

# M-Tubes

m...tube powered by  
**MENTOR**  
INNOVATIONS FOR THE FUTURE

Flexible or Rigid LED-powered light tubes for low energy, long-life illumination.



- M-Tubes from opto-electronic innovators Mentor GmbH deliver many of the properties of fluorescent or cold cathode technologies but have all of the advantages of LEDs.
- Either standard or hi-brightness LED-sourced light is input at each end of a crystal-clear light guide tube (both rigid and flexible versions are available). A printed reflective strip along the length of the tube delivers even, diffused and targeted light.
- There are no "hot spots" of lights as found with LED strips.
- M-Tubes are suitable for multiple applications including:-
  - Architecture - stairs & edges, emergency lighting, ambience/decorative lighting, cove lighting, lift doors etc.
  - Industrial electronics - switchgear cabinet illumination, service light, danger signals etc.
  - Household - illumination and backlighting of all kinds.
  - Automotive & marine - light curtains, signal lights, contour illumination, ambience/decorative lighting.
- The light guide tubes can be up to 700mm in length and either 6mm or 10mm diameter - other sizes available upon request.
- Service life of around 50,000 hours to 50% brightness compares with typical tungsten bulb life of around 1,000 hours.
- Brightness level of a 548mm ultra-white hi-brightness M-Tube is 250lx compared with 307lx from a typical 10W 500mm fluorescent tube.
- Energy-efficient with minimal heat generation - in terms of cost per kWh, the hi-brightness version is 63% cheaper than fluorescent tube and 94% cheaper than tungsten bulbs (approximate).
- Service life is unaffected by on/off actuations.
- Immediate full luminosity (no warm-up).
- Impervious to extremes of temperature - operating range -40°C to +70°C.
- Available in red, green, blue and up to three Kelvins of white. RGB available on special order.
- Dimmability of all LEDs and RGB colour control are possible using alternative power sources (not supplied).

## M-Tube System Standard LEDs

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- Standard LEDs for lower brightness ambience illumination.
- Available in a modular system.

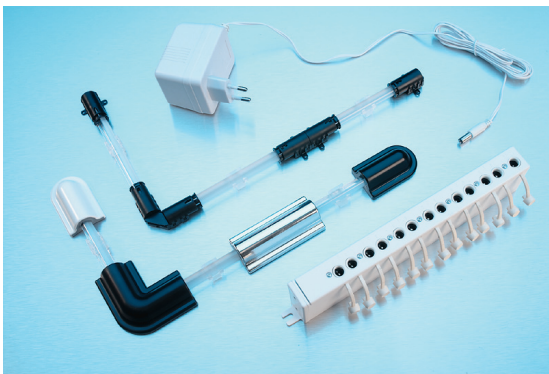


Image	Order Code	Mftrs List No	Description
	1320.0610		6mm Ø Light Guide 100mm long
	1320.0630		6mm Ø Light Guide 300mm long
	1320.0650		6mm Ø Light Guide 500mm long
	1320.0670		6mm Ø Light Guide 700mm long
	1320.1010		10mm Ø Light Guide 100mm long
	1320.1030		10mm Ø Light Guide 300mm long
	1320.1050		10mm Ø Light Guide 500mm long
	1320.1070		10mm Ø Light Guide 700mm long
	1320.0002		Split Sleeve for 6mm Ø M-Tube
	1320.0004		Split Sleeve for 10mm Ø M-Tube
	1321.1200		• M-Tube housing with red std LED
	1321.1400		• M-Tube h/sing with white 3,500 K std LED
	1321.1500		• M-Tube h/sing with white 5,600 K std LED
	1321.1600		• M-Tube housing with blue std LED
	1321.1800		• M-Tube housing with green std LED
	1321.1201		• M-Tube coupler with red std LED
	1321.1401		• M-Tube c/pler with white 3,500 K std LED
	1321.1501		• M-Tube c/pler with white 5,600 K std LED
	1321.1601		• M-Tube coupler with blue std LED
	1321.1801		• M-Tube coupler with green std LED
	1321.1202		• M-Tube corner housing with red std LED
	1321.1402		• M-Tube corner housing with white 3,500 K std LED
	1321.1502		• M-Tube corner housing with white 5,600 K std LED
	1321.1602		• M-Tube corner housing with blue std LED
	1321.1802		• M-Tube corner housing with green std LED
	1320.0011		M-Tube end shade - Black One plug 1320.0200 for 6mm Ø or 1320.0400 for 10mm Ø is required for each end shade.
	1320.0012		M-Tube coupler shade - Black Two plugs 1320.0200 for 6mm Ø or 1320.0400 for 10mm Ø are required for each coupler shade.
	1320.0013		M-Tube corner shade - Black Two plugs 1320.0200 for 6mm Ø or 1320.0400 for 10mm Ø are required for each corner shade.
	1320.0200		Plug for 6mm Ø M-Tube
	1320.0400		Plug for 10mm Ø M-Tube
	1320.0020		Fastening device for 6mm Ø M-Tube
	1320.0040		Fastening device for 10mm Ø M-Tube
	1321.1000		Terminal box - use to connect power to up to 12 LED housings (6 double-ended M-Tubes).
	1321.0100		M-Tube power supply extension cable 3M
	1321.0010		M-Tube Term box to LED extension cable 3M
	1321.0020		M-Tube Term box to LED extension cable 5M
	1321.0030		M-Tube Term box to LED extension cable 10M
	1321.2001		M-TUBE System Basic incl. AC/DC adapter (for use with one double-ended M-Tube).
	1321.2002		M-TUBE System Basic (supplementary). Up to two of these can be added to 1321.2002 to power a total of three double-ended M-Tubes.

Order Code	Mfr List No	Order Multiple	Price Each			Order Code	Mfr List No	Order Multiple	Price Each		
			1+	4+	10+				1+	4+	10+
123-456	1320.0610	1				1321.1202	1				
	1320.0630	1				1321.1402	1				
	1320.0650	1				1321.1502	1				
	1320.0670	1				1321.1602	1				
	1320.1010	1				1321.1802	1				
	1320.1030	1				1320.0011	2				
	1320.1050	1				1320.0012	1				
	1320.1070	1				1320.0013	1				
	1320.0002	2				1320.0200	2				
	1320.0004	2				1320.0400	2				
	1321.1200	1				1320.0020	3				
	1321.1400	1				1320.0040	3				
	1321.1500	1				1321.1000	1				
	1321.1600	1				1321.0100	1				
	1321.1800	1				1321.0010	1				
	1321.1201	1				1321.0020	1				
	1321.1401	1				1321.0030	1				
	1321.1501	1				1321.2001	1				
	1321.1601	1				1321.2002	1				
	1321.1801	1									

## M-Tubes Hi Brightness LEDs



- The Dragon LEDs used in Hi-Brightness M-Tubes deliver an impressive intensity of illumination whilst still retaining the benefits of low-energy and longevity.
- An aluminium profile regulates the thermo-management of these powerful LEDs, whilst at the same time acting as a reflector and an elegant design feature.
- As well as fully assembled units with sockets for power-in, unusual design requirements are accommodated for by the availability of modular components incorporating stranded wires for attachment to suitable power sources.

Image	Order Code	Mfrs List No	Description
<b>Modular</b>			
		1322.1300	☼ Ultra-white (6,500 K) Hi-Brightness
		1322.1400	☼ Warm-white (3,500 K) Hi-Brightness
		1322.1500	○ Std-white (5,600K) Hi-Brightness
		1322.1600	● Blue Hi-Brightness
		1322.1800	● Green Hi-Brightness
		1322.1200	● Red Hi-Brightness

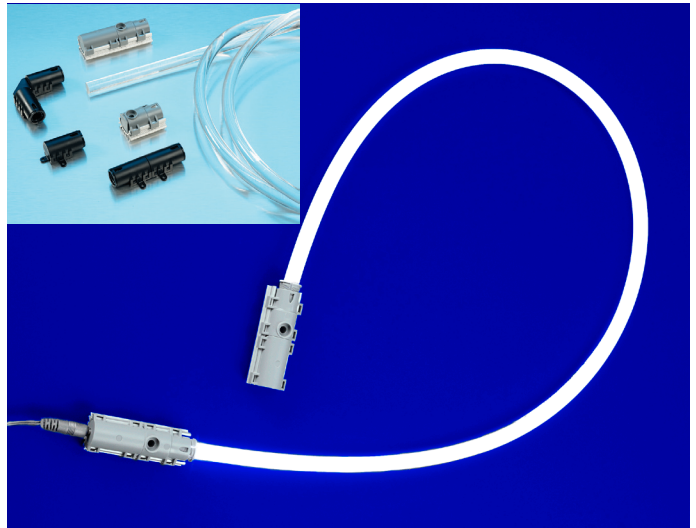
Image	Order Code	Mfrs List No	Description
			M-Tube Hi-Brightness LED & Housing (63.1mm alu) single module with DC/DC converter, stranded wire & split sleeve for Ø 10mm flexible or rigid M-Tube light guides. (One required for each unit.)
		1322.1301	☼ Ultra-white (6,500 K) Hi-Brightness
		1322.1401	☼ Warm-white (3,500 K) Hi-Brightness
		1322.1501	○ Standard-white (5,600 K) Hi-Brightness
		1322.1601	● Blue Hi-Brightness
		1322.1801	● Green Hi-Brightness
		1322.1201	● Red Hi-Brightness
			1320.1010
		1320.1030	10mm Ø Light Guide 300mm long
		1320.1050	10mm Ø Light Guide 500mm long
		1320.1070	10mm Ø Light Guide 700mm long
		1320.0020	Fastening device for 6mm Ø M-Tube
		1320.0040	Fastening device for 10mm Ø M-Tube
<b>Complete Hi-Brightness units with aluminium profiles, DC/DC converters and female plug sockets. (Stranded wire connections available to order.)</b>			
			<b>448.3 mm long aluminium profile</b>
		1322.1320	☼ Ultra-white (6,500K) Hi-Brightness LEDs
		1322.1420	☼ Warm-white (3,500K) Hi-Brightness LEDs
		1322.1520	○ Std-white (5,600K) Hi-Brightness LEDs
		1322.1220	● Red Hi-Brightness LEDs
		1322.1620	● Blue Hi-Brightness LEDs
		1322.1820	● Green Hi-Brightness LEDs
			<b>548.3 mm long aluminium profile</b>
		1322.1330	☼ Ultra-white (6,500K) Hi-Brightness LEDs
		1322.1430	☼ Warm-white (3,500K) Hi-Brightness LEDs
		1322.1530	○ Std-white (5,600K) Hi-Brightness LEDs
		1322.1230	● Red Hi-Brightness LEDs
		1322.1630	● Blue Hi-Brightness LEDs
		1322.1830	● Green Hi-Brightness LEDs
			<b>748.3 mm long aluminium profile</b>
		1322.1340	☼ Ultra-white (6,500K) Hi-Brightness LEDs
		1322.1440	☼ Warm-white (3,500K) Hi-Brightness LEDs
		1322.1540	○ Std-white (5,600K) Hi-Brightness LEDs
		1322.1240	● Red Hi-Brightness LEDs
		1322.1640	● Blue Hi-Brightness LEDs
		1322.1840	● Green Hi-Brightness LEDs
			<b>948.3 mm long aluminium profile</b>
		1322.1350	☼ Ultra-white (6,500K) Hi-Brightness LEDs
		1322.1450	☼ Warm-white (3,500K) Hi-Brightness LEDs
		1322.1550	○ Std-white (5,600K) Hi-Brightness LEDs
		1322.1250	● Red Hi-Brightness LEDs
		1322.1650	● Blue Hi-Brightness LEDs
		1322.1850	● Green Hi-Brightness LEDs
		1322.0020	Diffuser cover with end caps 450mm long
		1322.0030	Diffuser cover with end caps 550mm long
		1322.0040	Diffuser cover with end caps 750mm long
		1322.0050	Diffuser cover with end caps 950mm long
	1322.1000		AC/DC adapter for HB M-Tubes
	1322.0100		Power supply extension 3M

# M-Tubes Flex

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## Flexible Light Guides

use with Standard or Hi-Brightness LEDs



- Simply order these flexible light guides instead of rigid ones to add a twist to your lighting solutions!
- Compatible with both the standard LED and Hi-Brightness LED modules, flexible M-Tubes works on the same principle as rigid ones. LED-sourced light is input at each end and a printed reflective strip ensures even distribution of diffused light along the tube's length.
- There are no "hot spots" of lights as found with LED strips. Low-energy and longevity features remain the same as rigid M-Tubes.
- Choose standard LEDs for a mood-setting glow or Hi-Brightness LEDs for more intense illumination. (Dimmability is possible.)
- Flexible M-Tubes can easily be bent into the desired shape and location and are secured by means of transparent holders.
- Potential applications are limitless but include the illumination of round objects, mirrors, displays, advertising, vending machines, curved staircases etc etc.

Image	Order Code	Mftrs List No	Description
		1320.0631	6mm Ø Flexible Light Guide 300mm long
		1320.0651	6mm Ø Flexible Light Guide 500mm long
		1320.0671	6mm Ø Flexible Light Guide 700mm long
	<i>NB: Hi Brightness LED housings are supplied with split sleeves for 10mm Ø rigid or flexible light guides. For other combinations of size/LED types, split sleeves should be ordered separately.</i>		
		1320.1031	10mm Ø Flexible Light Guide 300mm long
		1320.1051	10mm Ø Flexible Light Guide 500mm long
		1320.1071	10mm Ø Flexible Light Guide 700mm long
		1320.0020	Fastening device for 6mm Ø M-Tube
		1320.0040	Fastening device for 10mm Ø M-Tube

Order Code	Mftr List No	Order Multiple	Price Each			Order Code	Mftr List No	Order Multiple	Price Each		
			1+	4+	10+				1+	4+	10+
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	1320.0651	1				1320.1071	1				
	1320.0671	1				1320.0020	3				
	1320.1031	1				1320.0040	3				

Order Code	Mftr List No	Order Multiple	Price Each			Order Code	Mftr List No	Order Multiple	Price Each		
			1+	4+	10+				1+	4+	10+
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	1322.1500	1				1322.1530	1				
	1322.1600	1				1322.1230	1				
	1322.1800	1				1322.1630	1				
	1322.1200	1				1322.1830	1				
	1322.1301	1				1322.1340	1				
	1322.1401	1				1322.1440	1				
	1322.1501	1				1322.1540	1				
	1322.1601	1				1322.1240	1				
	1322.1801	1				1322.1640	1				
	1322.1201	1				1322.1840	1				
	1320.1010	1				1322.1350	1				
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	1320.1050	1				1322.1550	1				
	1320.1070	1				1322.1250	1				
	1320.0020	3				1322.1650	1				
	1320.0040	3				1322.1850	1				
	1322.1320	1				1322.0020	1				
	1322.1420	1				1322.0030	1				
	1322.1520	1				1322.0040	1				
	1322.1220	1				1322.0050	1				
	1322.1620	1				1322.1000	1				
	1322.1820	1				1322.0100	1				