



1.1.2.5 Medium Power Large Aperture Thermal Sensors - Apertures 65mm

1.1.2.5.1 Sensors for Intense Pulsed Light IPL

100mJ to 2000J

Features

- L50(300)A-IPL: Large aperture with glass for gel coupling
- L40(150)A-IPL: Designed for gel coupled sources
- L50(300)A-LP2-65: Large aperture and low angle dependence

L50(300)A-IPL



L40(150)A-IPL



L50(300)A-LP2-65



| Model                                                 | L50(300)A-IPL                                                       | L40(150)A-IPL                                               | L50(300)A-LP2-65                               |
|-------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------|
| Use                                                   | Gel and Air coupled IPL and laser sources                           | Gel coupled IPL sources and laser sources                   | Air coupled IPL and laser sources              |
| Absorber Type                                         | LP2 + coated window <sup>(a)</sup>                                  | LP2 + pyramid coupling to capture large output light angles | LP2                                            |
| Spectral Range $\mu\text{m}$                          | 0.5 - 1.3                                                           | 0.5 - 1.3                                                   | 0.25 - 2.2                                     |
| Absorption                                            | 86%                                                                 | 92%                                                         | >94% from 0.25 to 1.1 $\mu\text{m}$            |
| Aperture mm                                           | Ø65mm                                                               | 22x22mm <sup>(b)</sup>                                      | Ø65mm                                          |
| Power Mode                                            |                                                                     |                                                             |                                                |
| Power Range                                           | 400mW - 300W                                                        | NA                                                          | 400mW - 300W                                   |
| Maximum Intermittent Power                            | 300W for 2 min, 150W for 4.5min, 50W continuous                     | NA                                                          | 300W for 2min, 150W for 4.5min, 50W continuous |
| Power Scales                                          | 300W / 30W                                                          | NA                                                          | 300W / 30W                                     |
| Power Noise Level                                     | 20mW                                                                | NA                                                          | 20mW                                           |
| Maximum Average Power Density $\text{kW}/\text{cm}^2$ | 17 at 300W 50 at 50W                                                | NA                                                          | 17 at 300W 50 at 50W                           |
| Response Time with Meter (0-95%) typ. s               | 3                                                                   | NA                                                          | 3                                              |
| Calibration Uncertainty $\pm\%$                       | 1.9                                                                 | NA                                                          | 1.9                                            |
| Power Accuracy $\pm\%$                                | 6 for most gel or air coupled IPL sources                           | NA                                                          | 3 <sup>(e)</sup>                               |
| Linearity with Power $\pm\%$                          | 1                                                                   | NA                                                          | 1                                              |
| Energy Mode                                           |                                                                     |                                                             |                                                |
| Energy Range                                          | 120mJ - 1000J                                                       | 100mJ - 2000J                                               | 200mJ - 1000J                                  |
| Energy Scales                                         | 1000J / 600J / 60J / 6J                                             | 2000J / 600J / 60J / 6J                                     | 1000J / 600J / 60J / 6J                        |
| Minimum Energy mJ                                     | 120                                                                 | 100                                                         | 200                                            |
| Damage Threshold                                      | Maximum Energy Density $\text{J}/\text{cm}^2$                       | Maximum Energy J                                            | Maximum Energy Density $\text{J}/\text{cm}^2$  |
| <100ns                                                | 0.1                                                                 | 1                                                           | 0.1                                            |
| 1 $\mu\text{s}$                                       | 0.9                                                                 | 9                                                           | 0.9                                            |
| 0.5ms                                                 | 50                                                                  | 500                                                         | 50                                             |
| 2ms                                                   | 130                                                                 | 1300                                                        | 130                                            |
| 10ms                                                  | 400                                                                 | 2000                                                        | 400                                            |
| Energy Accuracy $\pm\%$                               | 8 for gel coupled source <sup>(c)</sup><br>5 for air coupled source | 8 for gel coupled source <sup>(c)</sup>                     | 5 for air coupled source <sup>(d)</sup>        |
| Cooling                                               | convection / ballistic                                              | convection / ballistic                                      | convection / ballistic                         |
| Weight kg                                             | 1.0                                                                 | 1.0                                                         | 0.9                                            |
| Compliance                                            | CE, UKCA, China RoHS                                                | CE, UKCA, China RoHS                                        | CE, UKCA, China RoHS                           |
| Version                                               | V1                                                                  |                                                             |                                                |
| Part number                                           | 7Z02780                                                             | 7Z02771                                                     | 7Z02782                                        |

Note: (a) Sensor has a window for gel coupled IPL sources where IPL source is coupled to window with gel or water for measurement. Can also measure air coupled IPLs.

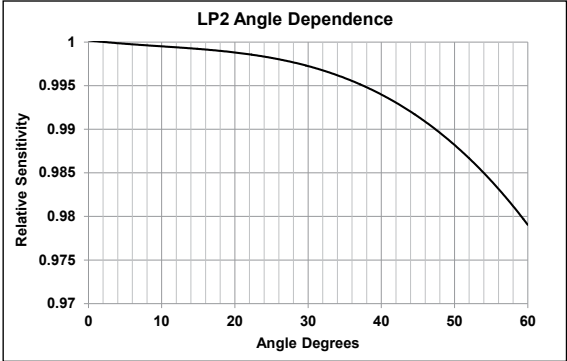
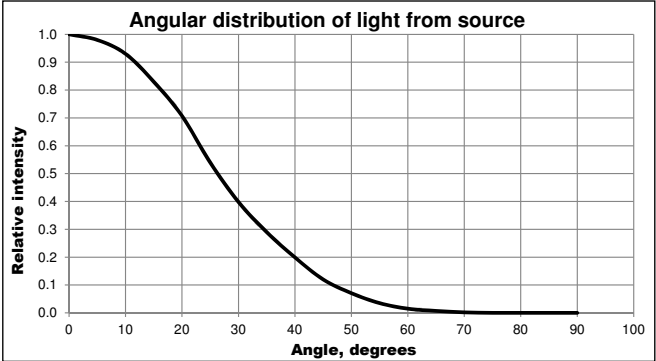
Note: (b) If the source is longer than the aperture, it can overfill and the output can be calculated proportionately.

Note: (d) Accurate measurement of air coupled sources due to low angular dependence of LP2 coating. See graph on page 71.

Note: (e) Above 1.1 $\mu\text{m}$  there is an additional calibration uncertainty of up to 2%.

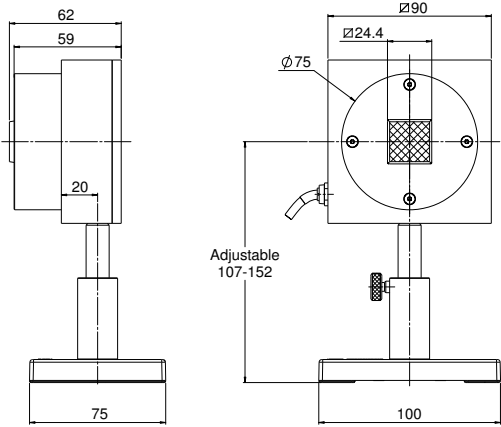
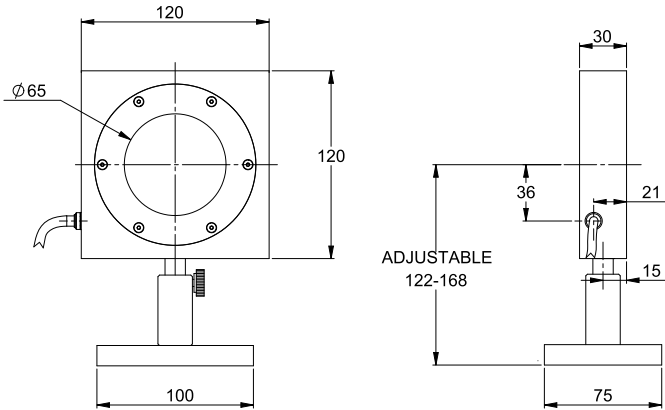
Note: (c) The assumed angular distribution of the IPL light is given below. The angle dependence of the LP2 coating is shown on page 71.

\* For drawings and graphs please see page 71



L50(300)A-IPL

L40(150)A-IPL



L50(300)A-LP2-65

