

Following a programme of intense research and reformulation trials, we are delighted to launch the completely requalified, new generation of Bullers Process Control Discs (BPCDs) – an essential tool for high-performance pyrometric measurement.

### Advanced Manufacturing

At Mantec Technical Ceramics, we employ world-class manufacturing techniques to produce our discs to a precise specification that is necessary for consistent performance. Every batch of raw materials in our factory is pretested to exacting standards before being released into our sophisticated ISO 9001:2008 accredited production process.

Mantec's BPCDs have been designed so that they are suitable for any type of kiln or furnace and, due to their practical size, can be conveniently positioned in almost any location. There are five different types, all 20mm in diameter and 5mm thick, covering applications across a 1000°C temperature range.

These five options have overlapping operating parameters, and we believe they are the most flexible and cost efficient pyrometric measurement devices available today.



Temperature Range		Colour Code
Very Low Temperature	770°C - 950°C (1420°F - 1740°F)	Green
Low Temperature	900°C - 1150°C (1650°F - 2100°F)	Pink
Medium Temperature	1050°C - 1320°C (1920°F - 2410°F)	Yellow
High Temperature	1250°C - 1550°C (2280°F - 2820°F)	Blue
Very High Temperature	1500°C - 1770°C (2730°F - 3220°F)	White

## What are BPCDs?

BPCDs are specially formulated ceramics with closely defined specifications. They operate within a full range of temperatures from 770°C (1420°F) right up to 1770°C (3220°F). They provide the basic information needed to maintain consistent, accurately controlled and reproducible firing and sintering conditions.

BPCDs are therefore an essential part of any Quality Assurance system within the world of thermal treatments. The most common applications for our current product range are in the processing of:

- Technical Ceramics
- Single & Multi-layer Capacitors
- Semiconductors
- Ferrites
- PM Components
- Insulators
- Refractories
- Grinding Wheels

## How are BPCDs used?

Ideally, BPCDs are placed across a number of locations in all types of kiln, furnace or similar laboratory and full production sintering systems. Positions will vary, especially between continuous and intermittent processes, but the aim is to build up an accurate picture of overall heat distribution. It only requires a relatively short time to measure and record the BPCD data.

They can be used to increase your yields, while early notification of under-fired or over-fired products allows you to refire to the correct quality, eliminating scrap while maintaining capacity and profitability. Only Heat Work measuring and monitoring will allow you to understand what has happened to the product during thermal cycling, independently of time and temperature.

## Giving You the Edge

All in all, BPCDs offer a rapid and low-cost method of mapping Heat Work and Heat Energy in your process. Heat Work conditions in any firing/sintering situation must be uniform, measurable and reproducible – and BPCDs are by far and away the most cost efficient, consistent, reliable and user-friendly solution. These discs are manufactured in the UK under strictly monitored conditions, are small and lightweight, and are conveniently packaged and easily stored. Speak to our specialist team today and get peace of mind and profit protection.

## What is 'Heat Work'?

Heat Work is the action and effect of temperature over time on a product, often referred to as Heat Energy. Simply put, it is a defined measurement of the total heat energy effect on a product subjected to thermal processing. BPCDs allow you to understand the effect that variations in temperature, rate of firing, and length of soaking time have on the product and what action is required to prevent potential, costly problems.

