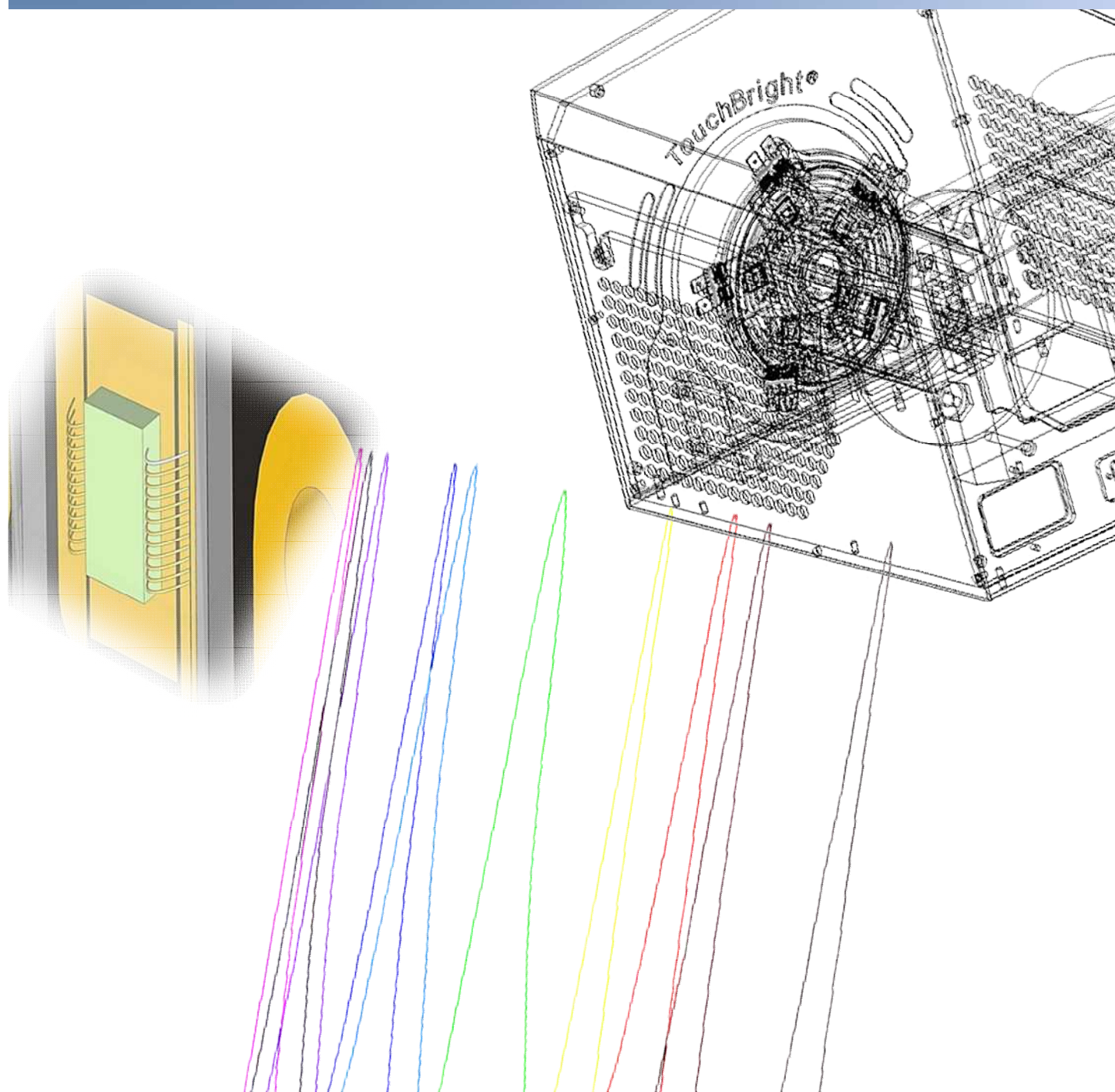


# TouchBright®

High-Performance LED Excitation System Ver. 7.51

Efficient Use  
Long Lifetime  
Brightest LEDs  
Compact Design  
High-Performance



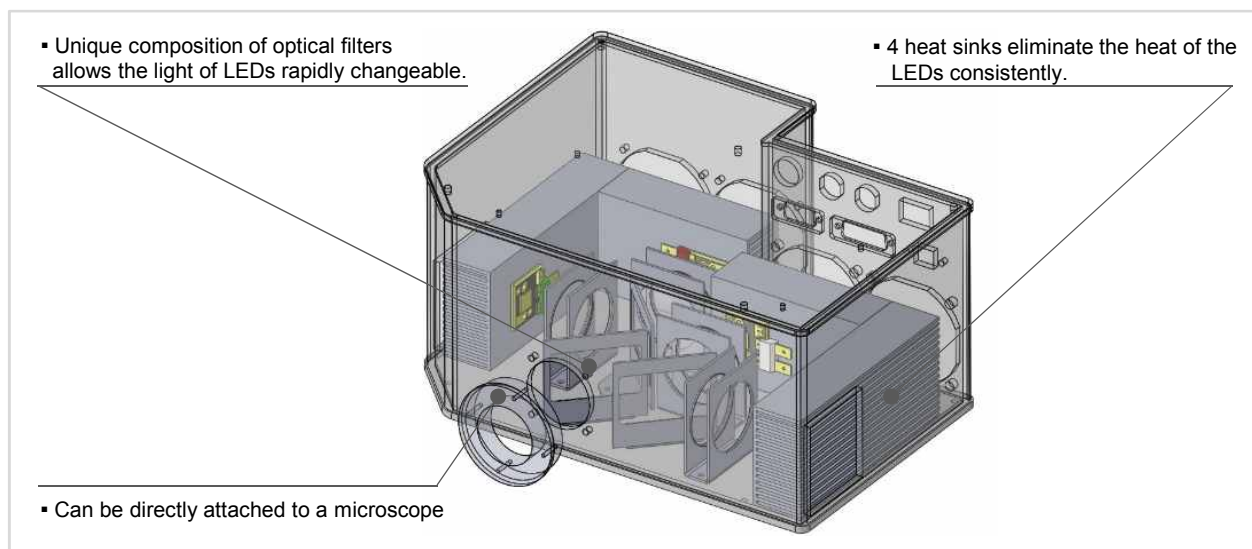
# TouchBright® X5

## High-Performance 5 LED-Excitation System



- TouchBright X5 Illumination System can be directly attached to the microscope without light guide which is caused decrease of the light. Enable to provide highest intensity of the light from LEDs.
- Through unique composition of optical filters, enable to rapidly change the colors of LEDs and turn on/off LEDs.
- 4 heat sinks eliminate the heat of the LEDs consistently.

- External white LED can be substituted for the halogen lamp which is used for transmitted image.
- UV, blue, green and red LEDs as standard, but changeable to other colors depending on user's request.
- Active air cooling system to sink the heat and to monitor the temperature constantly, enable to maintain constant highest intensity of the light from LEDs.



TouchBright X5, X6 illumination system can be used with all microscopes with a common software package. (e.g. TTL, Nikon-NIS, Metamorph and Micromanager or etc.)

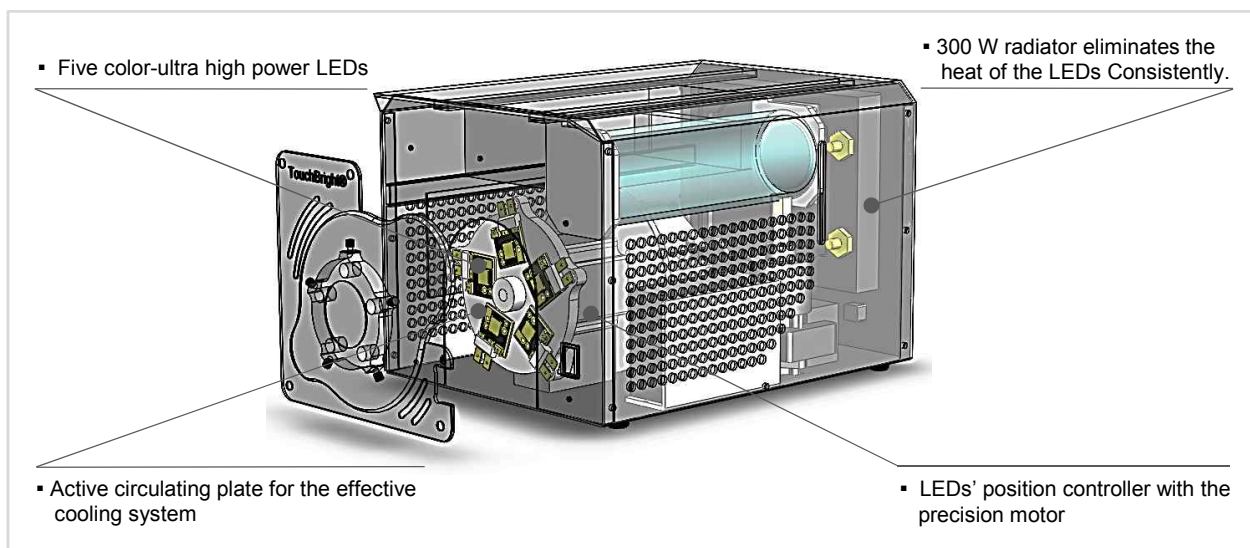
- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• <b>Brightest LEDs &amp; power stability</b></li> <li>• <b>Long lifetime</b></li> <li>• <b>Wide range of LED wavelengths</b></li> <li>• <b>External LED to substitute for the transmitted halogen lamp</b></li> </ul> | <ul style="list-style-type: none"> <li>• <b>No warm up and cool down</b></li> <li>• <b>0-100% intensity control</b></li> <li>• <b>No ND filter</b></li> <li>• <b>Touchscreen remote control pad</b></li> <li>• <b>Active cooling system (Patent pending)</b></li> </ul> |
|---|---|

# TouchBright® X6

## High-Performance 6 LED-Excitation System



- TouchBright X6 is designed to rotate five colors of the ultra-high power LED modules with a single fiber optic guide. No requirement to use optical filters for gathering different colors of lights which is caused decrease of light. Enable to provide highest intensity of the light from LEDs.
- UV, blue, green, red and amber as standard but changeable to other colors depending on user's request.
- Automatic turn on/off of 300W radiator and active water cooling system when the heat is beyond the limit.
- Using the multiple lights at the same time for a special purpose, TouchBright TMC can be combined with X6, which contains a combiner, collimators, and dichroic mirrors.(refer to page 6)



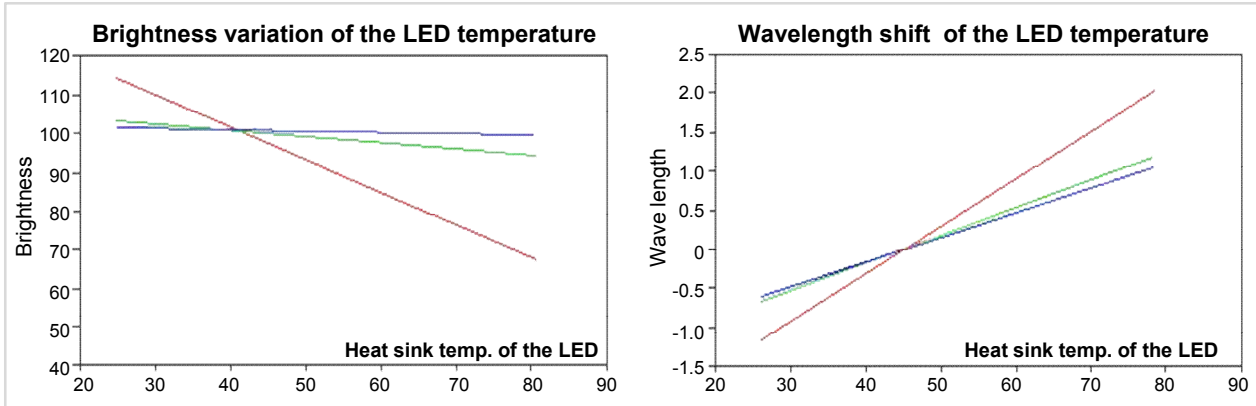
### Common Fluorescence

LED wavelength	Fluorescence
365 nm	DAPI, Fura-2, Alexa 350, Hoechst, Calcein blue, Indo-1, Qdot, AMCA
380 nm	DAPI, Fura-2, Hoescht, Qdot, BFP, Indo-1
470 nm	FITC, GFP, CFP, Alexa 488, CY2, Fluo3, Oregon Green
530 nm	Alexa 514, Alexa 532, Alexa 546, YFP, Rhodamine phalloidin, RFP, mCherry
560nm (white)	Texas Red, CY 3, CY 3.5, mCherry, Alexa 594
630 nm	Alexa 633, Alexa, 647, Alexa 660, CY 5, APC, TOPRO-3, TOTO-3

- LED wavelength displayed on the above table as standard. Changeable to other colors by referencing the ordering information.

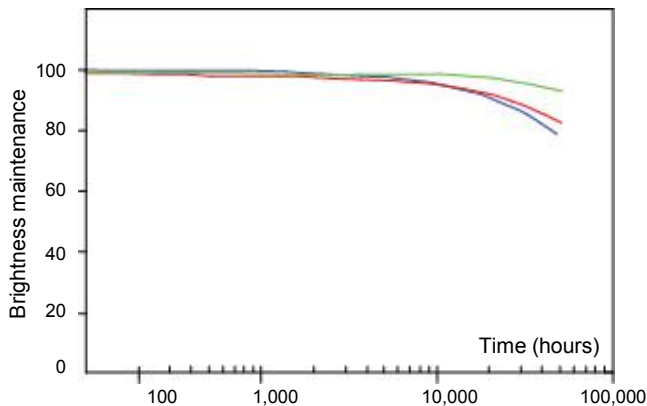
# TouchBright® X5 & X6

## High-Performance LED-Excitation System



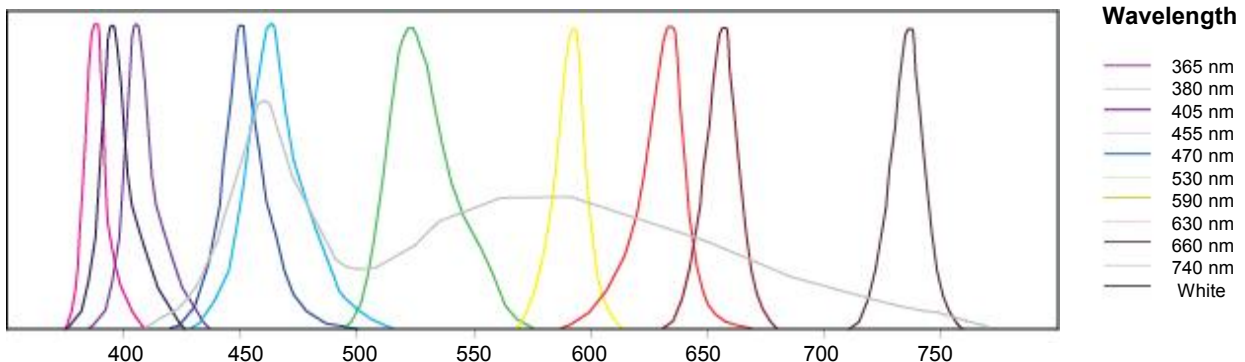
- Through the active cooling system, the LED can provide the brightest and maximized illumination consistently while it minimizes the wavelength shift.
- Consistent and stable transmitted light intensity reduces and minimizes the error of the fluorescence images during bio-imaging experiments.

### TouchBright Brightness Reduction of the LED



- Working time of the LED modules is 20,000 hours or 3 years. (cf. The mercury lamp of the microscope only has a few hundred hours.)
- Cost-beneficial and profitable LED light sources
- No requirement for the light alignment

### TouchBright LED Wavelengths



- Available LED wavelengths as shown
- Supplying with any combination of the wavelengths listed
- Both small and big chips available

### Ordering Information

Model No.	Description																																		
TB-X5 / X6 (nn/nn/nn/nn/nn-□-□-nn)	<p style="text-align: center;"><b>TouchBright X5 / X6 system</b></p> <p style="text-align: center;"> <b>[ nn/nn/nn/nn/nn - □ - □ - nn ]</b>  <b>[ nn/nn/nn/nn - □ - □ - nn ]</b> </p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>Numbers of LED modules</b></p> <p><b>[X5] Select 4 LED modules</b>  <b>[X6] Select 5 LED modules</b></p> <table border="0"> <thead> <tr> <th style="text-align: left;">nn</th> <th style="text-align: left;">wavelength</th> </tr> </thead> <tbody> <tr><td>21.</td><td>365 nm (11W)</td></tr> <tr><td>22.</td><td>370 nm (117W)</td></tr> <tr><td>31.</td><td>405 nm (10W)</td></tr> <tr><td>32.</td><td>430 nm (12W)</td></tr> <tr><td>34.</td><td>470 nm (52W)</td></tr> <tr><td>41.</td><td>505 nm (7.8W)</td></tr> <tr><td>42.</td><td>530 nm (58W)</td></tr> <tr><td>43.</td><td>560 nm (6.5W)</td></tr> <tr><td>44.</td><td>590 nm (10W)</td></tr> <tr><td>51.</td><td>630 nm (32W)</td></tr> <tr><td>52.</td><td>660 nm (4.5W)</td></tr> <tr><td>61.</td><td>700 nm (4W)</td></tr> <tr><td>62.</td><td>740 nm (7.8W)</td></tr> <tr><td>71.</td><td>810 nm (7.6W)</td></tr> <tr><td>73.</td><td>850 nm (7.8W)</td></tr> <tr><td>99.</td><td>White (49W)</td></tr> </tbody> </table> </div> <div style="width: 50%;"> <p><b>Wave length of external LED Illuminator Select 1 LED module</b></p> <p>99. White (50W, standard)                      (Any color of LED modules are available instead of white)</p> <p><b>External LED</b></p> <p>Y. With external LED                      N. Without external LED</p> <p><b>Microscope company</b></p> <p>N. Nikon                      O. Olympus                      Z. Zeiss                      L. Leica                      M. Motic                      C. Other</p> </div> </div> <p style="margin-top: 20px;">▪ “W” is watt, the value means maximum electric power consumption of each LED module.</p>	nn	wavelength	21.	365 nm (11W)	22.	370 nm (117W)	31.	405 nm (10W)	32.	430 nm (12W)	34.	470 nm (52W)	41.	505 nm (7.8W)	42.	530 nm (58W)	43.	560 nm (6.5W)	44.	590 nm (10W)	51.	630 nm (32W)	52.	660 nm (4.5W)	61.	700 nm (4W)	62.	740 nm (7.8W)	71.	810 nm (7.6W)	73.	850 nm (7.8W)	99.	White (49W)
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TB-X5-Z002	TouchBright X5 touchscreen remote control pad																																		
TB-X5-Z005-nn	TouchBright X5 external LED illuminator (white)																																		
TB-X5-Z006-nn	TouchBright X6 LED modules (nn: wavelength)																																		
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TB-X6-Z003	TouchBright X6 liquid light guide																																		
TB-X6-Z004	TouchBright X6 collimator for the liquid light guide																																		
TB-X6-Z005-nn	TouchBright X6 external LED illuminator (nn: wavelength)																																		
TB-X6-Z006-nn	TouchBright X6 LED modules (nn: wavelength)																																		

- “nn” is order number of each LED according to the wavelength.

# TouchBright® X3

## High-Performance 3 LED- Excitation System



TouchBright X3 (one illuminator, default type)



TouchBright X3 (two illuminators, option)



1 channel



2 channels



3 channels

TouchBright X3 basically consists of a touchscreen control pad, an AC/DC adaptor and a LED illuminator.

- Connectable with maximum three LED illuminators to the touchscreen control pad
- Directly attachable to the microscope without a light guide
- Suitable for the fluorescence microscopes to use a white light for the transmission imaging and one or two wavelengths for the fluorescence imaging
- For more than a illuminator, the display program is easily changeable from its setting mode as shown in the photos)
- Connect illuminators to the touchscreen control pad using the extension connector
- All LED illuminators are controllable with common software packages (e.g. TTL, Nikon-NIS, Metamorph or Micromanager)

- **Brightest LEDs & power stability**
- **Long lifetime**
- **Wide range of the LED wavelengths**
- **Simple & convenient operation**
- **No warm-up and cool-down**
- **0-100% intensity control**
- **Directly connectable or combining the illuminator to the microscope**
- **2 wavelengths for the fluorescence excitation with**
- **TouchBright TMC**

Model No.	Description	Model No.	Description
TB-X3-10 (nn)	TouchBright X3 system with 1 illuminator	TB-X3-Z002	connector for 2 illuminators
TB-X3-20 (nn/nn)	TouchBright X3 system with 2 illuminators	TB-X3-Z003	connector for 3 illuminators
TB-X3-30 (nn/nn/nn)	TouchBright X3 system with 3 illuminators	TB-X3-Z004 (nn)	LED illuminator
TB-X3-Z001	touchscreen remote control pad	TB-X3-Z005	AC/DC adaptor

- "nn" is order number of each LED depends on wavelength.

### Available Wavelength of TouchBright X3

Number (nn)	Wavelength	Number (nn)	Wavelength	Number (nn)	Wavelength	Number (nn)	Wavelength
21	365 nm	41	505 nm	53	690 nm	72	830 nm
22	380 nm	42	530 nm	61	700 nm	73	850 nm
31	405 nm	43	560 nm	62	740 nm	74	870 nm
32	430 nm	44	590 nm	63	760 nm	75	890 nm
33	455 nm	51	630 nm	64	780 nm		
34	470 nm	52	660 nm	71	810 nm	99	white

- TouchBright X3 provides high-power LEDs that satisfy the most of the wavelength ranges.

### TouchBright TMC



**2 liquid light guides of the TouchBright X6**  
- A combiner, collimators, and dichroic mirrors



**2 illuminators of the TouchBright X3**  
- A combiner and dichroic mirrors

- TouchBright TMC allows to use 2 wavelength-LEDs simultaneously with TouchBright illumination systems.
  - TouchBright TMC consists of a combiner, a collimator, and dichroic mirrors
  - Configuration can be different from each kind of TouchBright illumination systems.
- **2 wavelengths are simultaneously allowed.**
  - **Provide high speed wavelength selections**
  - **A combiner is directly attachable to 2 illuminators.**
  - **For using more than 3 illuminators, combiners are serially connectable. (option)**
  - **For liquid light guides, collimators are attachable to the combiner**

Model No.	Description
TMC-Z001	combiner
TMC-Z002	collimator (for the fiber optic)
TMC-Z003	adaptor between the microscope and the combiner
TMC-Z004	dichroic mirror

# TouchBright® W-Series

## LED Excitation System for Commercial 96-Well Plates



TouchBright T1 (straight glass light guide)



TouchBright T1 (ring glass light guide)

The TouchBright T1 basically consists of a controller, a touch screen control pad, and a light guide. Light guides are compatible with all microscope, and there are three types light guide: Straight light guide, gooseneck type light guide, and Ring type light guide.

### 1. Straight type:

These light guides are used for point illuminated area. There are several size of inner diameter of glass fiber depends on LED chip size.

### 2. Gooseneck type:

These light guides are for spot-on illumination, and can adjust their directions you desired, because the gooseneck consists of a metallic spring tube. They are also available in one-arm and two-arm versions.

### 3. Ring type:

These light guides can be attached at the stereomicroscope objective or CCD camera directly.

The TouchBright T1 can be supplied with any color of the wavelength listed.

In case of white LED, it can provide 50W or 100W LED (Electric power consumption)

The strength of Light can be adjusted conveniently by to the touch screen control pad, and they are possible to control by the common software packages such as Metamorph or Micromanager like other TouchBright systems.

Model No.	Description
TB-T1-Z001	TouchBright T1 light source
TB-T1-Z002	TouchBright T1 touchscreen remote control panel
TB-T1-Z003	TouchBright T1 straight glass fiber light guide
TB-T1-Z004	TouchBright T1 gooseneck glass fiber light guide
TB-T1-Z005	TouchBright T1 ring glass fiber light guide