

CLAIMS

1. Method for remote detection of gaseous substances in the atmosphere by the DIAL system with two lasers, **characterized in that** the laser beam generated by the first laser impinges on a semipermeable mirror, where 50% of the laser beam power passes through the semipermeable mirror and proceeds through the first aperture towards the target and at the same time the remaining 50% of the laser beam power reflects from the semipermeable mirror, impinges on a totally reflecting mirror from which it is reflected and is directed through the second aperture to the same target; The delayed laser beam generated by the second laser impinges on a semipermeable mirror, where 50% of the laser beam power passes through the semipermeable mirror, impinges on a totally reflecting mirror from which it is reflected and is directed through the second aperture to the same target and at the same time the remaining 50% of the laser beam power reflects from the semipermeable mirror and proceeds through the first aperture towards the same target.
2. Remote detector of gaseous substances in the atmosphere by the DIAL system with two lasers, **characterized in that** it consists of the first laser (1) and the second laser (2), while at the intersection of the axes of their laser beams a semipermeable mirror (3) is located; behind the semipermeable mirror (3), a totally reflecting mirror (5) is located in the forward direction of the laser beam advance generated by the second laser (2) and also in the reflected direction from the semipermeable mirror (3) of the laser beam advance generated by the first laser (1); the first aperture (4) is located in a forward direction from the semipermeable mirror (3) of the 50% laser beam advance from the first laser (1) and of the reflected 50% laser beam advance from the second laser (2); the second aperture (6) is located in the reflected direction from the totally reflecting mirror (5) of the 50% laser beam advance from the first laser (1) and of the 50% laser beam advance from the second laser (2).