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# Endolume Parts Overview

## How to test the various components of your endoscopic system

The EndoLume allows you to test the light output and transmission of the various components of your endoscopic system.

When testing components it is necessary to first test the "input" and then test the "output." For example, to test a light guide you must first get a recording from a light source. Then test the light guide and divide the output (light guide) by the input (light source). The resulting number is the percentage of light the component is transmitting.

Integrating Sphere



Sphere Adapter



Clamp



## Storz Adapters

Storz Scope Adapter



Storz Light Source Adapter



Storz Light Guide Adapter



## Wolf & ACMI Adapters

ACMI Scope Adapter



Wolf | ACMI Light Source Adapter



Wolf Scope Adapter



## Olympus Adapters

Olympus Light Source Adapter



## Optical Bridge

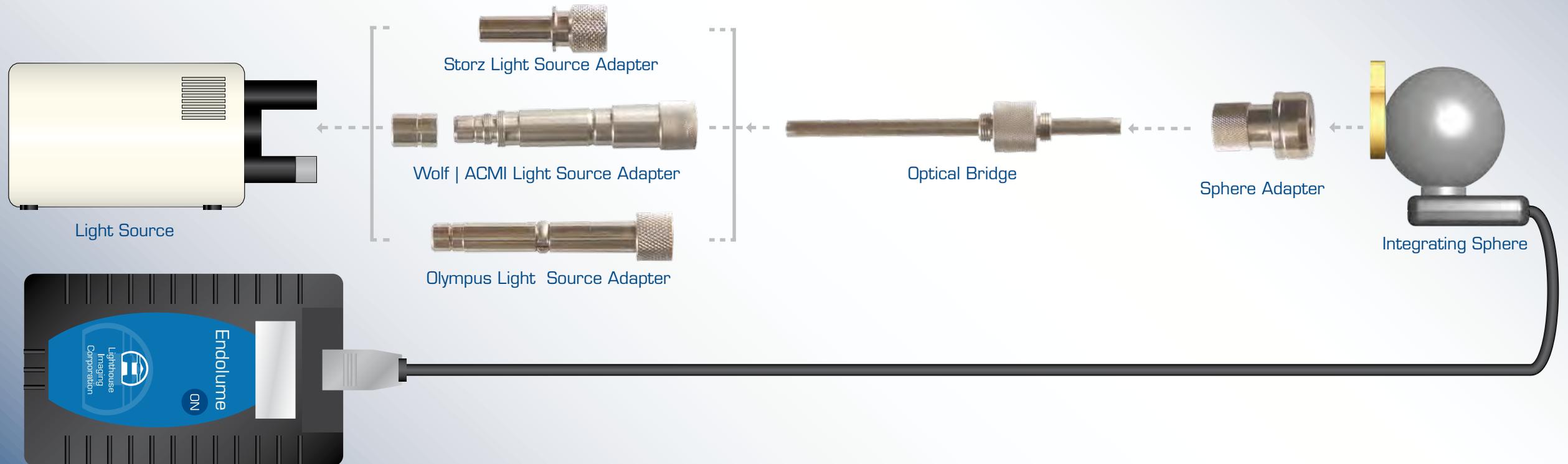


# Test a Light Source

1. Attach a light source adapter to the long end of the optical bridge. If the light source has a turret port use any of the light source adapters provided. Either the Storz or Olympus adapter are recommended because their longer engagement length provides a more stable connection.
2. Attach the integrating sphere adapter to the short end of the optical bridge.
3. Attach the optical bridge to the integrating sphere.
4. Plug the integrating sphere assembly into the light source output port.
5. Press and release the ON button of EndoLume.
6. With the intensity control of the light source at maximum, read and record the lumen value displayed on the EndoLume.

## Example

Typical Reading:  
300w Xenon= 1800 Lumens



# Test a Light Guide

1. Attach the light guide adapter corresponding to the light guide's manufacturer to the long end of the optical bridge.
2. Attach the integrating sphere adapter to the short end of the optical bridge.
3. Attach the optical bridge to the integrating sphere.
4. Plug the light source end of the light guide into the light source.
5. Attach the endoscope end of the light guide to the optical bridge.
6. Press and release the ON button of EndoLume.
7. With the intensity control of the light source at maximum, read and record the lumen value displayed on the EndoLume.
8. To calculate the transmission of the light guide, divide this reading by the reading obtained when the light source was measured alone. Record the calculated value.

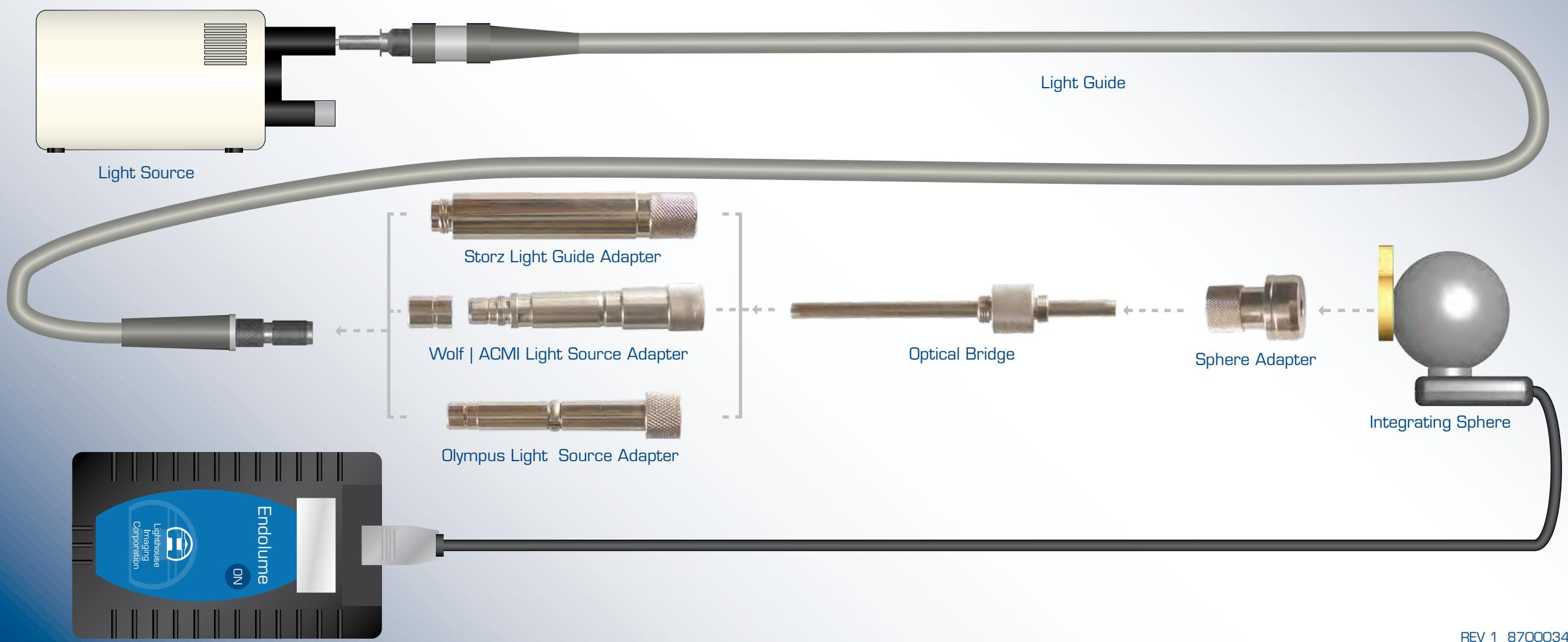
## Example

Output / Input = Component Efficiency

Divide the result of testing the light guide by the light source result. The resulting number is the percentage of component efficiency.

For example if a 300w Xenon light source is tested and has an output of 1800 lumens and a light guide attached to the light source has an output of 750 lumens then:

$$\frac{\text{output}}{\text{input}} = \frac{750}{1800} \times 100 = 41.6\%$$



# Test a Rigid Endoscope

1. Plug the light guide into the light source.

2. Attach the adapter corresponding to the light guide's manufacturer to the long end of the optical bridge.

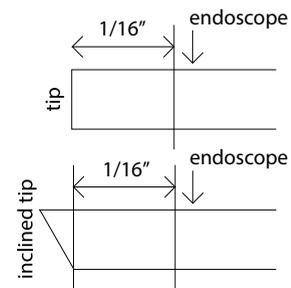
3. Attach the adapter corresponding to the endoscope's manufacturer to the short end of the optical bridge.

4. Attach the long end of the optical bridge to the instrument end of the light guide.

5. Plug the short end of the optical bridge onto the sidearm of the endoscope.

6. Slide the endoscope clamp (either side) over the tip of the endoscope by simultaneously depressing the two clamp tabs. The tip of the endoscope should extend just slightly, 1/16"

(1-2mm), out the opposite end of the endoscope clamp.



7. Attach the scope/endoscope clamp to the integrating sphere.

8. Press and release the ON button of EndoLume.

9. With the intensity control of the light source at maximum, read and record the lumen value displayed on the EndoLume.

10. To calculate the transmission of the endoscope, divide this reading by the reading obtained when the light guide was measured alone.

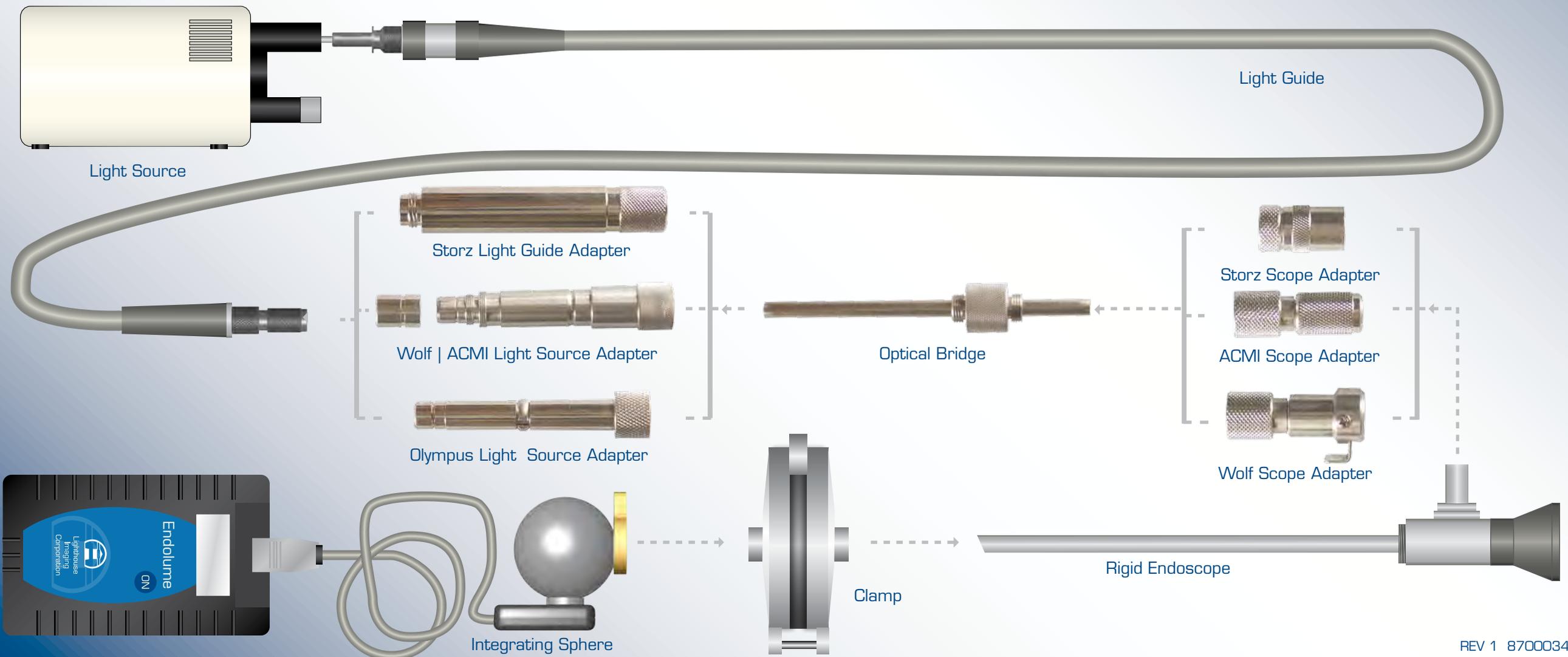
## Example

Output / Input = Component Efficiency

Divide the result of testing the endoscope by the light guide result. The resulting number is the percentage of light transmitted by the component.

For example if the output of a light guide using a 300w Xenon light source is 750 lumens and the output the endoscope attached to this guide is 250 lumens then:

$$\frac{\text{output}}{\text{input}} = \frac{250}{750} \times 100 = 33.3\%$$



# Test a Flexible Endoscope

1. Plug the light guide into the light source.

2. Attach the adapter corresponding to the light guide's manufacturer to the long end of the optical bridge.

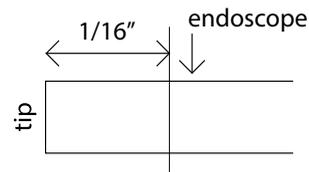
3. Attach the adapter corresponding to the endoscope's manufacturer to the short end of the optical bridge.

4. Attach the long end of the optical bridge to the instrument end of the light guide.

5. Plug the short end of the optical bridge onto the sidearm of the endoscope.

6. Slide the endoscope clamp (either side) over the tip of the endoscope by simultaneously depressing the two clamp tabs. The tip of the endoscope should extend just slightly, 1/16"

(1-2mm) out the opposite end of the endoscope clamp.



7. Attach the scope/endoscope clamp to the integrating sphere.

8. Press and release the ON button of EndoLume.

9. With the intensity control of the light source at maximum, read and record the lumen value displayed on the EndoLume.

10. To calculate the transmission of the endoscope, divide this reading by the reading obtained when the light guide was measured alone.

## Example

Output / Input = Component Efficiency

Divide the result of testing the endoscope by the light guide result. The resulting number is the percentage of light transmitted by the component.

For example if the output of a light guide using a 300w Xenon light source is 750 lumens and the output the endoscope attached to this guide is 250 lumens then:

$$\frac{\text{output}}{\text{input}} = \frac{250}{750} \times 100 = 33.3\%$$

