GENERAL
Shure models WL50/MC50 (omni) and WL51/MC51 (unidirectional) are subminiature, elec-
tret condenser lavaliere microphones. They provide uncompromised sound quality and high
responsiveness with minimal visibility in sound reinforcement applications such as television broadcast-
ing and stage performances. Despite its small size, the microphone’s condenser ele-
ment provides full, clear and natural reproduction of speech. Each microphone is supplied
with two foam wind screens to minimize wind noise. The supplied mounting accessories con-
sist 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 (omni)/WL51 (uni): Intended for wireless use. Connects to Shure wireless
bodypack transmitters via a TA4F connector.
WL50X (omni)/WL51X (uni): Supplied with a 3 m (10 ft.) stripped and tinned cable for
wiring to an alternate connector.
WL50-LC: A lower sensitivity variation of the WL50, supplied with a TA4F connector.
(omnidirectional)
WL50X-LC: A lower sensitivity version of the WL50, supplied with stripped and tinned
leads. (omnidirectional)
MC50 (omni)/MC51 (uni): Intended for hardwired applications. WL50 or WL51
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 (omni only)
- Low visibility with a variety of options for mounting
- WL50—(omnidirectional) offered in black, beige, and white with matching accessories
- WL51—(unidirectional) offered in black and white with matching accessories
- Low handling noise
- Legendary Shure quality, ruggedness, and reliability

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

EQUALIZATION CAPS
The WL50 and the MC50 omnidirectional models are each supplied with two types of equal-
ization caps for high frequency response shaping. The caps effect the response range be-
 tween 5,000 and 20,000 Hz (see Figure 4), and can be distinguished by the color of their
mesh screens. The mild boost equalization cap has a very fine mesh, silver color screen,
and attenuates the natural high frequency peak of the microphone. The high boost equaliza-
tion cap has an open mesh gold color screen and does not attenuate the high frequency peak.

The WL51 and MC51 unidirectional models are supplied with the high boost equalization
 cap only. The WL51 and MC51 models should never be used with the mild boost equaliza-
tion cap because the unidirectional pick-up pattern will be severely altered. This is due to partial
blocking of the front opening, and they will not perform correctly.

MOUNTING THE MICROPHONE
The WL50/WL51 and MC50/MC51 microphones come with the following mounting
accessories:
- 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 adjust the clasp to an article of clothing.
  Rotate the mounting clip to place the microphone at desired angle.
- Pin Mount. Features two straight pins that easily secure to an article of clothing. To mount,
  slide the straight pins into clothing, then snap the microphone cable(s) into the clip near the
  neck of the microphone, then attach the clasp to an article of clothing.
- Magnet Mount. Features a translucent mounting clip with two straight pins that easily secure
to an article of clothing. To mount, place the magnetic backplate “necklace” around neck and
under clothing, then align the magnet mount to the backplate and securely to the 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.

FURNISHED ACCESSORIES
- Foam Windscreen (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/MC51 only) RpM626
- Magnet Mount Black Rp9A4694
  Beige Rp9B4694
  White Rp9C4694
- Pin Mount Rp9A2162

OPTIONAL ACCESSORIES
- Phantom Power Supply RpPS1A
- Battery-Operated Preamplifier RpMX1BP

REPLACEMENT PARTS
- High Boost Equalization Caps Black (5 pcs.) RpRP208
  Beige (5 pcs.) RpRP212
  White (5 pcs.) RpRP216
- Mild Boost Equalization Caps (omni only)
  Black (5 pcs.) RpRP220
  Beige (5 pcs.) RpRP214
  White (5 pcs.) RpRP218
- Foam Windscreens
  Black (5 pcs.) RpRP304
  Beige (5 pcs.) RpRP306
  White (5 pcs.) RpRP308
- 2 Swivel Lapel Clips and 2 Dual Tie Clips
  Black RpRP500
  Beige RpRP502
  White RpRP504
- Mini 4-pin (TA4F type) Connector RpWA331
- Carry Case (WL51 only) RpWA350

* Not used with WL51, MC51 models

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

USING THE MC50/MC51 WITH A MIXER
The preamplifier supplied with both the MC50 and M51 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/WL51 WITH OTHER BODYPACK TRANSMITTERS
If connecting the WL50/WL51 to anything OTHER than a Shure wireless bodypack, make
sure the device provides a regulated +5 Vdc (130 μA minimum) to the red conductor. Refer
to the wiring diagrams in Figures 6 and 7.

WIRING THE WL50X/WL51X TO AN ALTERNATE CONNECTOR
Model WL50X/WL51X is supplied with a stripped and tinned cable for wiring to a variety of
connectors. Refer to the WL50X/WL51X wiring diagram in Figure 6. For additional informa-
tion on wiring the WL50X/WL51X to an alternate connector, contact Shure’s Applications De-
partment at (847) 600–8440 or 1–800–516–2525.
### Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>WL50</th>
<th>WL50-LO</th>
<th>MC50</th>
<th>WL51</th>
<th>MC51</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Condenser (electret bias)</td>
<td>Condenser (electret bias)</td>
<td>Condenser (electret bias)</td>
<td>Condenser (electret bias)</td>
<td>Condenser (electret bias)</td>
</tr>
<tr>
<td>Polar Pattern</td>
<td>Omnidirectional</td>
<td>Omnidirectional</td>
<td>Omnidirectional</td>
<td>Cardioid</td>
<td>Cardioid</td>
</tr>
<tr>
<td>Output Impedance</td>
<td>N/A</td>
<td>20 kΩ</td>
<td>N/A</td>
<td>20 kΩ</td>
<td>N/A</td>
</tr>
<tr>
<td>Recommended Min. Input Impedance</td>
<td>20 kΩ</td>
<td>20 kΩ</td>
<td>N/A</td>
<td>20 kΩ</td>
<td>N/A</td>
</tr>
<tr>
<td>Output Level</td>
<td>−45.0 dBV/Pa (1 Pa=94 dB SPL)</td>
<td>−54.0 dBV/Pa (1 Pa=94 dB SPL)</td>
<td>−41.0 dBV/Pa (1 Pa=94 dB SPL)</td>
<td>−50.0 dBV/Pa (1 Pa=94 dB SPL)</td>
<td>−46.0 dBV/Pa (1 Pa=94 dB SPL)</td>
</tr>
<tr>
<td>Maximum SPL</td>
<td>133 dB at 1% THD/20 kΩ load</td>
<td>142 dB at 1% THD/20 kΩ load</td>
<td>138 dB at 1% THD/1 k Ω load</td>
<td>138 dB at 1% THD/1 k Ω load</td>
<td>143 dB at 1% THD/1 k Ω load</td>
</tr>
<tr>
<td>Frequency Response</td>
<td>20 to 20,000 Hz (see Figure 5)</td>
<td>20 to 20,000 Hz (see Figure 5)</td>
<td>20 to 20,000 Hz (see Figure 5)</td>
<td>20 to 20,000 Hz (see Figure 5)</td>
<td>20 to 20,000 Hz (see Figure 5)</td>
</tr>
<tr>
<td>Dynamic Range</td>
<td>103.0 dB</td>
<td>103.0 dB</td>
<td>108.0 dB</td>
<td>103.0 dB</td>
<td>108.0 dB</td>
</tr>
<tr>
<td>Output Noise (equivalent SPL, A-weighted)</td>
<td>30 dB typical; 33 dB maximum</td>
<td>39 dB typical; 42 dB maximum</td>
<td>30 dB typical; 33 dB maximum</td>
<td>35 dB typical; 38 dB maximum</td>
<td>35 dB typical; 38 dB maximum</td>
</tr>
<tr>
<td>Signal-to-Noise Ratio</td>
<td>64 dB at 94 dB SPL</td>
<td>65 dB at 94 dB SPL</td>
<td>64 dB at 94 dB SPL</td>
<td>59 dB at 94 dB SPL</td>
<td>59 dB at 94 dB SPL</td>
</tr>
<tr>
<td>Power Requirements</td>
<td>+5 Vdc on pin 2, return on pin 1</td>
<td>+5 Vdc on pin 2, return on pin 1</td>
<td>+5 Vdc on pin 2, return on pin 1</td>
<td>+5 Vdc on pin 2, return on pin 1</td>
<td>+5 Vdc on pin 2, return on pin 1</td>
</tr>
<tr>
<td>Current Drain</td>
<td>60–130 μA</td>
<td>60–130 μA</td>
<td>4.6 mA</td>
<td>60–130 μA</td>
<td>4.6 mA</td>
</tr>
<tr>
<td>Overvoltage Protection</td>
<td>N/A</td>
<td>N/A</td>
<td>±75.0 Vdc maximum from pins 2 and 3 to pin 1.</td>
<td>N/A</td>
<td>±75.0 Vdc maximum from pins 2 and 3 to pin 1.</td>
</tr>
<tr>
<td>Cap and Overmold Material</td>
<td>Polypropylene</td>
<td>Polypropylene</td>
<td>Polypropylene</td>
<td>Polypropylene</td>
<td>Polypropylene</td>
</tr>
<tr>
<td>Environmental Conditions</td>
<td>Operating Temperatures: −18 to 57 °C (0 to 135 °F)</td>
<td>Storage Temperatures: −29 to 74 °C (−20 to 165 °F)</td>
<td>Humidity: 0 to 95%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Weight</td>
<td>188 g (6.63 oz.)</td>
<td>188 g (6.63 oz.)</td>
<td>305 g (10.76 oz.)</td>
<td>188 g (6.63 oz.)</td>
<td>305 g (10.76 oz.)</td>
</tr>
</tbody>
</table>

### Microphone and Preamplifier Dimensions

See Figures 2 and 3.

### Net Weight

- WL50: 21 g (0.7 oz.) with cable and connector.
- WL50-LO: 21 g (0.7 oz.) with cable and connector.
- WL50X: 28 g (1.0 oz.) with 3 m (10 ft.) stripped and tinned cable.
- WL50X–LO: 3 m (10 ft.) stripped and tinned leads.
- WL50X: 3 m (10 ft.) stripped and tinned cable.
- WL51: 21 g (0.7 oz.) with cable, connector, and preamplifier.
- WL51–LO: 21 g (0.7 oz.) with cable, connector, and preamplifier.
- WL51X: 28 g (1.0 oz.) with 3 m (10 ft.) stripped and tinned cable.

### Certification

Eligible to bear CE marking. Conforms to European EMC directive 89/336/EEC. Meets applicable test and performance criteria in European EMC standard EN 55103-1 (1996) parts 1 and 2, for residential (E1) and light industrial (E2) environments.

1. Measured with test circuit (see Figure 1).