## Silva 16DCL

# Silva 16DCL Military Grade Compass User Manual

Model: 16DCL

## 1. Introduction

The Silva 16DCL Military Grade Compass is a precision instrument designed for experienced navigators. Trusted by NATO Forces globally, this compass is ideal for infantry, officers, and outdoor enthusiasts requiring reliable and accurate navigation. This manual provides essential information for setting up, operating, and maintaining your compass to ensure optimal performance.

## 2. Product Overview

The Silva 16DCL compass is engineered with several key features to enhance your navigation capabilities:

- **Graduation:** Features both mils (6400) and degrees (360) for versatile readings.
- **Integrated Adjuster:** Allows for magnetic declination adjustment, crucial for accurate readings in different geographical locations.
- **Magnifying Lens:** Aids in reading fine details on maps.
- **Rubber Feet:** Provides stability for precision map work, preventing slippage.
- **Luminous Features:** Graduation ring and markings glow in the dark for up to 4 hours after activation by daylight or flashlight, enabling night navigation.
- **Scale Lanyard & Slope Card:** Included for quick distance judgment and route planning.
- **Mirror Sighting System:** For precise bearing taking.


*Figure 1: Silva 16DCL Military Grade Compass. This image shows the compass in its open position, highlighting the clear baseplate, compass dial, and mirror.*

## 3. Setup

1. **Attach Lanyard:** Secure the included scale lanyard to the compass. This helps prevent loss and provides a convenient way to carry the compass.
2. **Familiarize Yourself:** Open the compass fully. Identify the main compass dial, the sighting mirror, the sighting notch, and the various scales on the baseplate.
3. **Check Luminous Markings:** Expose the compass to bright light (daylight or flashlight) for a few minutes to charge the luminous markings for potential night use.

## 4. Operating Instructions

### 4.1 Basic Orientation

1. Hold the compass flat and steady in your hand, ensuring it is level.
2. Allow the magnetic needle to settle. The red end of the needle points to magnetic North.
3. Rotate the compass housing until the red end of the needle aligns with the 'N' (North) on the dial. You are now oriented to magnetic North.

### 4.2 Taking a Bearing (Mirror Sighting)

1. Open the mirror lid to an angle of approximately 45 degrees.
2. Hold the compass at eye level, looking through the sighting notch in the mirror lid.
3. Align the sighting line in the mirror with your target object.
4. Simultaneously, observe the compass dial in the mirror reflection. Rotate the compass housing until the red end of the magnetic needle aligns with the 'N' (North) on the dial.
5. The reading at the index line (the line directly under the sighting notch) is your bearing to the target.

### 4.3 Declination Adjustment

Magnetic declination is the angle between magnetic North (where your compass points) and true North (geographical North). This angle varies depending on your location. The Silva 16DCL features an integrated adjuster for declination.

1. Determine the local magnetic declination for your area (often found on topographical maps or online resources).
2. Use a small tool (e.g., the included lanyard key or a small screwdriver) to rotate the declination adjustment screw on the compass housing.
3. Adjust the declination scale to match your local declination value. This will offset the 'N' on the dial, allowing you to read true North directly.

### 4.4 Map Work (Scales & Magnifying Lens)

- **Measuring Distance:** Use the millimeter (mm) and inch scales on the baseplate to measure distances on your map. Refer to the map's scale (e.g., 1:25,000, 1:50,000) to convert map distance to real-world distance.
- **UTM Scales:** The compass includes UTM position plotting scales (1:25k, 1:50k) for precise coordinate identification on UTM grid maps.
- **Magnifying Lens:** Utilize the integrated magnifying lens to examine small details, contour lines, or text on your map.

### 4.5 Night Navigation

The luminous graduation ring and markings allow for navigation in low-light conditions.

1. Before night use, expose the compass to a strong light source (e.g., flashlight, sunlight) for at least 30 seconds to activate the luminescence. The markings will glow for up to 4 hours.
2. In the dark, align the glowing 'N' with the magnetic needle to find North, and use the glowing markings to take bearings.

### 4.6 Slope Card Use

The included slope card assists in quickly estimating distances and planning routes based on terrain slope.

1. Refer to the slope card to understand how different slope angles affect perceived distance and travel time.
2. Use the clinometer feature (if available on your specific model, or estimate visually) to determine the slope of the terrain.
3. Apply the information from the slope card to adjust your route planning and distance estimations.

*Video 1: Product Overview. This video provides a general overview of the Silva 16DCL compass, demonstrating its physical features and basic handling.*

## 5. Maintenance

- **Cleaning:** Clean the compass with a soft, damp cloth. Avoid abrasive cleaners or solvents that could damage the acrylic or markings.
- **Storage:** Store the compass in a cool, dry place away from strong magnetic fields (e.g., magnets, electronic devices) to prevent demagnetization of the needle.
- **Inspection:** Periodically check the compass for any signs of damage, such as cracks in the baseplate or mirror, or a sticky needle.

## 6. Troubleshooting

- **Needle Not Settling:** Ensure you are holding the compass level and away from any magnetic interference (e.g., metal objects, power lines, electronic devices).
- **Inaccurate Readings:** Verify that the magnetic declination is correctly set for your current location.
- **Faint Luminous Markings:** Recharge the luminous markings by exposing them to a strong light source.

## 7. Specifications

| Feature | Description |
|---|---|
| Accuracy | ± 1° (17.8 mils) |
| Altitude Use | 5000m @-15 °C |
| Clinometer | Yes |
| Declination Adjustment | Yes |
| Graduation | 6400° / 360° |
| Illumination | 4 hours after activation in light |
| Impact Resistance | 30g in XYZ directions and free fall from 1.5 m height into gravel |
| Magnifying Lens | Yes |
| Material | Acrylic/Acetal, PC/ABS, TPU |
| Patented Red/Black N/S Lines | Yes |
| Resolution Degrees / Mils | 2 / 50 |
| Scales | mm, inch |
| Settling Time (90° angle to rest) | 5 sec |
| Settling Time (90° angle within ± 3°) | 2.7 sec |
| Sighting System | Mirror sighting |
| Silicon Friction Feet | Yes |
| Size | 108x64x20 mm (4.25"L x 2.52"W) |
| Temperature Operating Range | -30 to +60 C |
| Type of Compass | Baseplate, Silva 1-2-3 System Mirror sighting compass |
| UTM Position Plotting Scales | 1:25k, 1:50k |

| Feature | Description |
| --- | --- |
| Water Resistance | Waterproof |
| Weight | 86g (3.03 ounces) |

## 8. Warranty and Support

For warranty information and customer support, please refer to the documentation included with your purchase or visit the official Silva website. Keep your proof of purchase for any warranty claims.