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GENERAL DESCRIPTION

APPLICATION
GLEC-6 kitchen exhaust fan is designed to be used for the extraction of exhaust air and other non-aggressive gases where low energy consumption, low noise and demand controlled ventilation are required. It can be installed inside or outside of the building. If installed outside a rain cover must be used and the fan must be sealed, see the installation manual.
The EC motor for GLEC-6 is a permanent magnet motor of class IE4 with motor speed control. The impeller is optimized for high efficiency and low noise. The casing hatches can be easily opened, which enables easy access to clean the impeller and inside of the casing.
The fan is as standard a vertically split version, which helps in transporting it to site.
When used as a smoke extract fan, the fan can handle 300°C for 60 minutes.

SPECIFICATION
Product type: GLEC-6 kitchen exhaust fan
Impeller type: Backward curved impeller, painted with 60 μm thick epoxy paint colour RAL 6029 (green)
Insulation: Casing is insulated for sound and condensation with 50 mm mineral wool
Temperature: Max. exhaust air +80°C in continuous use, max. ambient temperature +40°C
Fire resistance class: F300(60) tested according to EN 12101-3 by Fläkt Woods
Motor: EC motor with permanent magnets with speed controller
Electrical supply: Sizes 031 and 040: 1~230 VAC 50 Hz
Size 050: 3~400 VAC 50 Hz
Speed controller: Using 0-10 V control signal

FEATURES
• 3 sizes
• Volume flow rate up to 2.6 m³/s (9360 m³/h)
• Max pressure rise 1000 Pa

MATERIAL AND DESIGN
The casing is made of galvanized sheet steel. It is equipped with two inspection hatches, one on each side. Spigots have a rubber gasket and the outlet spigot is modified to minimize the pressure drop.

The fan is equipped with vibration dampers mounted under the standing skids.

FAN IMPELLER
The fan impeller has backward curved blades made of sheet steel, welded and painted with 60 μm thick epoxy paint (colour 6029, green). The impeller is dynamically balanced and the vibration level for the complete fan is below 7.1 mm/s RMS ISO 14694.

MOTOR
The EC motor is a permanent magnet motor with a motor speed controller. Wiring between motor and speed controller is carried out in the factory. The motor is directly connected to the impeller. It only requires mains connection and a 0 - 10 V control signal.
**WIRING CHARTS**

Wiring charts are presented on pages 11 - 12.

**EASY INSTALLATION**

The casing of the GLEC-6 can be split for easier transfer of the fan, for example when an existing fan has to be replaced. Both fan inlet and outlet are equipped with connection components including a rubber gasket. The box fan has as standard standing skids fitted with vibration dampers.

The use of a flexible connection on both inlet and outlet side is recommended. Standing skids can be removed and installed to another position if an alternative discharge position is required.

The fan can be installed inside or outside of the building. If installed outside a rain cover must be used and the fan must be sealed, see the installation manual.

**EASY ACCESS FOR SERVICE AND CLEANING**

The fan must be regularly cleaned to maintain perfect operation. The casing is equipped with two inspection hatches that allow easy access to the impeller and inside of the casing for cleaning service. The motor itself is located outside of the casing.

**ACCESSORIES**

- Flexible connection, inlet, F300(60) GLLZ-12-1-cce-1-0
- Flexible connection, outlet, F300(60) GLLZ-22-1-cce-1-0
- Safety switch SAFE-1-0-0
- Operation panel PAN-08-0
- Rain cover GLLZ-78-1-cce-1-0
PERFORMANCE DATA

Max volume flow rate m³/s as function of total pressure

| Fan size   | Pressure (Pa) | 50  | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  | 750  | 800  | 850  | 900  | 950  | 1000 |
|------------|---------------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|      |
| GLEC-6-031 |               | 0.92| 0.89 | 0.86 | 0.84 | 0.81 | 0.78 | 0.75 | 0.72 | 0.68 | 0.64 | 0.59 | 0.53 | 0.45 | 0.37 |
| GLEC-6-040 |               | 1.32| 1.3  | 1.27 | 1.23 | 1.2  | 1.16 | 1.11 | 1.06 | 1   | 0.94 | 0.86 | 0.78 | 0.67 | 0.45 |
| GLEC-6-050 |               | 2.55| 2.51 | 2.46 | 2.41 | 2.36 | 2.31 | 2.26 | 2.2  | 2.14 | 2.07 | 1.92 | 1.84 | 1.74 | 1.64 | 1.52 | 1.39 | 1.23 | 1    |

Max volume flow rate m³/h as function of total pressure

| Fan size   | Pressure (Pa) | 50  | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  | 750  | 800  | 850  | 900  | 950  | 1000 |
|------------|---------------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|      |
| GLEC-6-031 |               | 3312| 3204 | 3096 | 3024 | 2916 | 2808 | 2700 | 2592 | 2448 | 2304 | 2124 | 1908 | 1620 | 1332 |
| GLEC-6-040 |               | 4752| 4680 | 4572 | 4428 | 4320 | 4176 | 3996 | 3816 | 3600 | 3384 | 3096 | 2808 | 2412 | 1620 |
| GLEC-6-050 |               | 9360| 9180 | 9036 | 8856 | 8676 | 8496 | 8316 | 8136 | 7920 | 7704 | 7452 | 7200 | 6912 | 6624 | 6284 | 5904 | 5472 | 5004 | 4428 | 3600 |
FAN CHART-EXPLANATION AND DEFINITIONS

SYMBOLS

FAN DATA
The fan data is presented using fan-motor-speed controller combination. For nominal flow rate, see each size. The fan data is presented at density 1.2 kg/m² and tested according to ISO 5801 and ISO 13347-2.

SOUND DATA
The total A-weighted sound power level $L_{WA}$ to the outlet duct can be read in the fan chart. The correction coefficients by octave bands can be read in the sound data table for each size. The sound level by octave band to the outlet duct, inlet duct or surroundings (without A-weighting) can be obtained by using the following formula, where $K_{oct}$ is read from the correct sound path.

$$L_{Woct} = L_{WA} + K_{oct}$$

SOUND PRESSURE LEVEL AND REMOTE ATTENUATION

The total sound pressure level to surroundings at different distances can be estimated using the following formula:

$$L_{PA} = L_{WA} + K_{c} - \Delta L$$

EXAMPLE
GLEC-1-040-1-080-0 fan with 0.6 m³/s at 300 Pa. $L_{WA}$ at fan outlet can be read in the fan chart; approximately 71.3 dB(A), the fan speed is around 1300 rpm.

Sound data at fan inlet can be calculated as follows:

<table>
<thead>
<tr>
<th>Octave band</th>
<th>63</th>
<th>125</th>
<th>250</th>
<th>500</th>
<th>1000</th>
<th>2000</th>
<th>4000</th>
<th>8000</th>
</tr>
</thead>
<tbody>
<tr>
<td>$L_{WA}$</td>
<td>71.3</td>
<td>71.3</td>
<td>71.3</td>
<td>71.3</td>
<td>71.3</td>
<td>71.3</td>
<td>71.3</td>
<td>71.3</td>
</tr>
<tr>
<td>$K_{oct}$</td>
<td>9</td>
<td>12</td>
<td>4</td>
<td>-1</td>
<td>-9</td>
<td>-12</td>
<td>-38</td>
<td>-21</td>
</tr>
<tr>
<td>$L_{Woct}$</td>
<td>80.3</td>
<td>83.3</td>
<td>75.3</td>
<td>70.3</td>
<td>62.3</td>
<td>59.3</td>
<td>53.3</td>
<td>50.3</td>
</tr>
</tbody>
</table>

Sound pressure level at distance of 3 meters is calculated as follows:

$$L_{WA} = 72 \text{ dB(A)}$$

$$K_{c} = -4 \text{ dB}$$

$$\Delta L = -17 \text{ dB(A)}$$

$$L_{PA} = 51 \text{ dB(A)}$$

THE SYMBOLS USED:

= fan type and size.

= minimum fan speed where the sound power level correction $K_{oct}$ is still applicable.

= maximum fan speed where the sound power level correction $K_{oct}$ is still applicable.

= Sound power level correction factors $K_{oct}$ for the octave bands 63 to 8000 Hz.
TECHNICAL DATA

GLEC-6-031-1-055-0

SOUND DATA

<table>
<thead>
<tr>
<th>Fan code</th>
<th>Sound path</th>
<th>Min r/min</th>
<th>Max r/min</th>
<th>Correction Koc (dB) in octave band mid-frequency (Hz)</th>
<th>Kc (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>63</td>
<td>125</td>
</tr>
<tr>
<td>GLEC-6-031</td>
<td>Outlet duct</td>
<td>0</td>
<td>1533</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Outlet duct</td>
<td>1533</td>
<td>2300</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Inlet duct</td>
<td>0</td>
<td>1533</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Inlet duct</td>
<td>1533</td>
<td>2300</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Surroundings</td>
<td>0</td>
<td>1533</td>
<td>-19</td>
<td>-13</td>
</tr>
</tbody>
</table>

DIMENSIONS

Weight: 75 kg

Nominal flow rate: 0.821 m³/s

PRODUCT CODE

Kitchen exhaust fan

Type (a) 
6 = F300(60)

Size (b) 
031

Motor (c) 
1 = 1-phase motor

Motor power (ddd) 
055 = 0.55 kW

Version (e) 

MOTOR DATA

<table>
<thead>
<tr>
<th>Fan Code</th>
<th>Nom power kW</th>
<th>Supply Voltage</th>
<th>Max Speed r/min</th>
<th>Min Speed r/min</th>
<th>Nom Current A</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLEC-6-031</td>
<td>0.55</td>
<td>1-230 VAC 50 Hz</td>
<td>2300</td>
<td>300</td>
<td>3</td>
</tr>
</tbody>
</table>

ACCESSORIES

Flexible connection, inlet, F300(60) 
GLLZ-12-1-031-1-0

Flexible connection, outlet, F300(60) 
GLLZ-22-1-031-1-0

Safety switch 
SAFE-1-0-0

Operation panel 
PAN-08-0

Operation panel 

Accessories: 

GLLZ-78-1-031-1-0
TECHNICAL DATA

**GLEC-6-040-1-080-0**

![Graph showing sound data](image)

**DIMENSIONS**

![Diagram showing dimensions](image)

**SOUND DATA**

<table>
<thead>
<tr>
<th>Fan code</th>
<th>Sound path</th>
<th>Min r/min</th>
<th>Max r/min</th>
<th>Correction Koc (dB) in octave band mid-frequency (Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLEC-6-040</td>
<td>Outlet duct</td>
<td>0</td>
<td>1533</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Outlet duct</td>
<td>1533</td>
<td>1780</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Inlet duct</td>
<td>0</td>
<td>1533</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Inlet duct</td>
<td>1533</td>
<td>1780</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Surroundings</td>
<td>0</td>
<td>1533</td>
<td>-13</td>
</tr>
<tr>
<td></td>
<td>Surroundings</td>
<td>1533</td>
<td>1780</td>
<td>-19</td>
</tr>
</tbody>
</table>

**PRODUCT CODE**

- **Type [a]**
  - G6 = F300(60)

- **Size [bbb]**
  - 040

- **Motor [c]**
  - 1 = 1-phase motor

- **Motor power [ddd]**
  - 080 = 0.75 kW

- **Version [e]**
  - GLEC-6-040-1-080-0

**MOTOR DATA**

<table>
<thead>
<tr>
<th>Fan Code</th>
<th>Nominal power kW</th>
<th>Supply Voltage</th>
<th>Max Speed r/min</th>
<th>Min Speed r/min</th>
<th>Nom Current A</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLEC-6-040</td>
<td>0.75</td>
<td>1-230VAC 50 Hz</td>
<td>1780</td>
<td>300</td>
<td>8.5</td>
</tr>
</tbody>
</table>

**ACCESSORIES**

- Flexible connection, inlet, F300(60) GLLZ-12-1-040-1-0
- Flexible connection, outlet, F300(60) GLLZ-22-1-040-1-0
- Safety switch SAFE-1-0-0
- Operation panel PAN-08-0
- Rain cover GLLZ-78-1-040-1-0

**Nominal flow rate:** 118 m³/s

**Weight:** 98 kg
TECHNICAL DATA

GLEC-6-050-3-220-0

<table>
<thead>
<tr>
<th>Fan Code</th>
<th>GLEC-6-050-3-220-0</th>
</tr>
</thead>
</table>

SOUND DATA

<table>
<thead>
<tr>
<th>Fan code</th>
<th>Sound path</th>
<th>Min r/min</th>
<th>Max r/min</th>
<th>125</th>
<th>250</th>
<th>500</th>
<th>1000</th>
<th>2000</th>
<th>4000</th>
<th>8000</th>
<th>Kc (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outlet duct</td>
<td>0</td>
<td>1533</td>
<td>15</td>
<td>10</td>
<td>2</td>
<td>-5</td>
<td>-6</td>
<td>-13</td>
<td>-20</td>
<td>-24</td>
<td></td>
</tr>
<tr>
<td>Outlet duct</td>
<td>1533</td>
<td>1695</td>
<td>11</td>
<td>5</td>
<td>5</td>
<td>-5</td>
<td>-8</td>
<td>-11</td>
<td>-15</td>
<td>-23</td>
<td></td>
</tr>
<tr>
<td>Inlet duct</td>
<td>0</td>
<td>1533</td>
<td>12</td>
<td>10</td>
<td>5</td>
<td>-3</td>
<td>-6</td>
<td>-9</td>
<td>-17</td>
<td>-19</td>
<td></td>
</tr>
<tr>
<td>Inlet duct</td>
<td>1533</td>
<td>1695</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>-4</td>
<td>-9</td>
<td>-10</td>
<td>-14</td>
<td>-20</td>
<td></td>
</tr>
<tr>
<td>Surroundings</td>
<td>0</td>
<td>1533</td>
<td>-15</td>
<td>-9</td>
<td>-12</td>
<td>-11</td>
<td>-13</td>
<td>-25</td>
<td>-26</td>
<td>-29</td>
<td>-10</td>
</tr>
<tr>
<td>Surroundings</td>
<td>1533</td>
<td>1695</td>
<td>-18</td>
<td>-12</td>
<td>-10</td>
<td>-7</td>
<td>-11</td>
<td>-26</td>
<td>-30</td>
<td>-32</td>
<td>-7</td>
</tr>
</tbody>
</table>

PRODUCT CODE

| Type (a) | 6 = F300(60) |
| Size (b) | 050 |
| Motor (c) | 3 = 3-phase motor |
| Motor power (ddd) | 220 = 2.2 kW |

MOTOR DATA

<table>
<thead>
<tr>
<th>Fan Code</th>
<th>Nom power kW</th>
<th>Supply Voltage</th>
<th>Max Speed r/min</th>
<th>Min Speed r/min</th>
<th>Nom Current A</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLEC-6-050</td>
<td>2.2</td>
<td>3-400VAC 50 Hz</td>
<td>1695</td>
<td>300</td>
<td>4.7</td>
</tr>
</tbody>
</table>

ACCESSORIES

- Flexible connection, inlet, F300(60): GLLZ-12-1-050-1-0
- Flexible connection, outlet, F300(60): GLLZ-22-1-050-1-0
- Safety switch: SAFE-1-0-0
- Operation panel: PAN-08-0
- Rain cover: GLLZ-78-1-050-1-0

DIMENSIONS

Weight: 147 kg

Nominal flow rate: 2.233 m³/s
ACCESSORIES

FLEXIBLE CONNECTION GLLZ-12/22

Flexible connection inlet, F300(60)  GLLZ-12-1-ccc-1-0
Flexible connection outlet, F300(60)  GLLZ-22-1-ccc-1-0

Size (ccc)
031, 040, 050

ØA 316 406 506

SAFETY SWITCH SAFE

The safety isolation switch has been tested to IEC 947-3. It is delivered loose.

<table>
<thead>
<tr>
<th>Fan code</th>
<th>Safety Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLEC-6-031-1-055-0</td>
<td>SAFE-1-0-0</td>
</tr>
<tr>
<td>GLEC-6-040-1-080-0</td>
<td>SAFE-1-0-0</td>
</tr>
<tr>
<td>GLEC-6-050-3-220-0</td>
<td>SAFE-1-0-0</td>
</tr>
</tbody>
</table>
**WIRING**

**GLEC-6-031-1-055-0**  
**GLEC-6-040-1-080-0**

Two separate ground conductors  
or one at least 10 mm² conductor

1~230 V ±10%  
50/60 Hz

Supply

Motor

Alarm relay 1  
Running relay 1

**Modbus**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Bus A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>Bus B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>GND</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>±10 VDC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05</td>
<td>0-10 Vin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>06</td>
<td>GND</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>07</td>
<td>Din2</td>
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<td></td>
<td></td>
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<tr>
<td>08</td>
<td>Din1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>09</td>
<td>Dout1</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>GND</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Fire mode**

Start/Stop

**Hand terminal**

PAN-08-0

Specifications are subject to alteration without notice.
WIRING

GLEC-6-050-3-220-0

Two separate ground conductors or one at least 10 mm² conductor

3~400 V ±10%
50/60 Hz

Hand terminal PAN-08-0

Motor

Supply

Alarm relay 1
Running relay 1

Modbus

Fire mode
Start/Stop

Motor

U
V
W
PE

Alarm

relay 1

Running
relay 1

11 NC
12 C
13 N0
14 NC
15 C
16 N0

Supply

01 Bus A
02 Bus B
03 GND
04 ±10 VDC
05 0-10 Vin
06 GND
07 Din2
08 Din1
09 Dout1
10 GND

Specifications are subject to alteration without notice.
PRODUCT AND ACCESSORY CODES

**Kitchen exhaust fan GLEC-a-bbb-c-ddd-0**

- **Type (a)**
  6 = High temperature

- **Size (bbb)**
  031, 040, 050

- **Motor (c)**
  1 = 1-phase motor
  3 = 3-phase motor

- **Motor power (ddd)**
  055 = 0.55 kW (GLEC-6-031)
  080 = 0.75 kW (GLEC-6-040)
  220 = 2.20 kW (GLEC-6-050)

- **Version (e)**

**ACCESSORIES**

- **Flexible connection inlet, F300(60) GLLZ-12-1-ccc-1-0**
  - Fan size (ccc)
    031, 040, 050

- **Flexible connection outlet, F300(60) GLLZ-22-1-ccc-1-0**
  - Fan size (ccc)
    031, 040, 050

- **Safety switch SAFE-1-0-0**

- **Operation panel PAN-08-0**

- **Rain cover GLLZ-78-1-ccc-1-0**
  - Fan size (ccc)
    031, 040, 050
EXCELLENCE IN SOLUTIONS

FläktGroup is the European market leader for smart and energy efficient Indoor Air and Critical Air solutions to support every application area. We offer our customers innovative technologies, high quality and outstanding performance supported by more than a century of accumulated industry experience. The widest product range in the market, and strong market presence in 65 countries worldwide, guarantee that we are always by your side, ready to deliver Excellence in Solutions.

PRODUCT FUNCTIONS BY FLÄKTGROUP
Air Treatment | Air Movement | Air Diffusion | Air Distribution | Air Filtration
Air Management | Air Conditioning & Heating | Controls | Service

Learn more on www.flaktgroup.com
or contact one of our offices