1. Introduction

This user manual explains how to operate the Dataplate hotplate for baking steps of SU-8 films.

2. Login

- Login on “Z01 DataPlate” with CAE on zone 01 accounting computer.

3. Operation

- The hotplate uses its own controller with an extremely unintuitive language.

- Make sure the controller is turned on. If not, turn it on.

- The Dataplate can operate in two modes:
  - Fixed temperature mode
  - Programmed temperature mode, preferred for SU-8 bake steps.

  WARNING: Maximum hotplate temperature is 220°C.

1) “Fixed temperature” mode:

- The display shows the actual temperature.
- Users can change the temperature (button 1) and timers (buttons 4 or 5) settings by using the right combination of key presses.
  - Temperature: For 120°C setpoint, press:
  - Timer: For 15 minutes, press:

2) “Programmed temperature” mode:

- The “Programmed temperature” mode uses the same concept of key presses to edit the temperature profile program, but with much more complexity.
- Turn on the hotplate.
- Enter the program edition by pressing:
  - The “edit” status LED will turn ON. Step “00.” appears. At this step, pressing “CLR” will erase the complete program.
• Buttons “7” and “8” will cycle through the steps of the program.

  7  8

• At any steps other than “ 00.”, pressing “CLR” will erase the actual step.

• Each step of the program can set one of the four following parameters:
  o button “1” = temperature [°C]
  o button “4” = timer [hh:mm]
  o button “5” = timer [mm:ss]
  o button “8” = ramp speed [°/hour]

• Each step will have one of two different “functions” which will be toggled by pressing several times (before the parameter keys) on:
  o The function N° 1 is “SET”, the display symbol is “ |_ “: **Immediately set target value and continue to the next step.**
  o The function N° 2 = “WAIT UNTIL”, the display symbol is “ |_| “: **Continue to the next step when the target is reached.**

• Button “9” = HEATER OFF function

• When all program steps are entered correctly, users can go out of the edition mode with button “6”. The status LED will turn OFF.

  6

• The program is started by pressing “CLR” (outside of edition mode)

  CLR

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### 4. Program example: SU-8 GM1075 PEB

• Please find in the table below the recommended parameters from the SU-8 runcard for the GM1075 PEB step.

<table>
<thead>
<tr>
<th>Z1 / Accuplate</th>
<th>Segment 1: Ramp time: X min Temp.: Z °C; Step time: Y min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z1 / Dataplate</td>
<td>Segment 2: Ramp time: 90 min Temp.: 30°C; Step time: 0 min</td>
</tr>
<tr>
<td></td>
<td>Segment 3 -&gt; 5: NO INFLUENCE</td>
</tr>
<tr>
<td>Z</td>
<td>X is the time for the ramp up, Y is the bake time.</td>
</tr>
</tbody>
</table>

[Type: X, Y]
1040: 20 min, 15 min
1050: 20 min, 20 min
1060: 30 min, 30 min
1070: 40 min, 40 min
1075: 50 min, 60 min

Z is the bake temperature:
90°C for Si
85°C for float glass

1. Enter edition mode and erase the program:

  6

2. STEP “ 01. “ The starting temperature is 20°C and the first ramp is 50 minutes to go to 90°C (Si wafer) → ramp speed 84°/hour. The following buttons sets the ramp speed.

  ENT 8 8 4 ENT

Make sure the function is “ |_ “.

3. STEP “ 02. “ The ramp speed is fixed, we can start heating until we reach 90°C. The following buttons sets the heating ramp until 90°C.

  ENT ENT 1 9 0 ENT

Make sure the function is “ |_| “.

4. STEP “ 03. “ We reached 90°C and we want to wait 60 minutes at this temperature. The following sequence will do it.

  ENT ENT 5 6 0 ENT
5. **STEP “04.”** We want to ramp the temperature down from 90°C to 30°C in 90 minutes → ramp speed 45°/hour. The following buttons change the ramp speed to the new value.

   [ENT] [8] [4] [5] [ENT]

6. **STEP “05.”** We ramp down until 30°C with the following buttons.

   [ENT] [ENT] [1] [3] [0] [ENT]

7. **STEP “06.”** The bake profile is done, we stop the process with the special function HEATER OFF.

   [ENT] [9] [ENT]

8. Buttons “7” and “8” can be used to check all the steps.

9. Exit the edition mode with button “6”.