

# OPTICAL PYROMETERS

3T is justifiably considered the world leader in the measurement, recording, and control of temperatures, for the light metal extrusion industry. The high-tech remote optical pyrometers produced by this Israeli company consistently measure real temperatures with a guaranteed accuracy of 1%, despite changing emissivity, and ambient interference of dust or smoke between the pyrometer and the target subject.

Once extrusion begins, achieving and maintaining maximum productivity depends to a large extent on controlling temperatures.

The aim of every extruder is isothermal extrusion – preserving a constant exit temperature – that will result in optimal press speed at all times. An effective way to accomplish this is by continually and accurately measuring the press exit temperature, and using this information to control the press speed. The exit temperature can thus be kept just below the critical point where the surface of the extrusion begins to deteriorate.

Another location where temperature measurement and control is necessary for maximum productivity is at the billet furnace exit, or just before billet loading. This benefits the extruder by ensuring that extrusion begins with the billet at optimal temperature for maximum press speed. It prevents a billet that is too hot or too cold from entering the press.

The third area where accurate temperature measurement and control is profitable for the extruder, is at the run-out or cooling table. Here, close control of the rate of cooling improves the mechanical properties of the extruded product.

Here are the 3T Pyrometers most commonly used by light metal extruders:

<b>Press Exit</b>	<b>AE 3000 - Profile</b>
<b>Billet Heater</b>	<b>AB 3001 - Billet</b>
<b>Post Quench</b>	<b>AC 3002 - Profile Cooling</b>
<b>Die</b>	<b>AD 3003 - Extrusion Die</b>

NOTE: All pyrometers are 100% functional as delivered. No calibration is necessary to get true and reliable temperature data.

### 3T Scanning System

The new 3T scanning system automatically tracks moving targets, relocating the system camera at the point of highest temperature across the target. This ensures a continuous, reliable, signal reading of temperature measurement.



### System Approach, 3T's CA2000 System

Aluminum extrusion process lines are both versatile and complex. Collecting, tracking and storing multiple process parameters is a challenge. Extrusion lines may include a number of peripheral devices including limit switches, simple valves, handling equipment and measuring devices, as well as other advanced devices which are integrated into press peripherals. These include PLC's, closed loop devices, infrared non-contact pyrometers, PCs, and software for production scheduling and data collection.

Today's single station systems record information at individual points. 3T is the first company to provide a cost-effective integrated system that provides multi-station monitoring. The CA2000 System features continuous recording and storage of information that can be used for process optimization and quality control.

The 3T CA2000 System's open architecture allows the user to modify and customize the basic configuration. The extruder can add, delete, or change parameters, variables, signals and graphics.

Increased productivity is assured by greater control of the extrusion production process. This results from continuous and accurate temperature measurement. The seminal research and development work done by 3T in the field of remote optical pyrometry, is unmatched in this specialized technology.



EXTRUSION