



# D401S

Omni Microphone

# User Guide

## Specifications

### Type

Dynamic microphone

### Polar pattern

Omni-directional, rotationally symmetrical about microphone axis, uniform with frequency. (Figure 1)

### Frequency response

80 to 15,000 Hz (Figure 2)

### Sensitivity (at 1,000 Hz Open Circuit Voltage)

-54dBV/Pa (2.0mV/Pa) ±3dB, 1Pa=94dB SPL

### Rated impedance

200Ω

### Connector

Integral 3 pin male XLR type

### Finish

Metal construction with Grey body and champagne-silver housing painted finish

### Environmental conditions

The D401S operates between -10°C to +50°C (14°F to 122°F) with relative humidity between 0 to 95%.

### Dimensions

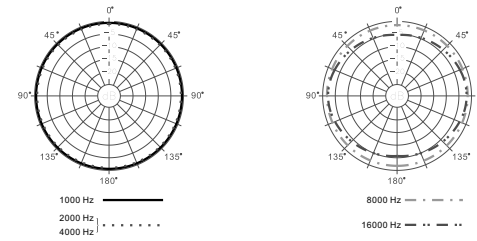
φ47.0mm x 174.0mm (1.85in. x 6.85in.), Figure 3

### Net weight

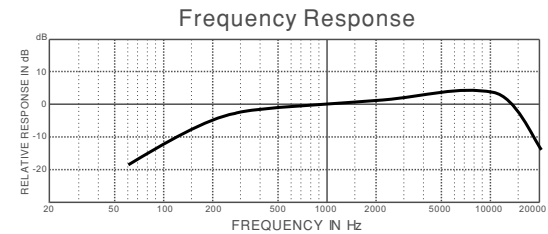
280.0 grams (9.9 oz)

### RoHS

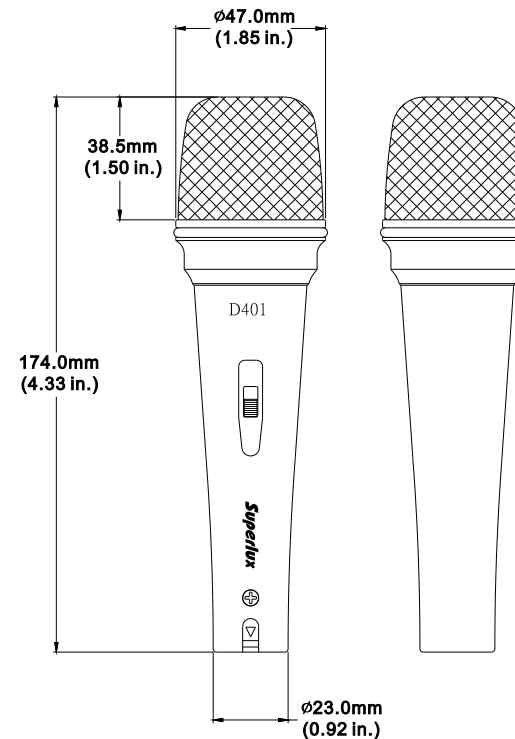
The D401S including the product and packages follow the instruction of EU 2002/95/EC and comply to RoHS.



TYPICAL POLAR PATTERN (Figure 1)



TYPICAL FREQUENCY RESPONSE (Figure 2)



Dimensions (Figure 3)

## Description

Superlux D401S is an Omni directional, dynamic microphone with no proximity effect. With its inherent uniform sensitivity, and flat on-axis response that provide articulate speech for interview, broadcast, or podcast.

Very suitable for recording only application, so there is no feedback concern or coloration.

Multiple vibration reduction system that reduce handling noise to minimum.

Sleek profile for comfort handling and visual effect, and enhancing wind

## Features

- Omni directional, uniform sensitivity. Balance and nature sound.
- Low impedance, high dynamic range.
- Spherical pick-up, capturing all related message.
- Strengthen metal grill, sturdy die-cast shaft for maximum impact protection.
- On/off mute switch.
- Especially suitable for interview, speech recording, communication, language education etc.

## Accessories

### Supplied accessories

Microphone clip ----- HM38S



HM38S  
Microphone clip



## Optional accessories

Gooseneck mic base -----	DS003A
Table stand -----	HM6
Table stand -----	D1
Gooseneck -----	GM13G



## Knowing your microphone

Superlux provides variety selection of microphones for professionals and amateurs. To know your microphone is the first step to successful result.

### Type of transducer



#### Dynamics

Durable and simple structure, operates in all kinds of environments. A good dynamic microphone is capable to operate at very high sound pressure level without distortion. Due to structure limit, dynamics cannot be built as small as condenser, but dynamics doesn't require power to operate.

### About Frequency Response

#### Flat

Suitable for working at controlled environment, or for acoustic measurements. Although people pursue flatness, but for non-professionals, it is a challenge to make it work as expected.

#### Popular curve response

Based on years of practical experience of pro users. There are curves to be built for various applications, so that it is very simple to use the microphone for the purpose. Limiting bandwidth, and emphasizing are typical skills.

#### Variable response

Incorporating switchable filters to eliminate interference, such as sub-sonic filter to cut air-conditioner and floor vibrations. And allows full flat when used in controlled environment.

### Directivity



#### Omnidirectional

Equal sensitivity to all directions, so that the microphone doesn't need pointing toward the sound source. Low handling and wind noise. Welcome by news gathering, and music recording applications.

### Distance to source

Close miking or distant miking sound very differently. Vocal recording or live performance practice close miking mostly. Suitable proximity effect is one desired target, and lower feedback problem is another factor for live sound application.

While distant miking is common practice for recording, especially stereo pair recording with large group of performers, such as orchestra or choir.

Distant miking generally picks up less bass section with pressure gradient type of microphone (cardioid, figure-8, shotgun...) due to acoustic nature and lack of proximity effects.

Rich bass with distant miking can be recorded with pressure type of microphone (Omnidirectional), which performs the same frequency response with close or distant pick-up.

## Using a handheld microphone

For best signal to noise ratio, distance from the handheld microphone to the sound source shall be as short as possible.

For higher gain before feedback and lowest background noise, the microphone shall be pointed directly to the sound source. (refer to the illustration below) The sensitivity of a super cardioid microphone is highest on axis and lowest at 120 to 135 degrees.

To avoid interference between multiple microphones, each sound source shall be picked-up by one microphone, use as few microphones as possible in one space, or turn-on as few microphones as possible at the same time.

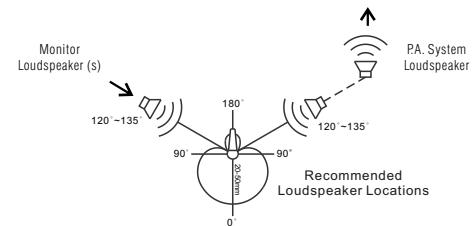
To reduce crosstalk between microphones, a 1:3 guide line shall be followed: The distance between microphone A to the sound source A is "1", the distance between any other microphone to the sound source A shall be more than 3 times.

When the (super) cardioid microphone gets closer to the sound source, the low frequency response is boosted, as so-called "proximity effect". Experience singers take advantage of the proximity effect to improve the richness of his/her voice or to increase the bass of the instrument as if an extremely high quality equalizer is used. Same idea to reduce the bass by increasing the distance to reduce the bass when needed.

Reflecting surfaces affect sound as well. Beware of these surfaces such as wall, table, or floor. Place the microphone away from the hard surfaces or directly contact these surfaces to form a pressure zone microphone.

When using the microphone outdoors or in a windy environment, additional foam wind screen helps to reduce wind noise.

Keep grill pop screen clean to avoid degrading the sound quality. Do not expose the microphone to high humidity/temperature environment to avoid damage.



## Mounting the microphone

Pressure gradient microphone is very sensitive to vibration. Suitable shock mount for high performance microphone is necessary for extreme low noise recording. Sturdy stand can set the microphone exactly at the sweet spot and keep it there. Choose heavy duty microphone stand for studio condenser microphone which weighs much more than handle microphone.

Superlux provides wide range of microphone stands for various demands. Big Foot Willie is specially developed for large condenser microphones that able to support 2 large microphones with stereo bracket for single point stereo recording.

Extension foot on all the 'E' versions serve to mount heavy studio microphone in limited space live sound applications.

## Maintenance

Dynamic microphone shall be kept in low humidity environment for best sound performance. Store the condenser microphones in airconditioned room or dehumidifier to keep away from moisture. Clean air is another important factor. Keep away from smoking environment to avoid tar residuals.

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