The AscTec Firefly for automatic flight experiments.

Ascending Technologies – manufacturer and innovator of micro UAVs. With more than 1000 multicopters sold worldwide, the company is highly experienced. You are kindly invited to profit from the expertise of the long-standing technology leader in unmanned aerial vehicles (UAV).

The AscTec Firefly is the most advanced UAV of the AscTec Research Line. High quality standards are held during the production process, to ensure our products are reliable and safe. Our customers are registered to a database, allowing us to provide them with the newest software and hardware updates.

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Date & version: 01.05.2015 – V4.0
Product designation: AscTec Firefly
Producer: Ascending Technologies GmbH
Address: Konrad-Zuse-Bogen 4 /// 82152 Krailling Germany

Summary

This safety data sheet contains all relevant information about the flight system to apply for a take-off permission.

Table of content:
Technical data & safety functions.

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Technical data & safety functions

<table>
<thead>
<tr>
<th>Flight system</th>
<th>Hexacopter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>605 x 665 x 165 mm</td>
</tr>
<tr>
<td>Engines</td>
<td>6 electrical, brushless (sensorless) motors with 100W maximum power each</td>
</tr>
<tr>
<td>Rotor diameter</td>
<td>8&quot; (~ 20 cm)</td>
</tr>
<tr>
<td>Number of rotors</td>
<td>6</td>
</tr>
<tr>
<td>Rotor weight</td>
<td>~ 6 g</td>
</tr>
<tr>
<td>Empty weight</td>
<td>~ 650 g</td>
</tr>
<tr>
<td>Min. take-off weight</td>
<td>~ 1000 g</td>
</tr>
<tr>
<td>Max. take-off weight</td>
<td>~ 1600 g</td>
</tr>
<tr>
<td>Flight time</td>
<td>12 – 14 min.</td>
</tr>
<tr>
<td>Max. range</td>
<td>1 km²</td>
</tr>
<tr>
<td>Tolerable wind speed</td>
<td>10 m/s</td>
</tr>
<tr>
<td>Max. payload</td>
<td>~ 600 g</td>
</tr>
</tbody>
</table>

Max. airspeed

- Manual mode | 15 m/s |
- GPS mode | 3 m/s |
- Max. climb rate: | 8 m/s |
- Max. thrust: | 36 N |

Wireless communication

- 2.4 GHz XBee link | 10–63 mW (optional) |
- WiFi | (optional) |

LiPo battery types [mAh]

- PP5000, 3 Cells | 5000 |
- PP4900, 3 Cells | 4900 |

Certification

CE, RoHS

Safety functions

- **Redundancy**: The redundant propulsion system enables a controlled flight even with only 5 functioning motors and actively compensates for failure. In worst case the system would start to sink automatically.
- **Telemetry in realtime**: All necessary system information such as GPS position, height, velocity, battery load, link and GPS quality for instance is displayed live.
- **Sensor output check**: All important sensor values and system parameters are checked automatically before each flight. If a value is critical, it will be identified and interrupt the launching procedure automatically.

- **3 Emergency modes**: The pilot can choose one of three emergency modes to determine the automatic landing in case of link loss: “Direct landing”, “Comehome straight” (at its current height) or “Comehome high” (at max. mission height). As soon as the link is reestablished you may take control again and continue the flight.

Former & available payload options

- **AscTec Mastermind**
  + Camera Mount Option 1 or 2

- **AscTec Atomboard**
  + Camera Mount Option 1, 2 or 4
  + Laser Scanner Mount
  BlueFOX 1/3" CMOS Camera
  Vi-Sensor (www.skybotix.com)
  30m Laser Scanner Hokuyo UTM-30LX
  20m Laser Scanner Hokuyo UST-20LX
  16m Laser Scanner Hokuyo UST-10LX
  4m Laser Scanner Hokuyo URG-04LX
  Propeller Protection (small/large)

Certification

CE, RoHS

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**Certification**

CE, RoHS