

connector (J1) with a pair of needle nose pliers. Grip the cable as close to the connector as possible, so as not to damage the cable.

5. Remove the white plastic Panduit connector (J2) by pulling on the top of the connector with a needle nose pliers. Do not pull the connector out by the wires.
6. Lift the printhead out of the instrument.
7. Reverse the process to reinstall the printer mechanism. To replace the print mechanism, use the Printer Module Assembly (Cat. No. 47702-00). Be sure the printer is properly seated before snapping the retainer onto the printer mechanism.
8. Reinstall the roll of paper (see the 2100AN IS Instruction Manual).

## 5.8 LED, Lens and Monitor Detector Replacement

### **DANGER**

*Because of the hazardous nature of the infrared LED light source, individuals servicing the 2100AN IS are required to have formal training on the following issues:*

*1) the infrared LED safety mechanisms and operating system, 2) control of potential hazards (e.g., restricted areas, signs, etc.), 3) personal protection requirements such as proper eyewear, 4) accident reporting procedures in the event of eye exposure, and 5) the bioeffects of infrared light on the eye.*

*Read all warnings in sections 1.3.1, 1.4.1 and 5.5.1 concerning LED safety and service before continuing.*

### **PERIGO**

*Devido à natureza de elevado risco da fonte de luz de LED infravermelhos, as pessoas que irão operar o 2100AN IS deverão forçosamente ter formação nos seguintes assuntos: 1) mecanismos de segurança de LED infravermelhos e sistema operativo, 2) controle e prevenção de eventuais riscos (p. ex. áreas restritas, sinalização, etc.), 3) utilização de vestuário de protecção adequado, nomeadamente óculos, 4) procedimento para comunicar acidentes no caso de exposição dos olhos, e 5) os efeitos biológicos dos infravermelhos nos olhos.*

*Antes de prosseguir leia atentamente os pontos 1.3.1, 1.4.1 e 5.5.1 relativamente à segurança e operação de LED.*

### **PELIGRO**

*Debido a la naturaleza peligrosa de la fuente de la luz del LED infrarrojo, el personal encargado del mantenimiento o las reparaciones del 2100AN IS debe estar especialmente entrenado en los siguientes puntos: 1) los mecanismos de seguridad del LED infrarrojo y el sistema operativo, 2) el control de los peligros potenciales (es decir, zonas prohibidas, señales, etc.), 3) los requisitos de protección personal, como por ejemplo las gafas protectoras, 4) los procedimientos para informar sobre posibles accidentes en el caso de que los ojos hayan quedado expuestos a la luz, y 5) los bioefectos de la luz infrarroja sobre los ojos.*

*Se ruega leer todas las advertencias incluidas en las secciones 1.3.1, 1.4.1 y 5.5.1 en relación con la seguridad del LED y con las operaciones de reparación y mantenimiento antes de continuar.*

### **DANGER**

*En raison des dangers présentés par la source lumineuse DEL infrarouge, les personnels de service ayant à intervenir sur le 2100AN IS doivent recevoir une formation formalisée sur les sujets suivants: 1) les dispositifs de sécurité et le système de fonctionnement de la DEL infrarouge, 2) la maîtrise des risques potentiels (par exemple, zones contrôlées, signes d'avertissement), 3) obligations de protection personnelle telle que protection oculaire adéquate, 4) procédures de compte-rendu d'accident dans le cas d'exposition des yeux, et 5) les effets biologiques de la lumière infrarouge sur l'oeil.*

*Lire tous les avertissements des chapitres 1.3.1, 1.4.1 et 5.5.1 concernant la sécurité et le service des DEL avant de continuer.*

## **GEFAHR**

*Wegen der Gefahren, die von der Infrarot-LED Lichtquelle ausgehen können, müssen Personen, die Wartungsarbeiten am 2100AN IS durchführen, an einem Schulungsprogramm über folgende Themen teilgenommen haben: 1) der Infrarot-LED Sicherheitsmechanismus und Betriebssystem, 2) Kontrolle möglicher Gefahren (z. B. Sperrzonen, Warnhinweise, etc.), 3) Anforderungen des Personenschutzes, wie z. B. angemessener Schutz der Augen, 4) Unfallmeldeverfahren im Fall von Verletzungen der Augen, und 5) die Bioeffekte von Infrarot-Licht auf die Augen.*

*Bevor Sie fortfahren, lesen Sie bitte alle Warnungen in den Abschnitten 1.3.1, 1.4.1 und 5.5.1 hinsichtlich Sicherheit und Wartung der LED.*

1. Turn the instrument off and disconnect the power cord from the back panel receptacle.
2. Follow instructions in Section 5.5.2 *Case Disassembly* and Section 5.5.3 *Optics Assembly Removal*.

*Note: Before removing the Optics Cover from the Optics Assembly, unscrew and remove the earth ground wire (green and yellow wire) from the Optics Cover. This must be reconnected when reassembling the Optics Assembly.*

*Note: Only the Optics Cover needs to be removed from the Optics Assembly, unless the Optics Base has been damaged.*

3. With the Optics Cover removed, lift the LED Mount from the Optics Base.
4. After replacing the LED, Lens and/or Monitor Detector, reassembly is the opposite of disassembly.

### **5.8.1 LED**

1. Lay the LED Mount (see *Figure 8*) so the “snout” which houses the Monitor Detector faces downward. This prevents the lens and its spacer from falling out during LED replacement.
2. Insert a small, flat-blade screwdriver into one side of the slot in the LED Plug. Rotate the plug counter-clockwise to unscrew it. When it is completely unscrewed, lift the plug and LED Assembly from the mount by gently pulling on the black and red LED wires.
3. Slide the plug off the wires.
4. Thread the wires of the replacement LED Assembly through the plug and reinstall both the LED Assembly and Plug.

*Note: Do not overtighten the plug when screwing it in.*

### **5.8.2 Lens**

*Note: Be sure to handle the lens by the edges ONLY. The special coating on the lens is easily scratched. If the lens surface is damaged in any way, the lens will not work and must be replaced.*

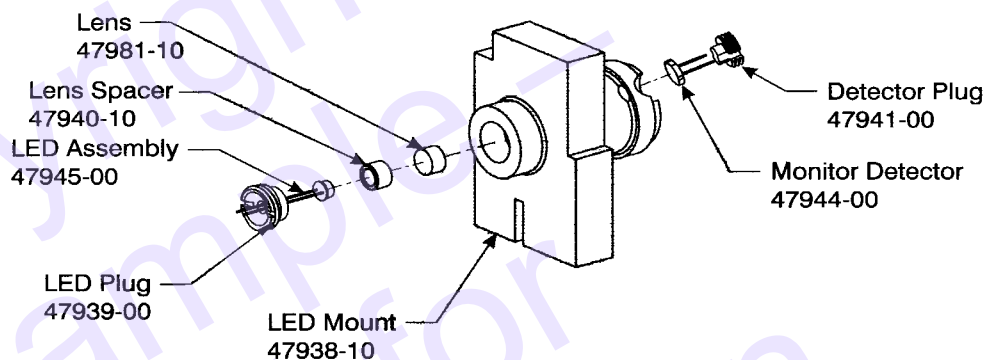
1. Remove the LED Assembly and Plug as described in Section 5.8.1.
2. Tip the LED mount over onto a soft, clean cloth so the spacer and lens roll gently out of the mount.
3. With tweezers, place the new lens into the LED mount, convex surface down (toward the Monitor Detector).
4. Place the spacer on top of the lens.
5. Install the LED Assembly and Plug as described in Section 5.8.1.

### 5.8.3 Monitor Detector

1. Lay LED Mount so the “snout” that houses the Monitor Detector faces up.
2. Using a small, flat-blade screwdriver, unscrew the Detector Plug. When it is completely unscrewed, gently pull on the black and red Monitor Detector wires to lift the plug and Monitor Detector Assembly from the mount.
3. Slide the plug off the wires.
4. Thread the wires of the replacement Monitor Detector Assembly through the plug and reinstall both the Monitor Detector Assembly and Plug.

**Note:** Do not overtighten the plug when screwing it in.

Figure 8 2100AN IS LED Mount



### 5.9 Lithium Battery Replacement

1. Remove the top cover of the instrument (see *Figure 10* on page 55).
2. Locate the lithium battery next to the serial I/O connector on the CPU board.
3. Gently lift the spring on the battery holder, and slide the battery out of the holder. Be careful not to over-stress the spring.
4. Place the new battery (Cat. No. 44186-00) in the holder so that the positive (+) side faces up, again being careful not to over stress the spring.
5. Refer to sections 7.2, 7.3 and 7.4 in the *2100AN IS Instruction Manual* for instructions on setting the time and date.

### 5.10 Sample Chamber Spring Replacement

To determine if a sample chamber spring is in need of replacement, place a sample cell in the sample chamber. If the sample cell falls to the bottom of the chamber without applying pressure to the top of the sample cell, the spring needs to be replaced.

**Note:** Unless the lower optics housing is damaged, the optics assembly can be left in place while servicing the internal components.

1. Remove the upper housing from the instrument (see Section 5.5.2).
2. Remove the small Phillips screw on the preamp board.
3. **IMPORTANT:** Record the number adjacent to each detector wire for use in reassembly.