

PREHEAT TEMPERATURE

The Bullet R1 allows you to set a preheat temperature, and this is necessary for consistent results from roast to roast. Think of it as preheating the oven for a holiday turkey – you wouldn't expect the same results from a recipe using a different preheat temperature. Learning how to manipulate this variable is key to your roast. A higher preheat temperature will add more thermal energy to the drum, and that energy will heat more beans, more quickly.

Simply put: how high you set your preheat temperature will likely depend on how much coffee you plan to roast, and how quickly you plan to roast it.

General Recommendation:

For roasts under 500g, consider setting a preheat temperature of about 165 to 190c.

For roasts between 500-750g, consider setting a preheat temperature of 180 to 195c.

For roasts about 750g, the preheat temperature should be set at least 190c.

But, of course, feel free to experiment and learn!

POWER SETTING
(FROM 1 TO 9)

The Bullet R1 is a powerful machine, easily capable of pushing a full 1kg charge to first crack in under 10 minutes. But getting to the finish line as quickly as possible is not the goal -- if it was, there would only be one power level on the Bullet, the highest.

Instead, there are nine. This is because roasting at different power levels for different durations will create different flavors, and being able to manipulate power is crucial to bringing out particular tasting notes. There are many strategies for adjusting power during the course of the roast. These strategies are influenced by the preheat temperature and the amount of beans, as well as the desired shape of the roast profile for a particular bean.

In general, smaller batch sizes will require less energy and therefore less power than bigger batches. And as the roast continues through its different stages, most users will slowly reduce the power level to slow down the speed at which the beans roast.

General Recommendation:

Commonly users will begin with a higher power setting (P8, for instance) and then begin slowly dropping the power as the roast continues. For charges of less than 350g, you may want to begin on P6. For a 500g batch, P7 may be more appropriate. 750g on P8. 1000g should begin with P9.

FAN SPEED
(FROM 1 TO 9)

The effects of fan speed on roasting are complex. At lower (1-4) settings, boosting the fan speed can actually increase convection heating and quicken the roast. But as the fan settings move higher (5-9), more cool air is introduced into the drum, allowing the user to put the brakes on a roast that is moving too quickly.

General Recommendation:

Oftentimes, users will begin with a lower fan setting (1-3) and gradually raise it over the course of the roast, though it is rarely necessary to use the fan at full power. But you are, of course, free to experiment.

The Roast Times Special Insert

How to Begin
Roasting Great Coffee
on the Bullet R1



Roasting Basics

The roasting process itself is incredibly complex, involving thousands of chemical reactions, and even slight differences between roasts of the same bean can result in big flavor differences in the cup.

There are two key events during the roasting process that you need to be aware of before beginning. They are marked by cracking sounds similar to the sound of popcorn popping. “First crack” occurs when the moisture within the coffee turns to steam and builds up enough pressure to escape. “Second crack” occurs as the coffee bean structure itself begins to collapse.

A very light roast will end as first crack begins, and any roast taken beyond second crack will be quite dark. Most specialty coffee roasts will end somewhere between first and second crack.



Bullet R1 Basics

The Bullet R1 is a coffee roasting machine designed in Denmark and built in Taiwan. It plugs into any standard electrical outlet and relies solely on inductive heating to roast, with a capacity of up to one full kilogram per batch. Preheat, power, fan speed, and drum speed settings can all be adjusted and fine tuned according to the user's needs. When a roast is complete, the user will “drop” the beans into the cooling tray, where a fan will suck away heat and put an end to the roasting process.

The machine also comes with free, proprietary “profiling” software known as RoasTime, which will graph bean temperature over time and provide other important data-based insights into your roast.

The completed “roast profile” is an important window into what happened during a particular roast. The RoasTime software also directly interfaces with RoastWorld, a website that allows users to share profiles and other roasting experiences.

THE NEW INFRARED PROBE

Aillio has developed a new way to measure bean temperature using infrared technology that works quite differently than traditional bean probes. These infrared sensors give instantaneous readings of bean surface temperature that are consistent across batch sizes, which means their data is more useful. The Bullet R1v2 (version 2) will ship with these sensors pre-installed alongside the traditional bean probe, while owners of the original Bullet R1 will be given a chance to upgrade cheaply.

General Recommendation:

For reasons mentioned above, the infrared bean sensor is a powerful tool. Because the readings will be quite different at first, you will need to roast as you normally would using the traditional bean probe while simultaneously observing the new curve of the new infrared sensors. With a bit of practice, you will likely be focusing more on the infrared readings to reach your roast goals.

RATE OF RISE

One key variable that many users will want to pay attention to is the RoR, or “Rate of Rise”. This is simply a measure of how quickly the beans are heating at any given moment. When graphed on a roast profile, in most roasts, it should continually decline over time, until it is slowed down significantly by the end of the roast. One can control RoR by adjusting the Power and Fan settings during the roast.

General Recommendation:

It is a good idea to shoot for a declining RoR throughout the roast, but be careful not to “stall” the roast with an RoR below 0 for very long. Doing so may produce undesirable flavors in the cup.

PUTTING IT ALL TOGETHER

A roast recipe will take into account all of the information provided here.

An example may look something like this:

- Bean Type: Ethiopian Natural
- Roast Level: Very Light (For Filter Coffee)
- Weight: 500 grams
- Preheat: 200c
- Charge Settings: Power 7, Fan 2, Drum 9
- Bean Temp@150c: Power 6, Fan 3
- Bean Temp@160c: Power 5
- Bean Temp@165c: Fan 4
- Bean Temp@170c: Power 4
- Bean Temp@180c: Power 5 Fan 5

Drop Time:

Continue to Roast Until 30 seconds after First Crack begins, then drop. Shoot for an RoR of around 3-5c by the end of the roast.

GOING FURTHER

Connecting with other Bullet users is perhaps the best way to get the most out of your Bullet R1 experience. The Roast.World platform provides a space to do just that. You can view, comment on, download, and automatically playback the roast profiles of other users, and even find suppliers for particular green beans.

The built-in Roasts Analyzer will also allow you to compare your roasts, or the roasts of others, to each other. The more information users share, the better our coffee will become.

Introducing ***The Bullet R1v2***



You Really Can Teach an Old Dog New Tricks.

Version 2 of the Bullet R1 with Brand New Infrared Bean Temperature Sensor

Everything you asked for, and more.

Upgrade Kit for Bullet R1v1 Owners Available Soon!