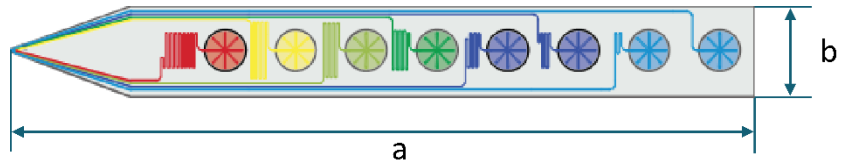


BioPen Longer Tip Specifications

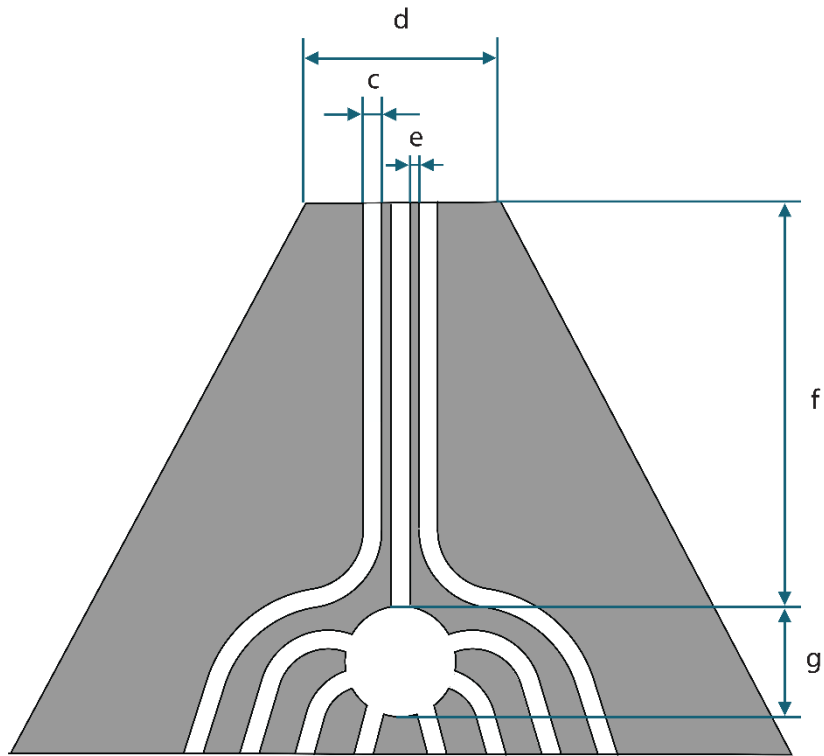
| BioPen tip parameters | |
|---------------------------------------|------------------------|
| Length | 67.5 mm (a) |
| Width | 10 mm (b) |
| Number of deliverable solutions | 4 |
| Reservoir volume | 35 μ L |
| Tip width | 450 μ m (c) |
| Channel size | 30*30 μ m (d) |
| Channel-channel separation at the tip | 15 μ m (e) |
| Channel-bottom separation at the tip | 15 μ m |
| Distance from tip to switching point | 1.3 mm (f) |
| Switching point diameter | 150 μ m (g) |
| Exposure length | 40 (h)-150 (j) μ m |
| Exposure width | 90 (i)-110 (k) μ m |
| Exposure volume | 0.1-1 nL |

| Flow setting parameters | | |
|----------------------------|----------|-------|
| State | Standard | Sleep |
| P _{on} (mbar) | 215 | 0 |
| P _{off} (mbar) | 30 | 11 |
| V _{switch} (mbar) | -135 | -55 |
| V _{recirc} (mbar) | -135 | -55 |

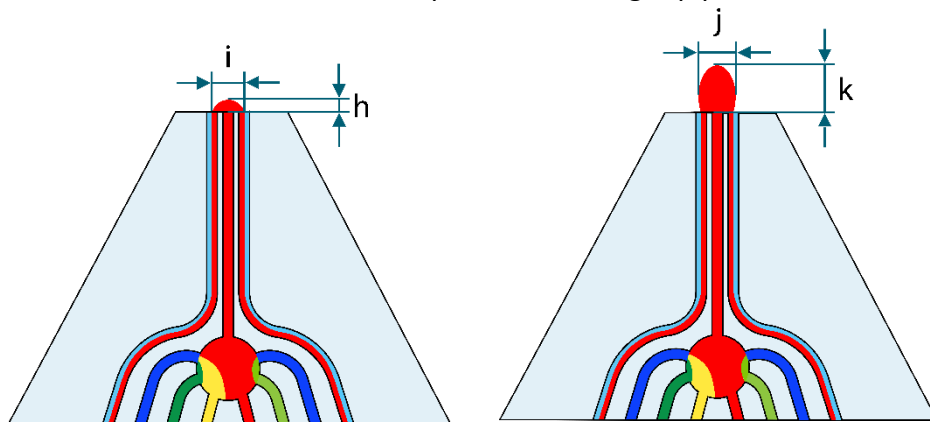
| Tip run time | | | |
|--------------------------------|---------------------------|----------|-------|
| State | | Standard | Sleep |
| Based upon waste wells filling | Flow rate (nL/s) | 14 | 6 |
| | Duration (min) | 80 | 195 |
| Based upon solution usage | Duration in Active (min) | 50 | - |
| | Duration in Standby (min) | 310 | 880 |



Schematics of BioPen longer pipette



Schematics of the tip of BioPen longer pipette



BioPen longer pipette exposure zone size