

## SPECIFICATION OF DRONES

DRONE TYPE	quadrocopter (four rotor vehicle)
DRONE SIZE	under 100 cm in diameter and approx. 30 cm total height
DRONE WEIGHT	less than 2 kg total takeoff weight (including max payload)
FLIGHT TIME	5-8 minutes recommended, 10-12 minutes max show time per take-off. Multiple take-offs are possible.
FLIGHT ALTITUDE	typically 0-100m above ground, depends on application
PREFERRED SPEED	0-6 m/s horizontal and 0-2 m/s vertical relative to ground. Can be slightly extended depending on the environment.

## CONTROL MECHANISMS AND SAFETY MEASURES

MOTION CONTROL	<p>Any combination of these methods is possible:</p> <ul style="list-style-type: none"> <li>• preprogrammed flight paths</li> <li>• real-time interactions with humans</li> <li>• self-organized motion</li> </ul>
SAFETY MEASURES	<ul style="list-style-type: none"> <li>• top quality carbon and wooden frame and propellers, professional level motors and speed controllers</li> <li>• speed limitation</li> <li>• altitude and flying zone limitation, automatic avoidance of predefined objects</li> <li>• LIDAR assistance when flying close to buildings</li> <li>• real-time communication and collision avoidance between drones, individual error handling within the flock context</li> <li>• continuous error checking and multi-level failsafe mechanisms</li> <li>• continuous real-time monitoring and individual control through ground station</li> <li>• well-tested routines for immediate landing, return-to-home or return to closest predefined emergency landing spots</li> </ul>



## MULTI-DRONE LIGHT SHOW

DRONE LIGHTING                      20 Watts of programmable colored LEDs and LED strips

## DRONE-LAUNCHED FIREWORKS

APPLICABLE PYRO TYPES                      Stroboscope, roman candle, waterfall, rocket, or any other custom type can be used within weight, size and safety specifications.

CONTROL OPTIONS                      Preprogrammed, automated triggering, synchronized to motion, light and music, or manual triggering through remote controller.

SAFETY MEASURES                      Safety switch on remote controller  
Onboard triggering automatically disabled in case of any malfunction, unexpected behavior or low altitude  
Dedicated and well-tested electronics for onboard triggering

## GENERAL TECH RIDER

TAKE-OFF AREA                      Flat surface, min. 5 m between drones, min 8 m from buildings when not using LIDAR assistance, min 1 m with LIDAR.

FLIGHT AREA                      No audience under drones, no high-power lines within 30 m, free airspace, min. distance in air between drones is 5 m, preferable is 8-10 m.

SAFETY ZONE                      Empty corridor between audience and flight area, width depending on local aviation rules and height of flights. Minimum 10 m advisable in all cases.

FLIGHT PERMISSIONS                      To be arranged by event organizer, with our intensive assistance. It is advisable to have permissions ready 1 month before the event. Please note that getting flight permissions can be a long procedure. Typical lead time is 1-3 months.

WEATHER CONDITIONS                      Moderate rain and average wind speed below 8 m/s is tolerable. Temperatures above 35 °C (especially with direct sunlight) are to be avoided. Temperatures below -10 °C are not tested.