The COSMED Lifecorder PLUS Activity Monitor is the perfect companion for professionals willing to record accurate lifestyle information. Intensity (five levels), daily duration of physical activity, Active Energy Expenditure, steps, distance are some of the fundamental information you need to monitor lifestyle and patient’s compliance. Lifecorder stores up to 60 days of data. USB port allows easy download of data into the management software. Innovative technology with ceramic bar sensor detects gravity and generates electric frequencies, recording physical activity intensity, not just steps. More than 200 research and validation studies published worldwide testify its value and precision. The *waist-positioning* guarantees superior accuracy in activity measurements compared to wrist/arm devices (as demonstrated by several scientific papers).

The mono-axial technology, eliminates artifacts, which alter reliability of measurements. The large graphic LCD screen displays step counts, distance, calorie expenditure, activity minutes and daily targets. Full range of activity measurement data can be analyzed and recorded, then downloaded to a computer for daily, weekly and monthly tracking. Data could be optionally managed with *Fitmate Software 2.0*, a standalone user-friendly Suite, with full integration with Indirect calorimetry, diet plans, energy balance and comprehensive lifestyle reporting. Also available *Lifecorder e-STEP*, a simpler activity monitor without USB download function, but with the same internal mechanism and accuracy as *Lifecorder PLUS*. Provided with seven days memory is ideal for your patients once educated to monitor their own lifestyle.
Personal Data

<table>
<thead>
<tr>
<th>Activity Monitor Report</th>
<th>Day</th>
<th>Avg</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days:</td>
<td>65</td>
<td>17</td>
<td>087</td>
</tr>
<tr>
<td>Partial Days:</td>
<td>2</td>
<td>0</td>
<td>03</td>
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<tr>
<td>Recorded Period:</td>
<td>06/09/09 - 09/06/09</td>
<td>1774</td>
<td>7878</td>
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<tr>
<td>Selected Period:</td>
<td>28/05/09 - 03/06/09</td>
<td>175</td>
<td>785</td>
</tr>
<tr>
<td>Selected Days:</td>
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<td>0</td>
<td>16</td>
</tr>
</tbody>
</table>

Energy Expenditure

- Total Energy Expenditure (Kcal): 2118 Kcal
- Activity Energy Expenditure (Kcal): 314
- Steps: 71370
- Distance (km): 54.5

Steps & Distance

The report shows both the weekly average and the day-by-day values.

Daily Average METs

The report summarizes the daily average METs (in a week) and the day-by-day values.

Initialize the Activity Monitor

The user can set: target activity (calories or steps); target activity in minutes; physical activity lower and upper limits (in METs); parameters to be displayed on the Lifecorder, locked parameters on the parameter.
Lifecorder PLUS
One-axial, solid state accelerometer with USB download function

Customisable Header

Activity Statistics
Detailed information on all data downloaded from the Lifecorder in the monitoring period.

Activity Time
The report shows daily and average time spent in activities with higher level of intensity (above 3 METs) and target levels.

Physical Activity Levels
Lifecorder measures the different intensity levels of activity. Five different levels are identified, based on the Metabolic Equivalent of Task (METs) index. Intensity and energy expenditure of physical activities can be so compared among persons of different weights.

Daily Energy Expenditure
A final pie chart summarizes graphically the average Daily Energy Expenditure and highlights the incidence of activity energy expenditure on overall energy consumption.

Real-time Visualization of Activity Parameters
Activity parameters can be viewed in real-time through the LCD display. The activity monitor has a view memory of 7 days intervals.

Printout report
Lifecorder data complement Fitmate metabolic measurements, allowing an accurate assessment of patient's total energy expenditure (TEE). The intuitive Activity Monitor Report provides a detailed evaluation of patient lifestyle, helping better compliance to weight management plans.

Customisable Header

Fitmate® Wellness Technology

Last Name: DEMO
First Name: FITMATE
Age: 42
Gender: Male
Membership #: 00001
Height (cm): 184.00
Weight (Kg): 69.3
Report Date: 06/07/2008

Activity Monitor

Days: 65
Recorded Period: 06/04/2009 - 09/06/2009
Selected Period: 28/05/2009 - 03/06/2009
Selected Days: 7

Total Energy Expenditure (Kcal)

Activity Energy Expenditure (Kcal)

Activity Time (min)

Steps (#)

Distance (km)

Intensity Level Very Light (hh:mm)
Intensity Level Light (hh:mm)
Intensity Level Moderate (hh:mm)
Intensity Level Heavy (hh:mm)

Total Energy Expenditure (Kcal)

Average METS

RMR 1805

AEE 313

% RMR 85%

89.04

1.9

2230

2175

1995

1941

54.5

89.04

12.43

00.21

00.17

1,9

Real-time Visualization of Activity Parameters
Activity parameters can be viewed in real-time through the LCD display. The activity monitor has a view memory of 7 days intervals.
**Lifecorder PLUS**

- Set up
- Step count
- Activity min.
- Calories burned
- Memory

**Lifecorder e-STEP**

- Same technology as Lifecorder PLUS, but without USB download function. Affordable and accurate, it is ideal for private use by clients and by monitored patients, after an education session on how to keep a correct lifestyle.

**Main Functions**

**Lifecorder PLUS**
- Step counts, Activity minutes, Distance, Activity calories, Total calories, Physical activity intensity graph (METs), Target settings (Step, Activity minutes, Activity calories), Physical activity intensity range setting for activity minutes, Evaluation (Achievement message & Balance to goal for steps, Activity minutes, Activity calories), Clock, Memory (LCD-view: 7 days, Total: 7 days), Internal memory (80 days)

**Lifecorder e-STEP**
- Step count, Activity minutes, Total calories, Clock, Memory (7 Days)

**Hardware**

- Size: W 70.0 x H 42.0 x D 18.6 mm (excluding belt clip)
- Weight: 48 gr including battery (Lifecorder e-STEP: 40 gr)
- Battery: 1 x button type CR2032 3V
- Battery Life: 2 months (Lifecorder e-STEP: 9 months)

**PC Software Features: Graphic Charts**

- Daily step counts, Weekly average steps, Daily activity minutes, Weekly average activity minutes, Activity level distribution, Activity about 10 minutes or greater, Daily energy expenditure, Daily energy expenditure with intake and weight changes, Weight loss plan and progress, Daily physical activity with all measured values, Physical activity intensity range setting for activity minutes, Evaluation (Achievement message & Balance to goal for steps, Activity minutes, Activity calories), Physical activity intensity graph (METs), Target settings (Step, Activity minutes, Activity calories), Comparison report (printout only)

**PC Software Features: Settings by PC**

- Target step, activity minutes and activity calories, Intensity range and food intake, Selecting display mode, Blind display, Key lock, Autostart, Memory lock/Loop

**Some Validation Studies**

- Tomoda, Y. Baba (1990). Validity of daily energy expenditure estimated by calorie counter combined with accelerometer. JUoEH, 13 (1), 77-82
- Kumahara, Hideaki et al. (2002). Validity assessment of daily expenditure in a respiration chamber by accelerometer located on the waist vs the wrist or in combination. Medicine & Science in Sports & Exercise. 34(5) Supplement 1:S140