 100 | 169 |
| FCCOP Class | | | В | | | A | | | A | |
| Noise level | | 50 | | | 50 | | | 50 | | |
| Lw (global): Sound power level | dB(A) | 50 | <u>59</u> | <u>64</u> | 52 | - <u>PT</u> | - b/ | 52 | - <u>PT</u> | <u>b/</u> |
| Lw (Inlet + radiated): Sound power level | | 47 | - 55 | <u>60</u> | 4/ | - 50 | - 62 | 49 | 50 | <u>62</u> |
| Lw (outlet): Sound processing level | $\frac{uB(A)}{dB(A)}$ | 48 22 | - 3/ | <u>02</u> | 25 | - 39 | 00 | 25 | - 39 | <u> </u> |
| Lp (global): Sound pressure level | $\frac{dB(A)}{dB(A)}$ | 33 | - <u>42</u> | - 4/ 20 | 30 | - 44 | | 30 | - 44 | |
| | | 20 20 | 55 | 41 | 20 | - 34 | - 41 12 | 2/ | - 30 | - 41 |
| | $\frac{dB(A)}{dB(A)}$ | 27 | 35 | 4. | | 30 | | | | |
| NR level Dimensions (HxWxD) | dB(A) mm | 27 | 35 50x520v | <u>41</u> (730 | 1 | | 43 | 10 | 37 50x1020 | x730 |
| NR level Dimensions (HxWxD) | dB(A) dB(A) mm | 27 1 | 35 50x520> | 41 (730 | 1 | 50x820> | 43 (730 | 15 | <u>37</u> 50x1020 | x730 |
| NR LEVEL Dimensions (HxWxD) Cooling Mode | dB(A) dB(A) mm Heating | 27 1 Mode | <u>35</u> 50x520> | <u>41</u> (730 | 1 | <u>36</u> 50x820> | (730 | <u>25</u> 1 | <u>37</u> 50x1020 | x730 |
| NR Level Dimensions (HxWxD) Cooling Mode Room Air Temperature (db): 23°C | <u>dB(A)</u> <u>dB(A)</u> <u>mm</u> <u>Heating</u> Room Ai | 27 1 Mode r Tempe | <u>35</u> 50x520x | <u>41</u> <730 db): | 19°C | <u>30</u> 50x820x Toshib | - 43 (730 | ditioning | <u>37</u> 50x1020 | <u>43</u> x730 |
| NR level Dimensions (HxWxD) Cooling Mode Room Air Temperature (db): 23°C Room Air Relative Humidity: 50% | <u>dB(A)</u> <u>dB(A)</u> <u>mm</u> <u>Heating</u> Room Ai | 27 1 Mode r Tempe r Relativ | <u>35</u> 50x520> erature (ve Humio | 41 <730 db): dity: | 19°C | 50x820x Toshib Air Co | a Air Con | ditioning | <u>37</u> 50x1020 UK, Car CIAT Uk | x730 rier (are |

| Carrior) | |
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| currer | |
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CONTACT US NOW 01372 220 220 E: uk.info@carrier.com Discover more about Carrier here:

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All statements are correct at time of publication - July 2020

47.1% Return Air Relative Humidity:

7°C Entering Fluid Temperature:

System Curve Design

External Static Pressure

9dB External Static Pressure:

6°K Fluid Delta T:

Water Fluid Type:

8dB Applied To:

Return Air Relative Humidity:

Entering Fluid Temperature:

Fluid Delta T:

Attenuations:

Sound Attenuation

Room Attenuations:

Ceiling and System

Fluid Type:

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50.7%

60°C

10°K

Water

30Pa

All Fan

Speeds

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