1. **Product summary**

The MSA Lite is a sleek, light weight, portable device that analyzes the skin. The MSA Lite measures skin texture, pigmentation, sebum, skin color/tone, keratin, pores, and wrinkles. The cradle has a built in charging system for easy on counter powering.

1.1 **Package contents**

The MSA Lite consists of a main unit, a 50XPL lens, a cradle, a USB cable, and power adapter (see image below).

Before using the MSA Lite, please confirm all parts have been received.

1.2 **Major functions**

The MSA Lite uses a 50X lens and two lighting modes, white and polarized, to analyze each parameter. Captured images and values are stored onto the MSA Lite and can be retrieved by plugging the unit to your PC with a USB cable.
2. How to use the MSA lite

2.1 Parts name

2.2 Power ON/OFF

To power on the MSA Lite, press and hold the left button for about 2 seconds.
Please note the battery needs to be charge sufficiently for the device to operate properly.

When the MSA Lite is on and you press and hold the left button for about 2 seconds, the power will turn off. The battery will charge automatically when put on the cradle. After 10 minutes on the cradle, the MSA Lite will turn off.

2.3 Battery replacement

If you need to replace the battery, remove the screw on the back of the MSA Lite towards the bottom of the handle (see the picture at the right for reference).

2.4 Attaching / Detaching the lens and adjusting focus

The lens can be detached and replaced with other lens magnifications for different applications (i.e. skin, hair, and scalp). In order to detach the lens, turn the lens counter clock wise at the base of the lens. To attach the lens, align the mark of the lens with the five degrees left of the top position on the figure, insert the lens and turn to clock wise direction. To adjust focus, turn the dome little by little so that the image can be seen clearly.

Please note if you change the lens with a different
magnification, you will also need to change the software with the appropriate mode. See the SYSTEM set up for more information.

2.5 Connection with PC via USB

Stored data on the MSA Lite can be transferred to a computer by connecting the USB cable to the computer. The embedded software of the device can also be updated by connecting to computer using a USB interface. The **USB port is located at the bottom of the device.**
2.6 SYSTEM Set up

At the home screen, if the below keys are pressed in sequential order the System Setup screen will appear.

Left button (mode button) -> Front button (capture button) -> Right button (freeze button)

[Lens] : to change the magnification
[USB] : to enable the USB mode to communicate with computer.

Selection of 30x, 50x, 120x lens

The USB connection mode enabled
3. MSA lite program

3.1 How to use embedded software
The MSA lite has software for skin imaging and analysis. The home screen below will appear once the unit has been successfully booted and you can choose the [START] or [SCOPE] menu with the navigation switch.

![Start measurement and View scope](image)

3.2 How to use Scope
By selecting the [SCOPE] menu in the home screen, you can see a live image of customer’s skin. In the scope menu, you can also change the lighting mode (normal for skin texture, PL for pigmentation) with left button and can choose live or freeze mode for imaging with right button.

3.3 Measurement software
After choosing the [START] menu in the home screen, select the customer’s age range by using the navigation switch. Once the customer’s age range has been selected the measurement screen will appear.
The software measures seven parameters, which are all displayed in the measurement screen. Select any parameter icon you want to measure by clicking the center of navigation switch.

After selecting the icon, the software will automatically turn to the correct lighting mode. At this mode, the left button can be used to “go back to the measurement screen,” the right button will “freeze the image or go to the live image mode”, and the center of navigating switch will “analyze the captured image”.

After you have measured the desired parameters, you can see the results by selecting [Results] by clicking on the right button (see below for reference). If you want to go back to the home screen, choose [Home] with the left button.
For example, if you would like to measure and analyze skin texture, choose the [Skin Texture] icon. You can see a live image of the skin, capture the image by pressing the freeze button, and analyze the image by selecting the [Analysis] button. Once the image has been analyzed, go back to the parameter screen by pressing [Prev].

Once a parameter has been measured a yellow check mark will appear on the parameter icon to clearly indicate what has been analyzed.
Pigmentation

With the pigmentation measuring process, images are captured with the polarized lighting mode.

Sebum

In the sebum mode, the device measures and analyzes sebum by taking an image of the Sebutape, which is used by pressing the gray box on the Sebutape against the customer’s skin.

Skin Color

For skin tone, there is no analyzed image shown; however, the results are stored on the device.
In the keratin mode, the device measures through an image of keratin tape, which is a black tape that is placed on the customer’s skin to remove dead skin cells.

For the pore mode, the device measures the pores of skin.

At wrinkle mode, the device measures the wrinkle of skin.
3.4 Results

The analyzed results of each parameter are displayed on two pages. The Results section has two screens. One result screen has four results of items and the other has three results of items. You can toggle the result screen by choosing the [More] button by pressing the left button. The result screens show all the results with the analyzed value and grade, which is categorized as A, B, C. Each grade stands for good(A), normal(B) and below normal(C).

If you choose the thumbnail image of any item by pressing the center of the navigation switch, you can check the original image.
4. Specification

<table>
<thead>
<tr>
<th>Details</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>ARM 500 MHZ</td>
</tr>
<tr>
<td>OS</td>
<td>Linux</td>
</tr>
<tr>
<td>LCD</td>
<td>2.8 inch TFT LCD</td>
</tr>
<tr>
<td>Camera</td>
<td>1.3MP CMOS</td>
</tr>
<tr>
<td>Memory</td>
<td>2GB NAND internal</td>
</tr>
<tr>
<td>Lighting</td>
<td>6 / 9 white LEDs</td>
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<tr>
<td>Battery</td>
<td>Li-Polymer, 1,200mAh</td>
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<td>External I/F</td>
<td>USB / WiFi(optional)</td>
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<tr>
<td>Charging</td>
<td>Charged on cradle</td>
</tr>
<tr>
<td></td>
<td>AC adaptor, 5V DC, 2A</td>
</tr>
</tbody>
</table>

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One year warranty.

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