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# Liquid Light Guides



*Various Liquid Light Guides*

- Excellent throughput – large core diameters, no packing losses, high N.A.
- DUV models provide alternative to fibers for wavelengths down to 220 nm
- Single branch and bifurcated models

If you need high light throughput anywhere in the UV to NIR, our Liquid Light Guides are the smart choice. They are more efficient and less expensive than Fused Silica Fiber Bundles, and you don't have to worry about fiber breakage! We've expanded our line to include DUV light guides, which transmit down to 220 nm and bifurcated models for selected wavelength ranges.

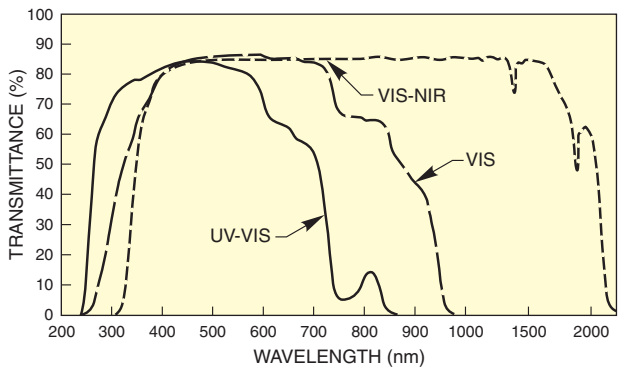



*Fig. 1 Typical transmittance of selected Liquid Light Guides*

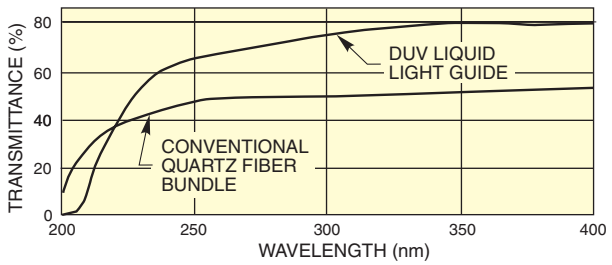



*Fig. 2 Typical transmittance of DUV Liquid Light Guides compared to conventional quartz*

## Bifurcated Models

For dual source applications, we offer bifurcated liquid light guides. The single end does not meet into a common circular core; the two cores are stacked in the common end (see Fig. 3). Each leg has an active core of 3 mm and a length of 39 or 79 inches (1 or 2 m). We can also supply trifurcated liquid light guides; contact us for details.



*Fig. 3 Front view of common end of a bifurcated liquid light guide. The end does not merge into a single circular core.*

## Large Acceptance Angles

The acceptance angle of our liquid light guides is significantly higher than for the fused silica fiber bundles described on page 252. This means you get significantly more throughput from the same core diameter. The geometrical extent (a measure of fiber optic light gathering capability) of a 3 mm diameter UV-VIS liquid light guide is 8.5 mm$^2$; that of a 3.2 mm diameter fused silica fiber bundle is 1.1, and that of a 3.2 mm diameter glass bundle is 7.6.

## Rugged Construction

These light guides are robust and long-lived in normal use. To ensure long life, the temperature at the input face should not exceed 40 °C. Also, the UV-VIS models should not be exposed to wavelengths shorter than 300 nm, the VIS models to 340 nm, and the VIS-NIR to 420 nm.

## Specifications

| | DUV Liquid Light Guides | UV-VIS Liquid Light Guides | VIS Liquid Light Guides | VIS-NIR Liquid Light Guides |
|---|---|---|---|---|
| Transmittance Range | 220 to 600 nm | 300 to 650 nm | 340 to 800 nm | 420 to 2000 nm |
| Numerical Aperture | 0.43 | 0.59 | 0.59 | 0.52 |
| F/# | 1.2 | 0.85 | 0.85 | 0.96 |
| Acceptance Cone, 2a | 50° | 72° | 72° | 62° |




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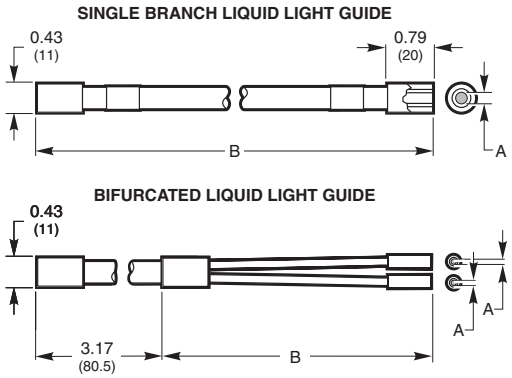



*Fig. 4 Dimensional diagram of liquid light guides*

# Ordering Information

## Single Branch Liquid Light Guides

| Liquid Light Guide Type | Core Diameter inch (mm) | Total Length Inch (m) (B) | Min. Bend Radius - inch (mm) | Model |
|---|---|---|---|---|
| DUV | 0.12 (3) | 39.4 (1) | 1.6 (40) | 76840 |
| | 0.12 (3) | 79.0 (2) | 1.6 (40) | 76841 |
| | 0.2 (5) | 39.4 (1) | 2.4 (60) | 76842 |
| | 0.2 (5) | 79.0 (2) | 2.4 (60) | 76843 |
| UV-VIS | 0.12 (3) | 39.4 (1) | 1.6 (40) | 77554 |
| | 0.12 (3) | 79.0 (2) | 1.6 (40) | 77555 |
| | 0.2 (5) | 39.4 (1) | 2.4 (60) | 77556 |
| | 0.2 (5) | 79.0 (2) | 2.4 (60) | 77557 |
| | 0.3 (8) | 39.4 (1) | 3.9 (100) | 77628 |
| | 0.3 (8) | 79.0 (2) | 3.9 (100) | 77629 |
| VIS | 0.12 (3) | 39.4 (1) | 1.6 (40) | 77566 |
| | 0.12 (3) | 79.0 (2) | 1.6 (40) | 77567 |
| | 0.2 (5) | 39.4 (1) | 2.4 (60) | 77568 |
| | 0.2 (5) | 79.0 (2) | 2.4 (60) | 77569 |
| | 0.3 (8) | 39.4 (1) | 3.9 (100) | 77631 |
| | 0.3 (8) | 79.0 (2) | 3.9 (100) | 77632 |
| VIS-NIR | 0.12 (3) | 39.4 (1) | 1.6 (40) | 77634 |
| | 0.12 (3) | 79.0 (2) | 1.6 (40) | 77635 |
| | 0.2 (5) | 39.4 (1) | 2.4 (60) | 77636 |
| | 0.2 (5) | 79.0 (2) | 2.4 (60) | 77637 |
| | 0.3 (8) | 39.4 (1) | 3.9 (100) | 77638 |
| | 0.3 (8) | 79.0 (2) | 3.9 (100) | 77639 |

## Bifurcated Liquid Light Guides

| Type | Leg Core Diameter - inch (mm) (A) | Leg Length - inch (m) (B) | Common Length - inch (mm) | Model |
|---|---|---|---|---|
| DUV | 0.12 (3) | 39.4 (1) | 3.17 (80.5) | 76844 |
| | 0.12 (3) | 79.0 (2) | 3.17 (80.5) | 76845 |
| UV-VIS | 0.12 (3) | 39.4 (1) | 3.17 (80.5) | 76846 |
| | 0.12 (3) | 79.0 (2) | 3.17 (80.5) | 76847 |
| VIS | 0.12 (3) | 39.4 (1) | 3.17 (80.5) | 76848 |
| | 0.12 (3) | 79.0 (2) | 3.17 (80.5) | 76849 |

WEB *See our website for more info*


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