

## Kray Protection aerial application UAS



### Airframe

<b>Take-Off Weight</b>	<b>77 lbs</b>
<b>Type</b>	<b>Compound octocopter</b>
<b>Construction</b>	<b>Carbon fiber composite</b>
<b>Diameter, By Motor Axes</b>	<b>79 inches</b>
<b>Diameter, By Prop Tips</b>	<b>108 inches</b>
<b>Height</b>	<b>35 inches</b>
<b>Wing Plane Form</b>	<b>56x18 inches elliptic</b>
<b>Wing Area</b>	<b>5.8 square feet</b>

### Propulsion System

<b>Power Unit</b>	<b>2x 5-16 AH 6s Li-Po battery</b>
<b>Battery Change</b>	<b>Hot swap racks</b>
<b>Thrust Propeller</b>	<b>19"x18" carbon fiber</b>
<b>Thrust Motor</b>	<b>1100 W BLDC</b>
<b>Lift Propellers</b>	<b>29"x9.5" carbon fiber</b>
<b>Lift Motors</b>	<b>750 W BLDC</b>
<b>Specific Energy Consumption</b>	<b>19-22 W·h/hectare</b>

### Spraying System

<b>Chemicals Tank</b>	<b>5.9 gallons</b>
<b>Application Strip Width</b>	<b>16.4 feet</b>
<b>Application Dosage</b>	<b>0.6-4.5 lbm/acre</b>
<b>Operational Speed*</b>	<b>0 to 100 feet/sec</b>
<b>Operational Height</b>	<b>3 feet above the crop max</b>
<b>Droplet Size</b>	<b>20-100 µm</b>
<b>Application Rate Control</b>	<b>Uniform, Variable Rate Map</b>

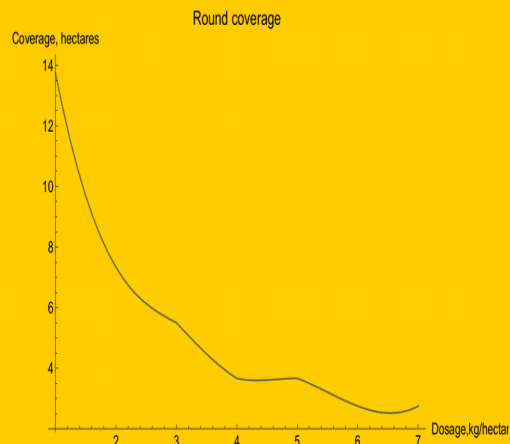
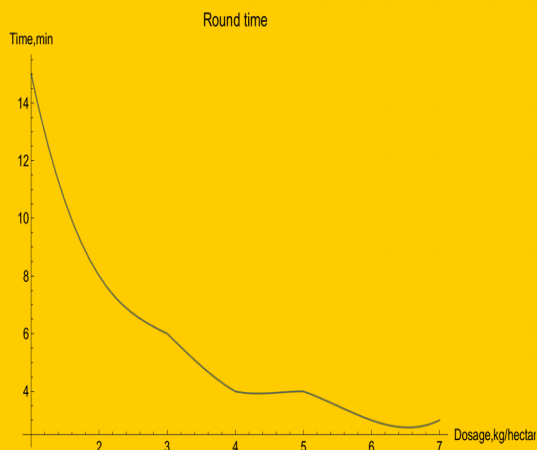
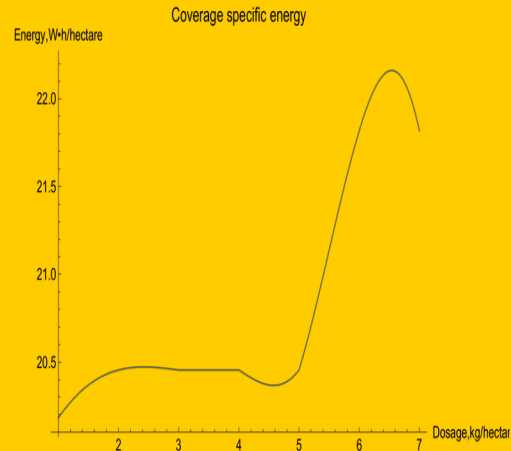
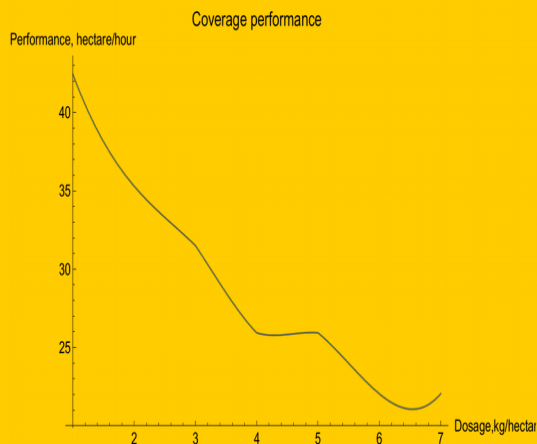
### Navigation system

<b>Height Maintenance</b>	<b>Stereo vision surface and obstacle detection system</b>
<b>Ground-Based Obstacle Avoidance</b>	<b>Automated, from 3 feet height</b>
<b>GPS Type</b>	<b>GNSS (with basestation)</b>

## Operation Parameters

<b>Max Performance</b>	<b>2.3 acre/minutes</b>
<b>Round Time</b>	<b>up to 22** minutes</b>
<b>Round Coverage*</b>	<b>up to 36.8** acres</b>
<b>Average Performance*</b>	<b>up to 92** acre/hour</b>
<b>Application Mission Planning</b>	<b>Automated</b>
<b>Mission Structure</b>	<b>Multi-round with reloads</b>
<b>Refilling Method***</b>	<b>Semi-automated with overfill protection</b>
<b>Refilling Rate***</b>	<b>11 gallons/min</b>

## Performance charts



## Footnotes

\* - Values in the table correspond to the series production. In the pre-series model the flight speed is limited due to safety reasons:

<b>Operational Speed</b>	<b>0 to 80 feet/sec</b>
<b>Round Coverage</b>	<b>up to 28 acres</b>
<b>Application Dosage</b>	<b>0.6-4.5 lbm/acre</b>

**\*\* - Assumption and Methodology for calculating of a productivity:**

The field area is 250 acres and has a square shape with 3,280 feet side  
Application Dosage 0.6 lbm/acre

A distance from the dock-station to a work point is 1,640 feet in average

A delay for acceleration&braking form 0 to max speed is 8 sec for a flight segment in average

The flight speed is 100 feet/sec

A flight time along the field is 42 sec

The round time is 21 min (1,260 sec)

The treated flight path is 126,000 feet

An application strip width is 16.4 feet

The treated area per round is 36.8 acres

Time for landing/refill/recharge is 160 sec

The calculated performance is 92 acres/hour

Lidar detection range

13-66 feet

Stereo camera detection range

23-230 feet



**DISCLAIMER: ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.**