

### 3.1.2 User Guide for Choosing the Optimum Beam Profiling System

| Laser Wavelength                 | Power      |            |            | Minimum Beam Size         |                 |                 |                 |                 |
|----------------------------------|------------|------------|------------|---------------------------|-----------------|-----------------|-----------------|-----------------|
|                                  | <100mW     | 100mW-100W | >100W      | <20µm                     | >20 <50µm       | >50µm           | >500µm          | >1mm            |
| UV-Vis                           | NS-Si      | NS-Pyro    |            | NS-Si/3.5/1.8             | NS-Si/9/5       | NS-Si/9/5       | NS-Si /9/5      | NS-Si /9/5      |
|                                  | SP920s     | SP920s     | NS-Pyro    |                           | NS-Pyro/9/5     | NS-Pyro/9/5     | NS-Pyro/9/5     | NS-Pyro/9/5     |
|                                  | SP920G     | SP920G     |            |                           |                 | SP920G          | SP920G          | SP920G          |
|                                  | LT665      | LT665      | SP920s     |                           |                 | SP920s          | SP920s          | SP920s          |
|                                  |            | LT665      |            |                           | LT665           | LT665           | LT665           | LT665           |
| NIR 1000-1100nm                  | NS-Ge      | NS-Pyro    | BW         | NS-Ge/3.5/1.8             | NS-Ge/9/5       | NS-Ge/9/5       | NS-Ge/9/5       | NS-Ge/9/5       |
|                                  | SP920s     | SP920s     | NS-Pyro    |                           | NS-Pyro/9/5     | NS-Pyro/9/5     | NS-Pyro/9/5     | NS-Pyro/9/5     |
|                                  | LT665      | LT665      | SP920s     |                           |                 | SP920s          | SP920s/SP907    |                 |
| Industrial & Additive Fiber      | BC         | BC         | BC, BW     |                           | BC              | BC, BW          | BC, BW          | BC              |
|                                  | Pyrocam    | Pyrocam    |            |                           |                 |                 |                 | Pyrocam         |
| CO2                              | NS-Ge      | NS-Pyro    |            | NS-Ge/3.5/1.8             | NS-Ge/9/5       | NS-Ge/9/5       | NS-Ge/9/5       | NS-Ge/9/5       |
|                                  |            |            | NS-Pyro    |                           | NS-Pyro/9/5     | NS-Pyro/9/5     | NS-Pyro/9/5     | NS-Pyro/9/5     |
| Telecom and Eye-Safe 1100-1800nm |            |            |            |                           |                 | SP1203          | SP1203          | SP1203          |
|                                  |            |            |            |                           |                 | SP1201          | SP1201          | SP1201          |
|                                  |            |            |            |                           |                 | XEVA            | XEVA            | XEVA            |
|                                  | Pyrocam    | Pyrocam    | Pyrocam    |                           |                 |                 | Pyrocam         | Pyrocam         |
| 1500-1600nm                      | NS-Ge      | NS-Ge      | NS-Ge      | NS-Ge/3.5/1.8             | NS-Ge/9/5       | NS-Ge/9/5       | Pyrocam         | NS-Ge/9/5       |
|                                  |            |            |            |                           |                 |                 | SP1203          | SP928-1550      |
|                                  |            |            |            |                           |                 |                 | SP1201          | SP1203          |
|                                  | SP928-1550 | SP928-1550 | SP928-1550 |                           |                 | SP928-1550      | XEVA            | SP1201          |
|                                  | LT665-1550 | LT665-1550 | LT665-1550 |                           |                 | LT665-1550      | SP928-1550      | XEVA            |
|                                  |            |            |            |                           |                 |                 | LT665-1550      | LT665-1550      |
|                                  | Pyrocam    | NS-Pyro    |            | Pyrocam w/ Beam Expansion | NS-Pyro/9/5     | NS-Pyro/9/5     | NS-Pyro/9/5     | NS-Pyro/9/5     |
| MIR & FIR                        |            | Pyrocam    | NS-Pyro    |                           | NS-Pyro/9/5-MIR | NS-Pyro/9/5-MIR | NS-Pyro/9/5-MIR | NS-Pyro/9/5-MIP |
|                                  |            |            | Pyrocam    |                           |                 |                 | Pyrocam         | Pyrocam         |

Abbreviations:

|               |                       |            |                           |           |           |
|---------------|-----------------------|------------|---------------------------|-----------|-----------|
| <b>FIR</b>    | Far Infrared          | <b>NIR</b> | Near Infrared             | <b>BC</b> | BeamCheck |
| <b>Ge</b>     | Germanium             | <b>Si</b>  | Silicon                   | <b>BW</b> | BeamWatch |
| <b>HP</b>     | High Power            | <b>SP</b>  | Indicates camera profiler |           |           |
| <b>MIR</b>    | Mid-Infrared          | <b>NS</b>  | NanoScan                  |           |           |
| <b>UV-Vis</b> | Ultraviolet - Visible |            |                           |           |           |

| Laser Wavelength                 | Minimum Beam Size | CW or Pulsed |         |                           | Customer Priority |              |             |             |           |         |             |
|----------------------------------|-------------------|--------------|---------|---------------------------|-------------------|--------------|-------------|-------------|-----------|---------|-------------|
|                                  |                   | >5mm         | >10mm   | CW                        | Pulsed <1kHz      | Pulsed >1kHz | Cost        | 2D/3D       | No optics | Speed   | Ease of use |
| UV-Vis                           | Pyrocam           | NS-Pyro      |         | Pyrocam w/ Beam Expansion | NS-Pyro/9/5       | NS-Pyro/9/5  | NS-Pyro/9/5 | NS-Pyro/9/5 | NS        | NS      | NS          |
|                                  |                   | Pyrocam      | NS-Pyro |                           |                   |              | Pyrocam     | Pyrocam     |           |         |             |
|                                  |                   |              | Pyrocam |                           |                   |              |             |             |           |         |             |
|                                  |                   |              | NS      | SP920s                    | SP920s            | SP920s       | SP920s      | SP920s      | NS        | NS      | NS          |
| NIR 1000-1100nm                  | BW                |              | SP920s  | LT665                     | NS                |              | LT665       | BW          |           |         |             |
|                                  | LT665             | L11059       | LT665   |                           | LT665             |              |             |             |           |         |             |
|                                  |                   | LT665        | BW      |                           |                   |              |             |             |           |         |             |
| Industrial & Additive Fiber      | Pyrocam           | Pyrocam      | Pyrocam | Pyrocam                   | Pyrocam           | NS/Pyrocam   | Pyrocam     | NS/Pyrocam  | Pyrocam   | Pyrocam | Pyrocam     |
|                                  | CO2               |              |         |                           |                   |              |             | NS/Pyrocam  |           |         |             |
|                                  |                   |              |         | SP1203                    | SP1203            |              | SP1203      |             |           |         |             |
|                                  |                   |              |         | SP1201                    | SP1201            |              | SP1201      |             |           |         |             |
| Telecom and Eye-Safe 1100-1800nm |                   |              | NS      | XEVA                      | XEVA              | NS           | XEVA        | NS          | NS        | NS      | NS          |
|                                  |                   |              |         |                           | NS                |              | Pyrocam     |             |           |         |             |
|                                  | Pyrocam           |              |         |                           |                   |              |             |             |           |         |             |
| 1500-1600nm                      |                   |              |         |                           | NS                |              |             |             |           |         |             |
|                                  |                   |              |         |                           | SP1203            | SP1203       | SP1203      |             |           |         |             |
|                                  |                   |              |         |                           | SP1201            | SP1201       | SP1201      |             |           |         |             |
|                                  | SP928-1550        | LT665-1550   | XEVA    | XEVA                      | XEVA              | SP928-1550   | SP928-1550  | NS          | NS        | NS      | NS          |
|                                  | LT665-1550        |              |         | LT665-1550                | LT665-1550        |              | LT665-1550  |             |           |         |             |
|                                  |                   |              | NS      | Pyrocam                   | NS                | NS           | Pyrocam     | NS          | NS        | NS      |             |
| MIR & FIR                        | Pyrocam           |              | Pyrocam |                           | Pyrocam           |              |             |             |           |         |             |

Abbreviations:

|               |                       |            |                           |           |           |
|---------------|-----------------------|------------|---------------------------|-----------|-----------|
| <b>FIR</b>    | Far Infrared          | <b>NIR</b> | Near Infrared             | <b>BC</b> | BeamCheck |
| <b>Ge</b>     | Germanium             | <b>Si</b>  | Silicon                   | <b>BW</b> | BeamWatch |
| <b>HP</b>     | High Power            | <b>SP</b>  | Indicates camera profiler |           |           |
| <b>MIR</b>    | Mid-Infrared          | <b>NS</b>  | NanoScan                  |           |           |
| <b>UV-Vis</b> | Ultraviolet - Visible |            |                           |           |           |