**Table 5 - Extruded Filament Length at Varying Speeds**

**Data**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| MELT | DRIVE | DIAMETER | ORIFICE | MATERIAL | TEMP | LENGTH |
| Volcano | Direct | 3.00 mm | 1.2 mm | ABS | 240 C | 50 mm |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Speed (mm/min)** | **Trial 1** | **Trial 2** | **Trial 3** | **Trial 4** | **Trial 5** | **Trial 6** | **Trial 7** | **Trial 8** | **Deviation**  **Measurement** |
| **50** |  |  |  |  |  |  |  |  |  |
| **75** |  |  |  |  |  |  |  |  |  |
| **100** |  |  |  |  |  |  |  |  |  |
| **125** |  |  |  |  |  |  |  |  |  |
| **150** |  |  |  |  |  |  |  |  |  |
| **175** |  |  |  |  |  |  |  |  | 65.187 |
| **200** |  |  |  |  |  |  |  |  | 21.517 |
| **225** |  |  |  |  |  |  |  |  | 18.277 |
| **250** |  |  |  |  |  |  |  |  |  |
| **275** |  |  |  |  |  |  |  |  |  |
| **300** |  |  |  |  |  |  |  |  |  |
| **325** |  |  |  |  |  |  |  |  |  |
| **350** |  |  |  |  |  |  |  |  |  |
| **375** |  |  |  |  |  |  |  |  |  |
| **400** |  |  |  |  |  |  |  |  |  |

**Observations:**

* Deviations in form of blob
* 175: First sign of blobs, 1 blob in all 8 trials
* 200: Around 3 blobs
* 225: Blobs affect power accumulation

**Specifications:**

* 3.00 mm Octave Yellow ABS @ 240
* 1.2mm E3D Volcano nozzle
* Spring Tension: (~58.70 mm for 3mm) (~58.90 mm for 1.75mm)

**Failure Mode:**

* 1: Best extrusion
* 2: Grinding Noise, skipping (minor)
* 3: Severe grinding, motor moves very slow(major)
* X: Complete failure, does not extrude at all (fail)