

# Optical Meter and Use Of Same

Ref. 13-018

## THE TECHNOLOGY

## U.S. Patent Number 9,625,313

With this technology, high power laser beams from 1-kilowatt (kW) up to 140 kW (and beyond) can be measured accurately using optical radiation pressure. By shining a laser beam on a reflective surface and then measuring how much the surface moves in response to light's pressure, researchers can measure the laser's force (and therefore, its power) and use the light that bounces off the surface directly for manufacturing work. Through proper selection of materials, polishing, and coatings, the reflective surface can be tuned for the amount of reflection and wavelengths being measured.

## ACCURATE REAL-TIME EFFICIENT

The NIST Optical Meter eliminates the issue of depending on most of the optical power being absorbed by the sensor, which allows for the technology to obtain high-accuracy power monitoring during laser use.

The optical power is determined in real time while the radiation reflected from the optical meter is available for use.

This technology can be used directly for applications like cutting and welding.

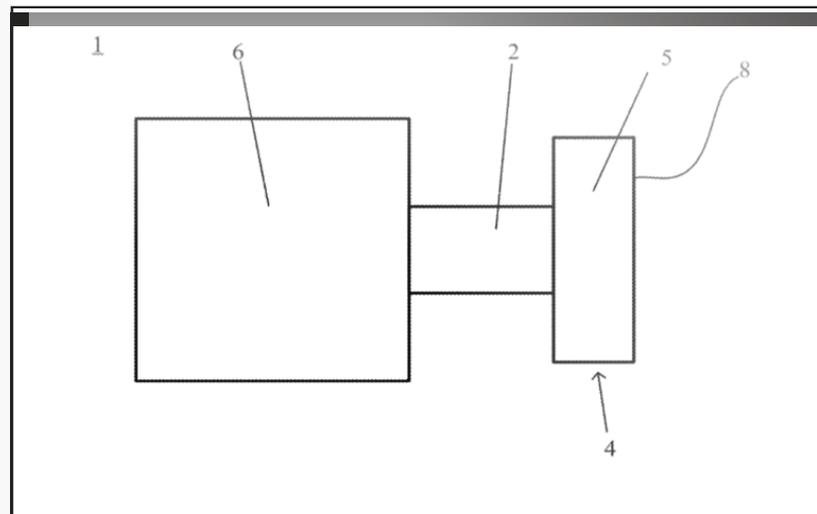
## BENEFITS

Fast characterization of optical power

Optical power determined in real time

Does not rely on absorption of radiation

Low cost



Optical meter **1** includes reflector **4** disposed force member **2**. Reflector **4** is configured to receive radiation and to communicate a pressure of the radiation to force member **2**. Reflector **4** includes substrate **5** and reflective surface **8**. Force member **2** is configured to be displaced in response to receiving the force comprising the pressure, and optical meter **1** is configured to measure a power of the radiation, an energy of the radiation, or a combination thereof based on the pressure.

## CONTACT

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