

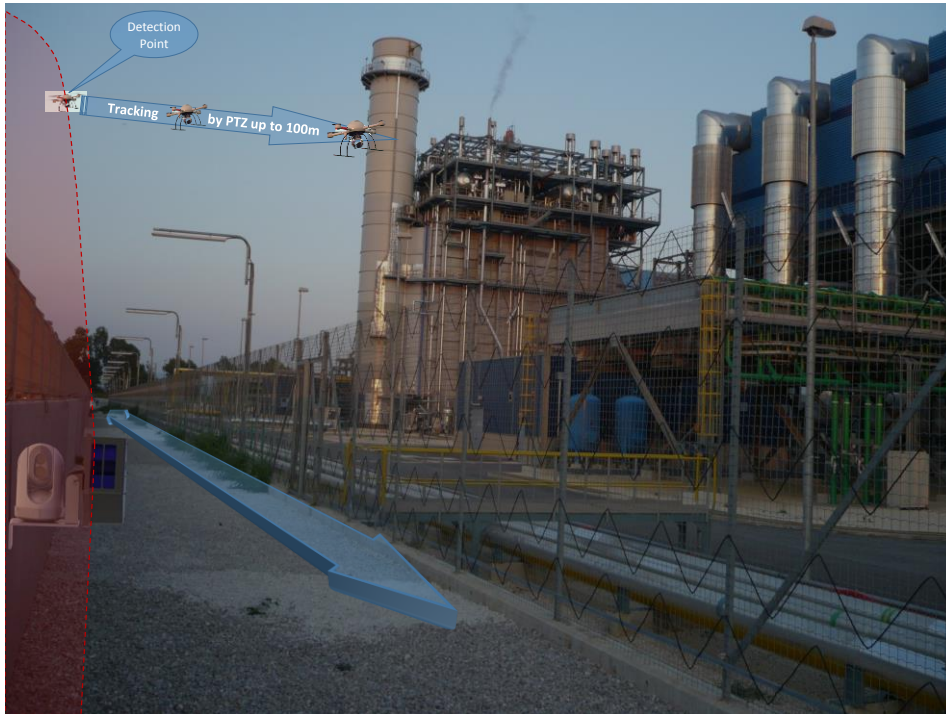
Laser Curtains for Mini Drone Detection

The detection is based on a Laser Radar Detector which creates a vertical laser detection curtain. The Laser Curtain is created by an LFS type sensor (Laser Fence Sensor http://www.smartsecsystems.com/prdct_lfs.htm) which is adapted for detection of Mini Drones. In order to enable the most cost effective solution, DFSL offers 4 types of products.

Type	Maximum Detection Range (m)	Maximum Mini Drone Ground Speed (m/sec)
2D-MND-125-16	125	10
2D-MND-250-16	250	10
2D-MND-250-48	250	25
2D-MND-250-48-C	250	25

It is very recommended that, in order to validate the detection, the integrator will provide the user visual information. It can be done by PTZ camera with or without Auto Tracking algorithms, by a block of 4 HD fixed cameras or by our by using our 2D-MND-250-48-C type detector which integrates an embedded Pan HD Camera. All of the video devices must be equipped with proper illuminators.

Following the detection of the mini drone by the Laser Radar Detector, the location of the intrusion is transferred to the video control which subsequently points the video device to specific location. At this stage, the Laser Detector finishes his role. If the user uses a basic PTZ , the operator will take command and follow the target. If the PTZ is able of auto tracking, the PTZ will automatically follow the target. When the integrator chose to integrate PTZ he must consider aspects such as PTZ turning rate, Field of View, Focus etc. The illustration below shows a typical detection & tracking scenario:



DFSL recommends using fixed HD cameras, whose total field of view covers the detector scanning sector, i.e. 100 degrees. The geometrical position of the HD cameras should be aligned with the Laser Curtain in order to provide a proper coverage. Please see the following illustration:



The integrator video software will enable focusing on the target location, as shown in the picture below:



The illustration below shows the tracking of the Mini Drone. The Tracking distance depends on the location of the intrusion relative to the HD cameras:



DFSL offers a Laser Curtain detector with an embedded Pan HD Camera: **2D-MND-250-48-C**. The product simplifies the integration. It comes with DFSL video zoom & tracking and Integration Software.