

Annex 1

Digital light Processing (DLP) printer, operation software and parameter

| Model<br>(Picture)                                                                 | Printer<br>Manufacturer,<br>Model     | Light source | Pixel<br>size x,y | Light<br>intensity | Operation Software       | Parameter<br>data set*                      | Curing<br>time | Slicing | Recommended<br>orientation angle<br>(degree) |
|------------------------------------------------------------------------------------|---------------------------------------|--------------|-------------------|--------------------|--------------------------|---------------------------------------------|----------------|---------|----------------------------------------------|
|    | Asiga Max                             | 385 nm       | ±62 µm            | 6.1 mW/cm²         | Composer 1.2.11          | Detax_Freeprint<br>crown_5                  | 2.15 s         | 50 µm   | 0-90                                         |
|    | Asiga Max 2                           | 385 nm       | ±62 µm            | 7.0 mW/cm²         | Composer 2.0.8           | Detax_Freeprint<br>crown_5                  | 2.0 s          | 50 µm   | 0-90                                         |
|    | Asiga PRO 4K                          | 385 nm       | ±56 µm            | 7.0 mW/cm²         | Composer 1.2.11          | Detax_Freeprint<br>crown_5                  | 2.0 s          | 50 µm   | 0-90                                         |
|    | Asiga Ultra                           | 385 nm       | ±50 µm            | 6.6 mW/cm²         | Composer 2.0.8           | Detax_Freeprint<br>crown_5                  | 2.1 s          | 50 µm   | 0-90                                         |
|    | Heygears<br>UltraCraft<br>A2D HD      | 385 nm       | ±42.5 µm          | 1.75 mW/cm²        | Heygears Cloud V4.3.7.6  | Detax Crown                                 | 3.0 s          | 50 µm   | 0-90                                         |
|    | Ivoclar<br>PrograPrint<br>PR5         | 385 nm       | ±25 µm            | 16 mW/cm²          | PrograPrint CAM 1.1.10.1 | DetaxFREEPRINT crown                        | 0.9 s          | 50 µm   | 0-90                                         |
|   | LuxCreo Fast-<br>Print.io             | 385 nm       | ±40 µm            | 6.0 mW/cm²         | LuxFlow v3.1.0.301229    | DETAX freeprint-crown                       | 2.15 s         | 50 µm   | 0-90                                         |
|  | Microlay Versus                       | 385 nm       | ±65 µm            | 4.3 mW/cm²         | Microform 1.0.3.7        | DETAX Freeprint Crown 385<br>50 micron v5.6 | 1.99 s         | 50 µm   | 0-90                                         |
|  | Rapidshape<br>D10+/D20+/<br>D30+/D40+ | 385 nm       | ±34 µm            | 2.0 mW/cm²         | Netfabb 2020             | DETAX freeprint-crown                       | 3.6 s          | 50 µm   | 0-90                                         |

\*The set of parameters includes all relevant material- and printer specific information

## Cleaning Equipment

| Cleaning unit<br>Manufacturer, Model | Cleaning process                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ivoclar PrograPrint Clean            | Clean the parts with isopropyl alcohol (purity $\geq 98\%$ ) for 3 minutes. Then thoroughly clean the openings, cavities and gap areas with compressed air.<br>The main cleaning is performed in a separate vessel with fresh isopropyl alcohol (purity $\geq 98\%$ ) for 2 minutes.<br>Prior to post-exposure, check the openings, cavities and gap areas for residues. Then blow off with compressed air. |
| Rapidshape RS wash                   | Use the following settings: DETAX Freeprint-crown<br>Prior to post-exposure, check the openings, cavities and gap areas for residues.<br>Then blow off with compressed air.                                                                                                                                                                                                                                 |
| Ultrasonic bath Bandelin Sonorex     | Clean the parts with isopropyl alcohol (purity $\geq 98\%$ ) for 1 minute. Then thoroughly clean the openings, cavities and gap areas with compressed air.<br>The main cleaning is performed in a separate vessel with fresh isopropyl alcohol (purity $\geq 98\%$ ) for 1 minute.<br>Prior to post-exposure, check the openings, cavities and gap areas for residues. Then blow off with compressed air.   |

## Light curing Equipment

| Light Curing unit<br>Manufacturer, Model | Curing process                                                                                                                                   |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Ivoclar PrograPrint Cure                 | Post curing A: Wavelength = 405 nm; Intensity = 45 %; Duration = 5 min<br>Post curing B: Wavelength = 460 nm; Intensity = 45 %; Duration = 5 min |
| LuxCreo ILCD                             | Program „PO2“                                                                                                                                    |
| NK Optik Otoflash G171                   | 2 x 2000 flashes under inert gas, turn around components after 2000 flashes                                                                      |
| NK Optik Otoflash 250/500                | 4000 flashes under inert gas @15 Hz                                                                                                              |
| Rapidshape RS cure                       | Use the following settings: DETAX Freeprint-crown                                                                                                |
| Rapidshape RS cure XL                    | Use the following settings: DETAX Freeprint-crown                                                                                                |

