



## Alignment of the Laser Optical Resonator

Incorrect alignment of the laser optical resonator can cause a variety of laser performance problems:

- low output beam power
- poor beam power stability
- poor Q-switched pulse stability (see technical bulletin "What is 'Ding-Dong'")
- poor beam mode quality
- non-circular beam
- reduced arc lamp lifetime

Good optical alignment means that the beam must be centered in the YAG laser rod. It also means that the beam cannot pass diagonally through the YAG rod; the beam must pass through the center of both ends of the YAG rod.

Because the end faces of a YAG rod may not be exactly perpendicular ( $\perp$ ) to the rod centerline, use of an Alignment Autocollimator alone will not necessarily achieve the correct optical resonator alignment.

To determine such correct alignment, it is necessary to use an alignment tool such as the **Model LHN-2CM, Helium-Neon Pointing Laser**. With the LHN-2CM and two target pinhole apertures that are included, the mechanical centerline of the optical resonator (and the YAG rod) can be established. Then alignment of the rest of the optical elements can proceed from this point.



**VISIBLE AND INVISIBLE  
LASER RADIATION**  
AVOID EYE OR SKIN EXPOSURE TO  
DIRECT OR SCATTERED RADIATION  
CLASS 4 LASER PRODUCT