



KONICA MINOLTA

# JAUNDICE METER JM-103

Captures Data Instantly, Compact, Easy to Operate, Designed for All Skin Colors



Actual Size

Direct Reading

For all Skin Color

Compact

Easy Operation

Direct reading for total serum bilirubin in mg/dL or micro mol/L  
Premature baby measurable (more than 1000g)  
Skin color affects measurement much less than in previous models.  
Non-invasive  
Compact & light weight  
Easy operation  
No disposable required  
No user calibration required  
Minimum 400 times measurements per fully-charged battery  
Long light bulb life (150,000 measurements)  
Built-in checker in charger unit

# Principle

The Jaundice Meter JM-103 determines the yellowness of the sub-cutaneous tissue of a newborn infant by measuring the difference in optical densities for light in the blue (450 nm) and green (550 nm) wavelength regions. The measuring probe has two optical paths (see Fig. 1). The use of this method allows measurement of yellow-ness of the skin and subcutaneous of a newborn infant with the in-fluences of melanin pigment and skin maturity kept at a minimum, which was impossible with conventional methods.

When the measuring probe is pressed against the forehead or sternum of the infant, the built-in xenon lamp flashes, and the light from the xenon lamp is guided to the skin surface through the glass fiber and illuminates the skin. The light is then scattered and absorbed in the skin repeatedly, and finally returns to the glass fiber (sensor side). Of the light that returns to the fiber, the part scattered from shallow areas of the subcutaneous tissue passes through the inner core (short optical path) of the fiber while the part scattered from deep areas of the subcutaneous tissue passes through the outer core (long optical path), and then they reach their corresponding photodiode.

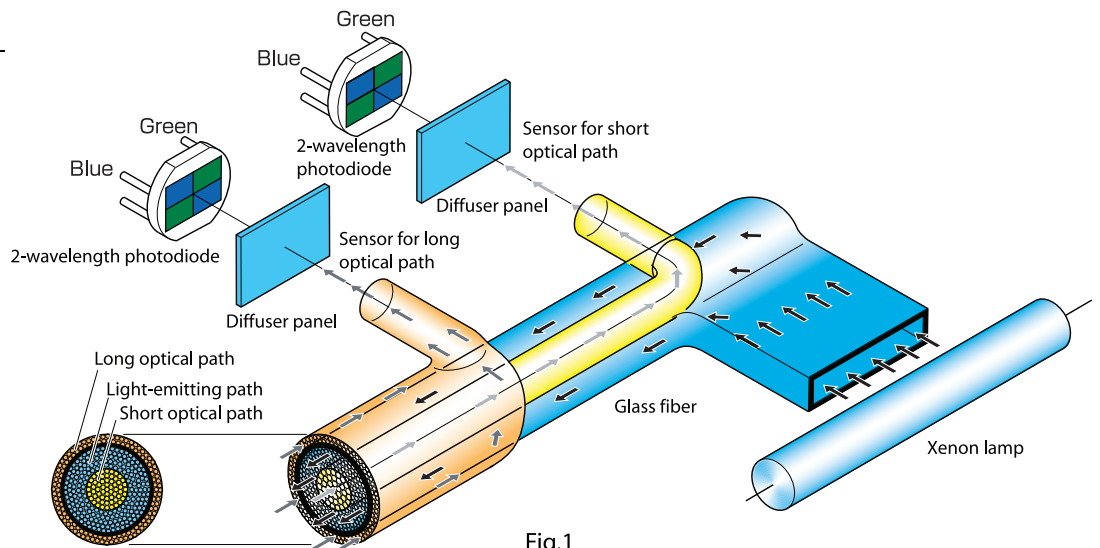


Fig.1

By calculating the difference in optical densities, the parts that are common to the epidermis and dermis will be deducted, and as a result the difference in optical densities between the two wavelength regions can be obtained for the subcutaneous tissue only. Since the optical density difference shows a linear correlation with serum bilirubin concentration, it is converted to serum bilirubin concentration and indicated digitally.

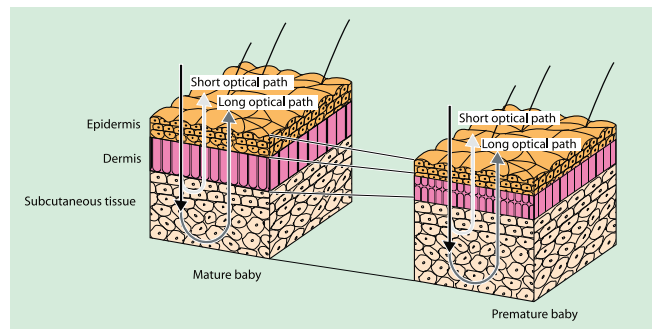


Fig.2

## Main Specifications

Measuring method:	Determines yellowness of subcutaneous tissue by using two optical paths to measure optical density difference at two wavelengths
Measuring range:	0.0~25.0 mg/dL or 0~425 $\mu$ mol/L
Accuracy ( $\sigma$ ):	$\pm 1.5$ mg/dL or $\pm 25.5$ $\mu$ mol/L
Display:	LCD(back light) Figure: 3 figures Unit: mg/dL, $\mu$ mol/L(changeable) Battery mark Ready lamp: green LED lit
Light source:	Pulse xenon arc lamp
Light source life:	150,000 measurements
Sensors:	Silicon photodiodes
Power source:	Special Ni-MH battery
Protection type and level:	Internally powered instrument, BF type
Possible number of Measurements:	At least 400 measurements when fully charged
Operating temperature/humidity range:	10 to 40°C, relative humidity 30 to 95% or less with no condensation
Storage temperature/humidity range:	-10 to 50°C, relative humidity 10 to 95% or less with no condensation
Dimensions:	48mm(W) $\times$ 154mm(H) $\times$ 32mm(D)
Weight:	150g(including Ni-MH battery)
Other function:	Averaging function
Standard accessories:	Charger Unit (with a built-in checker) AC Adapter, Strap, Soft Case

### Charger Unit (with a built-in checker)



#### SAFETY PRECAUTIONS

For correct use and for your safety, be sure to read the instruction manual before using the instrument.

- Always connect the instrument to the specified power supply voltage. Improper connection may cause a fire or electric shock.
- Be sure to use the specified batteries. Using improper batteries may cause a fire or electric shock.

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<http://konicaminolta.com/instruments/about/network>