



Models WL50 and MC50 User Guide



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27A3114 (TF)



Printed in U.S.A.

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GENERAL

Shure models WL50 and MC50 are subminiature, electret condenser lavalier microphones. They provide uncompromised sound quality and high reliability with minimal visibility in sound reinforcement applications such as television broadcasting and stage performances.

Despite its small size, the microphone's condenser element provides full, clear and natural reproduction of speech. Each microphone is supplied with two types of equalization caps that are user changeable, allowing for easily customized sound, and two foam windscreens to minimize wind noise. The supplied mounting accessories consist of a lapel clip, a tie clip, a pin mount, and a magnet mount, giving the user a wide variety of options for placement.

MODEL VARIATIONS

- WL50: Intended for wireless use. Connects to Shure wireless bodypack transmitters via a TA4F connector.
- WL50X: Supplied with a 3 m (10 ft.) stripped and tinned cable for wiring to an alternate connector.
- WL50-LO: A lower sensitivity variation of the WL50, supplied with a TA4F connector.
- WL50X-LO: A lower sensitivity version of the WL50, supplied with stripped and tinned leads.
- MC50: Intended for hardwired applications. WL50 microphone supplied with an in-line preamplifier with a three-pin male XLR audio connector.

FEATURES

- *Extended frequency response with user changeable equalization caps for response shaping*
- *Low visibility with a variety of options for mounting*
- *Offered in black, beige, and white with matching accessories*
- *Low handling noise*
- *Legendary Shure quality, ruggedness, and reliability*

WINDSCREENS

Two acoustic foam windscreens are supplied to help reduce undesirable wind noise.

EQUALIZATION CAPS

The WL50 and the MC50 are each supplied with two types of equalization caps for high frequency response shaping. The caps differ in response between 5,000 and 20,000 Hz (see Figure 1 on page 12), and can be distinguished by the color of their mesh screens. The mild boost equalization cap has a silver mesh screen, while the high boost equalization cap has a gold mesh screen.

NOTE: For best sound quality, replace the equalization caps if they become clogged with make-up.

USING THE MC50 WITH A MIXER

The preamplifier supplied with the MC50 requires phantom power ranging from 11 to 52 Vdc. Connect the preamplifier to a mixer input with a minimum load impedance of 800 Ω to maximize operating headroom.

USING THE WL50 WITH OTHER BODYPACK TRANSMITTERS

If connecting the WL50 to anything OTHER than a Shure wireless bodypack, make sure the device provides a regulated +5 Vdc (130 μ A minimum) to the red conductor. Refer to the wiring diagrams in Figures 2 and 3 on page 12.

WIRING THE WL50X TO AN ALTERNATE CONNECTOR

Model WL50X is supplied with a stripped and tinned cable for wiring to a variety of connectors. Refer to the WL50X wiring diagram in Figure 3 on page 12. For additional information on wiring the WL50X to an alternate connector, contact Shure's Applications Department at (847) 866-2525 or 1-800-516-2525.

MOUNTING THE MICROPHONE

The WL50 and MC50 microphones come with the following mounting accessories (see Figure 4 on page 13):

Swiveling Lapel Clip. Features a spring-loaded clasp that attaches easily to a necktie, lapel, blouse or shirt, connected to a rotatable mounting clip. To mount, snap the microphone cable into the clip near the neck of the microphone, then attach the clasp to an article of clothing. Rotate the mounting clip to place the microphone at desired angle.

Dual Tie Clip. Features a spring-loaded clasp that attaches easily to a necktie or suit coat lapel, and a clip that holds one or two microphones. To mount, snap the microphone cable(s) into the clip near the neck of the microphone, then attach the clasp to an article of clothing.

Pin Mount. Features a translucent mounting clip with two straight pins that easily secure to an article of clothing. To mount, slide the straight pins into clothing, then snap the microphone cable into the mounting clip near the neck of the microphone.

Magnet Mount. Features a backplate that is worn under clothing and attaches to a magnetic mount capable of holding one or two microphones. To mount, place the magnetic backplate “necklace” around neck and under clothing, then align the magnet mount to the backplate and secure it to clothing. Snap microphone cable(s) into the clip near the neck of the microphone, and adjust the magnet mount to hold microphone at the desired angle.



WARNING: The magnet mount should not be used by persons fitted with an implanted medical device, such as a pacemaker or defibrillator.

SPECIFICATIONS	WL50[†]	WL50-LO[†]	MC50[‡]
Type	Condenser (electret bias)	Condenser (electret bias)	Condenser (electret bias)
Polar Pattern	Omnidirectional	Omnidirectional	Omnidirectional
Output Impedance	N/A	N/A	136 Ω actual (rated at 150 Ω)
Recommended Min. Input Impedance	20 k Ω	20 k Ω	N/A
Output Level	-45.0 dBV/Pa (1 Pa=94 dB SPL)	-55.0 dBV/Pa (1 Pa=94 dB SPL)	-41.0 dBV/Pa (1 Pa=94 dB SPL)
Maximum SPL	133 dB at 1% THD/1 k ohm load	143 dB at 1% THD/1 k ohm load	138 dB at 1% THD/1 k ohm load
Frequency Response	20 to 20,000 Hz (see Figure 1)	20 to 20,000 Hz (see Figure 1)	20 to 20,000 Hz (see Figure 1)
Dynamic Range	103.0 dB	103.0 dB	108.0 dB
Output Noise (equivalent SPL, A-weighted)	30 dB typical; 33 dB maximum	40 dB typical; 43 dB maximum	30 dB typical; 33 dB maximum
Signal-to-Noise Ratio	64 dB at 94 dB SPL	54 dB at 94 dB SPL	64 dB at 94 dB SPL

SPECIFICATIONS	WL50[†]	WL50-LO[†]	MC50[‡]
Power Requirements	+5 Vdc on pin 2, return on pin 1 (ground).	+5 Vdc on pin 2, return on pin 1 (ground).	11 to 52 Vdc (positive on pins 2 and 3, return on pin 1).
Current Drain	60–130 μ A	60–130 μ A	4.6 mA
Polarity	Positive pressure on the diaphragm produces a positive voltage at pin 3 relative to pin 1 at the output connector of the microphone.	Positive pressure on the diaphragm produces a positive voltage at pin 3 relative to pin 1 at the output connector of the microphone.	Positive pressure on the diaphragm produces positive voltage at pin 2 relative to pin 3 of the output connector.
Overvoltage Protection	N/A	N/A	\pm 75.0 Vdc maximum from pins 2 and 3 to pin 1.
Cap and Overmold Material	Polypropylene	Polypropylene	Polypropylene
Environmental Conditions	Operating Temperatures: –18° to 57° C 0° to 135° F Storage Temperatures: –29° to 74° C –20° to 165° F Humidity: 0 to 95%	Operating Temperatures: –18° to 57° C 0° to 135° F Storage Temperatures: –29° to 74° C –20° to 165° F Humidity: 0 to 95%	Operating Temperatures: –18° to 57° C 0° to 135° F Storage Temperatures: –29° to 74° C –20° to 165° F Humidity: 0 to 95%

SPECIFICATIONS	WL50[†]	WL50-LO[†]	MC50[‡]
Packaged Weight	188 g (6.63 oz.)	188 g (6.63 oz.)	305 g (10.76 oz.)
Cable and Connector	1.5 m (5 ft.), small-diameter, shielded, with miniature female 4-pin connector (TA4F type). WL50X: 3 m (10 ft.) small-diameter, shielded, with stripped and tinned leads.	1.5 m (5 ft.), small-diameter, shielded, with miniature female 4-pin connector (TA4F type). WL50X-LO: 3 m (10 ft.) small-diameter, shielded, with stripped and tinned leads.	1.5 m (5 ft.), small-diameter, shielded, with miniature female 4-pin connector (TA4F type).
Microphone Dimensions	See Figure 6.	See Figure 6.	See Figure 6.
Preamplifier Dimensions	N/A	N/A	See Figure 5.
Net Weight	WL50: 21 g (0.7 oz.) with cable and connector. WL50X: 28 g (1.0 oz.) with 3 m (10 ft.) stripped and tinned cable.	WL50-LO: 21 g (0.7 oz.) with cable and connector. WL50X-LO: 28 g (1.0 oz.) with 3 m (10 ft.) stripped and tinned cable.	121 g (4.3 oz.) with cable, connector, and preamplifier.

SPECIFICATIONS	WL50 [†]	WL50-LO [†]	MC50 [‡]
Certification	Eligible to bear CE Marking. Conforms to European EMC Directive 89/336/EEC. Meets applicable test and performance criteria in European EMC Standards ETS300445 (1996), as an ancillary device.	Eligible to bear CE Marking. Conforms to European EMC Directive 89/336/EEC. Meets applicable test and performance criteria in European EMC Standards ETS300445 (1996), as an ancillary device.	Eligible to bear CE marking. Conforms to European EMC directive 89/336/EEC. Meets applicable test and performance criteria in European EMC standard EN 55103 (1996) parts 1 and 2, for residential (E1) and light industrial (E2) environments.

[†] Measured with test circuit (see Figure 7 on page 63).

[‡] Measured with RPM626 Preamplifier.

FURNISHED ACCESSORIES

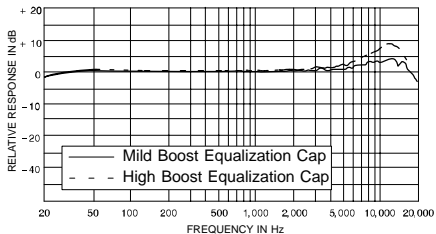
Foam Windscreen (2 pcs.)	
Black, beige or white	
Mild Boost Equalization Cap (2 pcs.)	
Black, beige or white	
High Boost Equalization Cap (2 pcs.)	
Black, beige or white	
Swiveling Lapel Clip	
Black, beige or white	
Dual Tie Clip	
Black, beige or white	
Preamplifier with hardware (MC50 only)	RPM626
Magnet Mount	
Black	90A4694
Beige	90B4694
White	90C4694
Pin Mount	95A2162

OPTIONAL ACCESSORIES

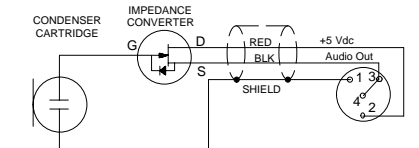
Phantom Power Supply	PS1A
Battery-Operated Preamplifier	MX1BP

REPLACEMENT PARTS

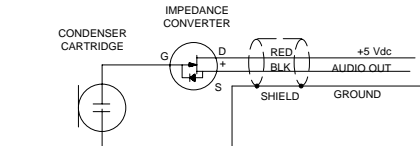
High Boost Equalization Caps	
Black (5 pcs.)	RPM208
Beige (5 pcs.)	RPM212
White (5 pcs.)	RPM216
Mild Boost Equalization Caps	
Black (5 pcs.)	RPM220
Beige (5 pcs.)	RPM214
White (5 pcs.)	RPM218
Foam Windscreen	
Black (5 pcs.)	RPM304
Beige (5 pcs.)	RPM306
White (5 pcs.)	RPM308
2 Swivel Lapel Clips and 2 Dual Tie Clips	
Black	RPM500
Beige	RPM502
White	RPM504
Switchcraft TA4F Connector	WA330



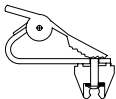
TYPICAL FREQUENCY RESPONSE
FIGURE 1



WL50/MC50 SERIES MICROPHONE WIRING DIAGRAM
 WITH TA4F CONNECTOR
FIGURE 2



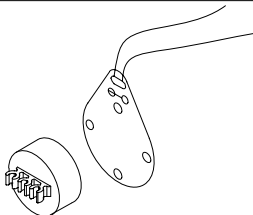
WL50X SERIES MICROPHONE WIRING DIAGRAM
 (UNTERMINATED)
FIGURE 3



SWIVELING LAPEL CLIP



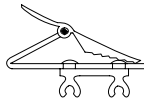
PIN MOUNT



MAGNET MOUNT

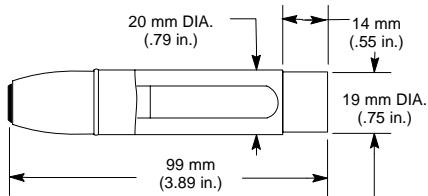


WARNING:
THE MAGNET MOUNT SHOULD NOT BE
USED BY PERSONS FITTED WITH AN
IMPLANTED MEDICAL DEVICE, SUCH AS
A PACEMAKER OR DEFIBRILLATOR.

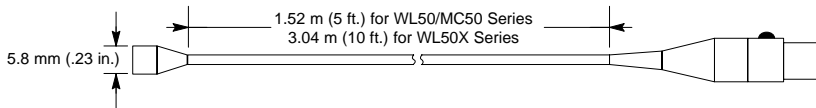


DUAL TIE CLIP

SUPPLIED MOUNTING ACCESSORIES
FIGURE 4



PREAMPLIFIER DIMENSIONS
FIGURE 5



MICROPHONE AND CABLE DIMENSIONS
FIGURE 6



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