

Mic-LED Light Source Series Collimated LED Light Sources for Microscopy

Ver. 2

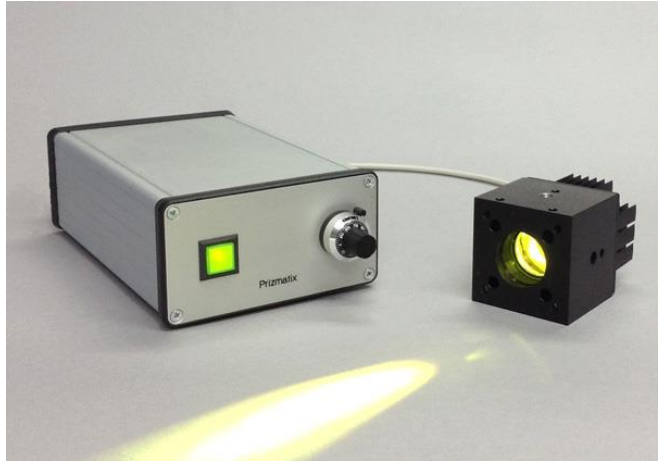
Introduction

Prizmatix Modular Mic-LED Light Source products series provides an affordable and expandable solution for fluorescence excitation in upright and inverted fluorescence microscopes. Mic-LEDs are available in a wide range of a specific excitation wavelengths (please see full list below).

The Mic-LED head comprises a High Power single chip LED and built-in adjustable AR coated aspheric lens collimator to provide collimated beam suitable for direct connection to epi-fluorescence port of microscope. The XY adjust screws enable precise alignment of the LED system to microscope light path. The LED has excellent thermal coupling to the body of Mic-LED or heat sink providing excellent thermal management. Each Mic-LED is shipped with specific test report providing information on total beam power and emission spectrum.

Mic-LED modules can be easily combined by dichroic Beam Combiner OptiBlocks to create various multi wavelength excitation system. The multi wavelength system can mix all Prizmatix collimated LEDs: Mic-LED, UHP-LEDs and UHP-T.

The Mic-LED current controller BLCC-04 can drive in either continuous or pulsed modes.



Key Features

- High Power LED at numerous wavelengths
- Long life, no lamp replacement required
- Adaptors to epi-fluorescent ports of Olympus, Nikon, Zeiss and Leica. Also compatible with standard SM1 (1.035"-40) thread
- No excessive heat, no speckles, no vibrating or moving parts
- Expandable system – user can add excitation wavelengths to create multi-wavelength system
- Precisely adjustable power by 10 turns potentiometer or Analog Input (0-5Vdc)
- Low optical noise (<0.02% rms)
- Fast triggering via TTL input (Rise / Fall time <3 μ s)
- Opto-Isolated TTL and Analog Inputs to eliminate ground-loop
- USB control (optional)

Optical Output Power Specifications:

Mic-LED power output is dependent on specific LED wavelength used in the product. Please contact us for power data for specific wavelength and fiber. Following table shows few examples for collimated Mic-LED as used in microscopy and for Mic-LED equipped with Fiber Couple Adaptor (FCA), for full table of standard available wavelengths and power levels.

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Product	Collimated Output Power	Fiber output Power*
Mic-LED-365	300 mW	100 mW
Mic-LED-385	600 mW	130 mW
Mic-LED-460	400 mW	130 mW
Mic-LED-630	300 mW	100 mW

(*) Fiber output power is for Polymer Optical Fiber, core 1500um, NA 0.5, length 1m connected to FCA adaptor connected to Mic-LED head.

Electrical Specifications:

Typical Optical RMS Noise (DC-1MHz)	%	< 0.05
Modulation inputs (TTL and Analog Input)		Optically isolated BNC connectors
Digital modulation frequency	Hz	DC-40000
Rise / Fall time (10% - 90%)	µs	<5 / <3
Analog input voltage range	V	0-5
Analog modulation frequency	Hz	DC-150
BLCC-04 Input Voltage	V	12
Power Adaptor Input		100-240 VAC, 50/60Hz, 0.7A

General Specifications

Operation temperature range	°C	10 - 35
Storage temperature range	°C	-10 - 55
Operating relative humidity (Non-condensing)	%	<90
Mic-LED dimensions		See drawing below
Mic-LED weight	g	350
BLCC-04 Dimensions		See drawing below
BLCC-04 Weight	g	430
Power adaptor dimensions (L x W x H)	mm	90 x 53 x 35
Power adaptor weight	g	190
Power Adaptor Safety		

Optional Accessories

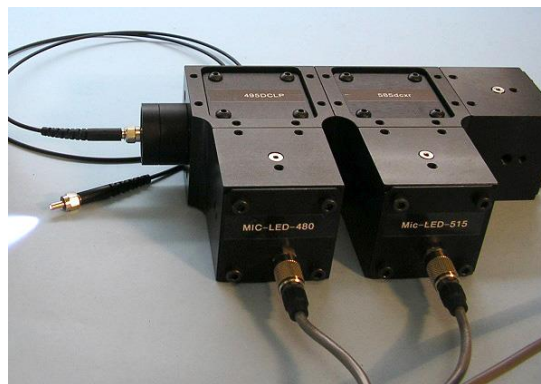
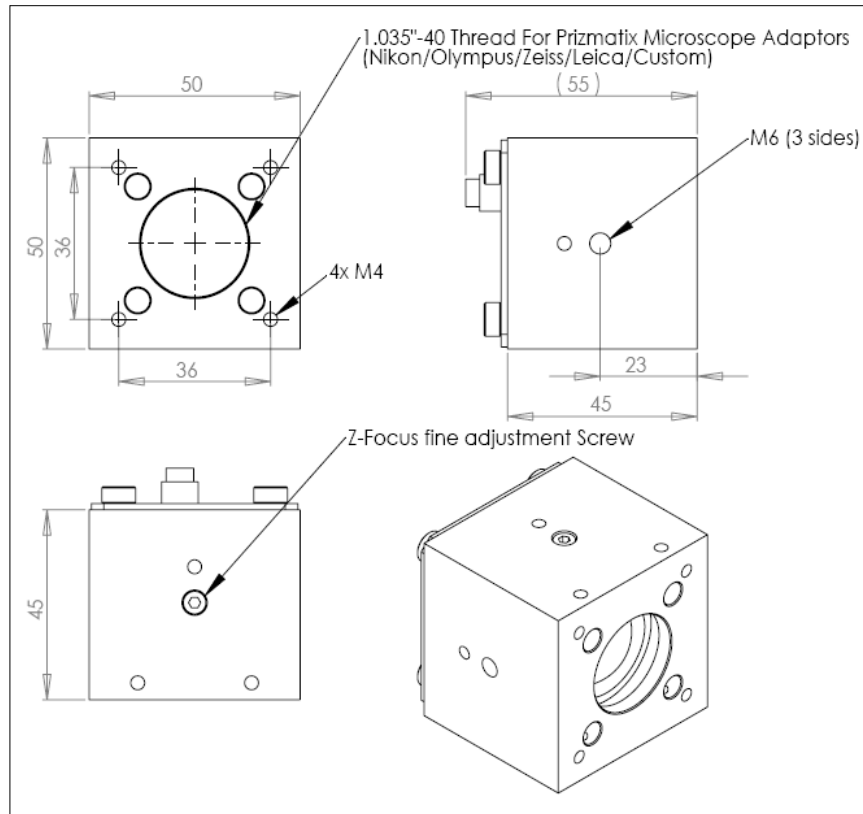


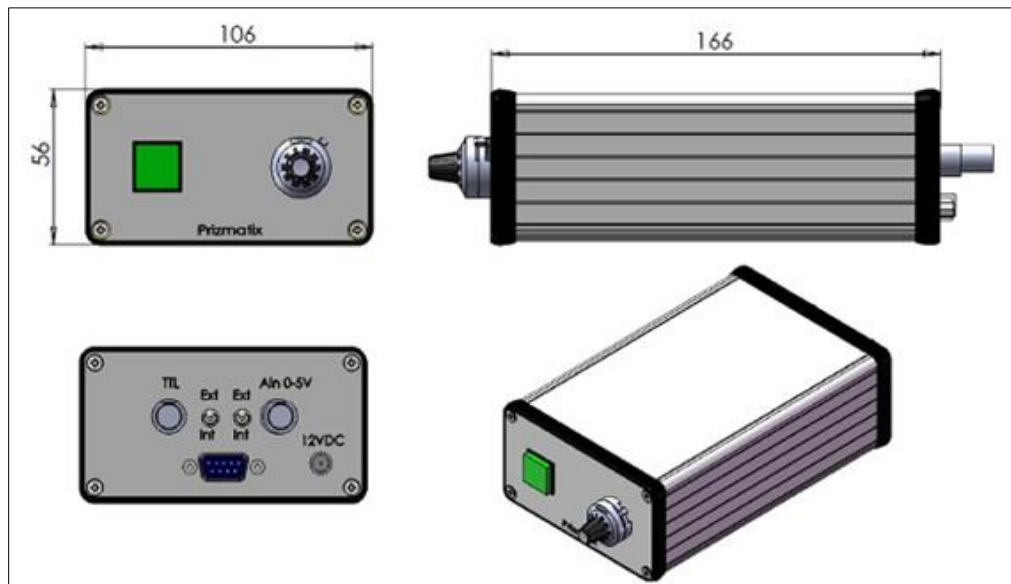
Fig. 2: Multi-wavelength light source assembled by 3 x Mic-LED, 2 x Beam Combiners, 1 x Fiber Coupled Adaptor.

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Mic-LED Head Mechanical Drawings



BLCC-04 LED Current Controller Mechanical Drawings



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Product P/N	Peak λ [nm]	Cent-roid [nm]	FWHM [nm]	Power Collim. [mW]	Power Fiber Coupled [mW]
Mic-LED-280L	281	282	12	88	3.5
Mic-LED-325D	325	326	14	38	4.5
Mic-LED-340A	344	347	12	76	13.4
Mic-LED-365L	371	372	14	650	110
Mic-LED-375A	374	376	12	670	100
Mic-LED-385L	383	384	11	770	160
Mic-LED-395A	396	398	18	460	135
Mic-LED-395L	395	396	14	740	140
Mic-LED-405L	405	406	18	630	115
Mic-LED-410Y	408	409	17	570	100
Mic-LED-415L	414	415	15	900	190
Mic-LED-415Z	416	416	15	350	80
Mic-LED-420Z	421	422	16	400	90
Mic-LED-430T	428	428	21	410	60
Mic-LED-430Z	430	430	21	400	70
Mic-LED-445HR	446	449	23	610	220
Mic-LED-455HR	453	456	31	580	210
Mic-LED-465L	466	464	33	630	100
Mic-LED-470CG	471	473	23	540	100
Mic-LED-475CA	474	476	31	340	55
Mic-LED-480A	477	478	31	330	50
Mic-LED-480CA	478	480	28	340	55
Mic-LED-500A	498	499	29	215	37
Mic-LED-500CG	498	499	27	320	60
Mic-LED-505A	505	508	35	190	28
Mic-LED-515CA	515	520	43	150	25
Mic-LED-520CG	521	525	34	260	40
Mic-LED-525L	526	530	44	190	40
Mic-LED-530TR	529	530	39	310	40
Mic-LED-535TR	530	538	93	480	60
Mic-LED-550A	544	550	90	350	35
Mic-LED-590A	590	600	74	180	31
Mic-LED-595HR	594	599	64	250	90
Mic-LED-625CG	624	620	18	300	60
Mic-LED-630TR	635	630	18	360	55
Mic-LED-655A	659	654	22	260	50
Mic-LED-660L	663	657	29	650	80
Mic-LED-690M	695	687	25	210	25
Mic-LED-730L	736	731	41	520	45
Mic-LED-780M	781	774	26	200	40
Mic-LED-810V	813	802	35	550	40
Mic-LED-820L	826	817	30	970	190
Mic-LED-850L	856	848	43	710	40
Mic-LED-850V	850	847	42	250	50
Mic-LED-910M	915	910	40	300	30
Mic-LED-1000R	998	1000	81	360	34
Mic-LED-W30M	-	-	3000	145	32
Mic-LED-W40M	-	-	4000	155	36.5
Mic-LED-W65M	-	-	6500	160	35

