Thank you for purchasing a CMA5 Series Fiber Optic Light Sources. These lightweight, handheld units are designed for field installation, testing and commissioning of all types of optical fiber systems.

**Laser Safety**

Anritsu CMA5 series Fiber Optic Light Sources are fully compliant with the CDRH (FDA) Federal Register 21CFR parts 1040.10 and 1040.11 except for deviations pursuant to Laser Notice 50, dated June 24, 2007, and these products are classified as Class 1 Laser Emissions levels according to IEC60825-1:2007. The Class 1 level is considered to be eye and radiation exposure safe. This compliance is met when the product is used as intended.

**Features**

- Units available in single or dual wavelength models
- Universal optical connector with choice of FC, SC, or ST adapter caps
- Multimode and single mode operation
- Accurate and stable
- Modulation capability (CW, 270 Hz, 1 kHz, and 2 kHz)
- Membrane switch overlay
- Visual output indication

**Applications**

- Cable and link loss measurement
- Network auditing and maintenance
- Troubleshooting and repair
- Connector and coupling losses
- Rare fiber loss measurement
- Fiber identification

**Precautions**

Use care when working with any optical transmission equipment. Avoid looking directly at any optical fiber or optical sources. Refer to your company’s safety procedures when working with optical systems and components. It is important to keep all optical connections and surfaces free from dirt, oil or other contaminants to ensure proper operation. This applies to all connectors that are connected to the unit’s optical port. Scratched or contaminated connectors can reduce system performance. Refer to your company practices for cleaning optical connectors. Always replace the protective dust cap when not in use.

**Replacing Battery**

When replacing the battery, use the specified battery and insert it with the correct polarity. If the wrong battery is used, or if the battery is inserted with reversed polarity, there is a risk of explosion causing severe injury or death.

**DO NOT**

- Short the battery terminals and never attempt to disassemble the battery or dispose of it in a fire. If the battery is damaged by any of these actions, the battery fluid may leak. This fluid is poisonous.
- Touch the battery fluid, ingest it, or get it in your eyes. If it is accidentally ingested, spit it out immediately, rinse your mouth with water and seek medical help. If it enters your eyes accidentally, do not rub your eyes, rinse them with clean running water and seek medical help. If the liquid gets on your skin or clothes, wash it off carefully and thoroughly.

**Notice to U.S. Government End Users**

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The information in this manual may be subject to change without notice.

Anritsu Corporation
5-1-1 Omra, Atsugi-shi, Kanagawa, 243-8555, Japan

Battery Leakage

- DO NOT expose batteries to heat or fire. Do not expose batteries to fire. This is dangerous and can result in explosions or fire. Heating batteries may cause them to leak or explode.

Laser Safety

CAUTION: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

**Laser Class**

Anritsu CMA5 series Fiber Optic Light Sources are fully compliant with the CDRH (FDA) Federal Register 21CFR parts 1040.10 and 1040.11 except for deviations pursuant to Laser Notice 50, dated June 24, 2007, and these products are classified as Class 1 Laser Emissions levels according to IEC60825-1:2007. The Class 1 level is considered to be eye and radiation exposure safe. This compliance is met when the product is used as intended.

**Location of Hazard Symbol and Laser class label**

The following labels are located on the front panel or backside.

- **Hazard Symbol:** It is located on the front panel that identifies the Class 1 laser port (See Figure 2).
- **Laser Class Label:** It is located on the front panel that identifies the Class 1 laser port (See Figures 1-2).

**Specifications of Laser Built into CMA5**

- Max. Optical Output Power (mW)
- Pulse Width (µs)
- Repetition Rate (Hz)
- Wavelength (nm)
- Beam Radius Angle (°)
- Laser Aperture (mm)

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Max. Optical Output Power (mW)</th>
<th>Pulse Width (µs)</th>
<th>Repetition Rate (Hz)</th>
<th>Wavelength (nm)</th>
<th>Beam Radius Angle (°)</th>
<th>Laser Aperture (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL83</td>
<td>1.0</td>
<td>23.0</td>
<td>1 kHz</td>
<td>1300</td>
<td>1310</td>
<td>23.0</td>
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<td>11.5</td>
<td></td>
<td>1310</td>
<td>23.0</td>
<td>11.5</td>
</tr>
<tr>
<td>SL35</td>
<td>1.14</td>
<td>11.5</td>
<td></td>
<td>1550</td>
<td>1310</td>
<td>11.5</td>
</tr>
<tr>
<td>SL35</td>
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<td>11.5</td>
<td></td>
<td>1550</td>
<td>1310</td>
<td>11.5</td>
</tr>
</tbody>
</table>

**Operating Controls**

1. **Output Connector (Laser Aperture)**
   - The units are equipped with a universal connector. PC, SC, and ST adapter caps are available. Units include one adapter cap.
   - CAUTION: Be sure to use adapter caps specifically made for the CMA5 Series Light Sources only. Light Source adapter caps are marked “LS.” Do not use CMA5 Power Meter adapter caps on the Light Sources.

2. **External AC Power Jack**
   - Connect the optional AC Power adapter to this jack.

3. **Active Wavelength and Mode Indicators**
   - These LEDs indicate the current active wavelength (for dual wavelength units) and the various operating modes.
**Wavelength Indicator(s):** A green LED illuminates indicating the current wavelength.

**NOTE:** Wavelength values listed will vary with model.

**Auto Off:** This LED is illuminated when the Auto Off function is enabled.

**Low Batt:** The low battery indicator light up when the battery is running low. Change the battery as soon as possible.

**Ext. Power:** The External Power indicator lights up green when you are operating the unit on the optional external AC adapter.

**Mode Indicators:** These LEDs indicate whether the unit is set to one of the modulation modes (270Hz, 1KHz, or 2KHz). If none of the modulation LEDs are illuminated, the unit is in CW mode.

**4.0 Volt Key**

This key enables the Auto Off function, which will power down the unit when no key has been pressed for 5 minutes.

**8.0 Volt Key**

This key toggles the two-wavelength method.

**NOTE:** The Wavelength key is only available on dual-wavelength units.

**Preparing the Unit for Testing**

Use the following procedures to assure that the CMA5 Series Light Source is operating properly.

1. Clean all optical ports and connectors according to your company procedures.

2. Connect one end of the patchcord to the CMA5 Series Light Source.

3. Connect the other end of the patchcord to a power meter such as a CMA5 or CMA30 Series Optical Power Meter.

4. Turn on the CMA5 Series Light Source and the power meter. Make sure that both units are set to the same wavelength.

**Warranty Information**

Anritsu Corporation will repair this equipment free-of-charge if a malfunction occurs within three years after shipment due to a manufacturing defect.

- The fault is outside the scope of the warranty conditions separately described in the operation manual.
- The fault is due to mishandling, misuse, or unsuitable modification or repair of the equipment by the customer. The customer is required to return the equipment to Anritsu for inspection before claiming warranty.
- The CMA5 Series Fiber Optic Light Sources are Class A products with respect to EMC and Safety Compliance of this product assumes that the unit is not transferred if the equipment is resold.

**Optical Loss Measurement**

1. Use two patchcords and an in-line adapter to connect to the CMA5 Series Light Source to a power meter. Attach one patchcord to the CMA5 Series Light Source and the other patchcord to the power meter. Use the in-line adapter to connect the two patchcords.

2. Select the wavelength for testing.

3. Reference the optical power and other record (wavelength) the readings. If testing at two wavelengths, repeat steps 2 and 3 for the second wavelength.

4. Disconnect the patchcords from the in-line adapter. The in-line adapter to connect the patchcord to the CMA5 Light Source. Disconnect the patchcord from the power meter.

5. Reconnect the patchcord attached to the CMA5 Series Light Source to the fiber under test. Connect the power meter to the other end of the fiber under test (See Figure 4:)

**Maintenance**

The CMA5A Series Light Sources require no periodic maintenance other than replacing the batteries.

**Battery Replacement**

Under normal use, a 9 volt alkaline battery will provide a minimum of 16 hours of continuous use.

To replace the battery:

1. Remove the unit from its protective boot by pulling down on the bottom of the unit to release the unit. Then slide the unit out of the boot.

2. Open the battery compartment located on the lower backside of the unit, by pressing down on the arrow on its cover and sliding the cover off the unit. 

3. Replace the battery with a fresh 9 volt alkaline battery.

4. Replace the battery compartment cover.

5. Replace the protective boot.

**General Care**

To avoid damage to the CMA5 Series Light Sources, do not use cable connectors that are dirty or faulty. A dust cap is provided for the source connector, and should be in place when the unit is not in use to prevent foreign material from entering the port.

To clean the source connector, use only a small diameter, non-cotton swab lightly moistened with pure isopropyl alcohol. Be sure to follow your company’s procedures if different. Clean the CMA5 Series Light Source’s case with a damp cloth. Do not use solvents or abrasives.

**Emitter Type**

FP-LD

**Head of Customer Service EMEA**

ANRITSU EMEA Ltd.

Address, city, country

United Kingdom

**EMC:**

The CMA5 Series Fiber Optic Light Sources are Class A products with respect to radiation and conducted emissions. In a domestic environment, it is possible that this product may cause radio interference, in which case the user may be required to take adequate measures. Such measures may include relocation or orientation of the product.

In order to reproduce EMC compliant operation as tested, the user must:

- Use only the optional AC adapter available from Anritsu for use with this product.

**NOTE:** KMC and Safety Compliance of this product assumes that the unit is operated from battery power while taking measurements.

**Electrical Safety:**

To reduce risk of equipment damage, injury or death, adhere to the following warnings:

- Do not use the CMA5 Series Fiber Optic Light Sources or the optional AC adapter if the CMA5 Series Fiber Optic Light Source or the optional AC adapter is cracked or damaged.

- Use the CMA5 Series Fiber Optic Light Sources only with the optional AC adapter available from Anritsu for the CMA5 Series Fiber Optic Light Sources. Anritsu does not guarantee the safety and functionality of other AC adapters.

- The CMA5 Series Fiber Optic Light Sources optional AC adapter is not intended for use in outdoor or wet environments.

- Ensure that the AC input to the optional AC adapter is within the voltage marked on the power supply’s case.

- Do not attempt to service the product in any other way than the routine maintenance as described in this manual.

**Batteries:**

Batteries may contain lead, cadmium, lithium or other toxic substances. Batteries must be disposed of, or recycled, in accordance with their label instructions and local regulations.

**Compliance Information**

General:

Unit being the CR mark have been tested to show compliance to the EMC Directive 2004/108/EC. Copies of compliance documentation are available from Anritsu Service and Sales office. Contact information can be found in a separate file.

Authorized representative

Name: Maurice Coleman

Head of Customer Service EMEA

ANRITSU EMEA Ltd.

Address, city, country

United Kingdom

**Input Power**

270 Hz, 1 KHz modulation (2 Hz, 2 Hz)

**Output Power**

≥ -7 dBm

**Wavelength**

1310/1550 nm ±20 nm

**S/N Ratio**

25 dB

**Resolution Width (FWHM)**

25 nm

**Emissivity**

0.1 dB ± 25°C

**Environment**

-10° to 50°C (+14 to +122ºF)

**Humidity**

95% (non-condensing)

**Mass**

250 g (0.55 lbs) or less (Excluding Rubber Protective Cover and 9V Alkaline Battery)

**Dimensions**

(horizontal x vertical x depth)

145 x 75 x 25 mm (5.70” x 2.95” x 0.98” (D))

**Warranty**

2 years

**Laser Safety**

Class 1 (IEC60825-1:2007)

**Note:** 1. Operation voltage: within the range of +10% to –10% from the rated voltage.

2. Anritsu Corporation 5-1-1 Omika, Atsugi-shi, Kanagawa, 243-8585, Japan

**Operating Temperature:**

-10°C to +50°C (+14°F to +122°F)

**Storage Temperature:**

-25°C to +60°C (+13°F to +140°F)

**Warranty Scope:**

Aside from the above, the warranty does not apply in the event that the equipment malfunctions, contact an Anritsu Service and Sales office. Contact information can be found in a separate file.