GOLDLUX

NEO-NATAL PHOTOTHERAPY METERS

The phototherapy radiometers have been designed to measure the effective irradiance of blue light used for the treatment of jaundice in new-born babies (hyperbilirubinaemia).

The spectral response of the instrument has been tailored to match the response of human skin to the therapeutic effect of the light sources used in the incubators (as published in the medical literature). Thus the instruments can also be used as reliable indicators of lamp effectiveness with age (burning hours).

The detector is a long-lasting, stable silicon photodiode with excellent linearity. The effective irradiance is indicated in $\mu W/cm^2$.

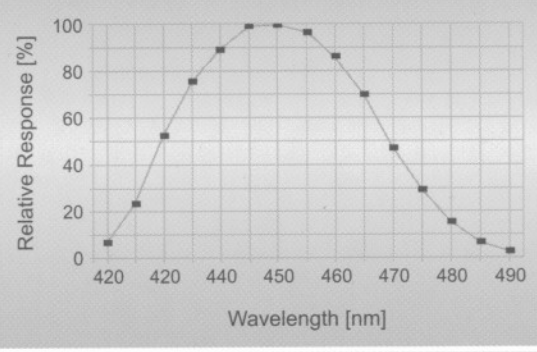
Available Instrument Range:

1. Standard autoranging meter-incorporating detector and readout.
2. Standard system probe GBILP-1 and readout GOR-1 connected by cable.
3. Microprocessor System Smartmeter display GRP-1 with bilirubin probe GPP-1 with superior measurement capability and serial PC interface.

Specifications:

Measuring range:	0-200 000 μW/cm^2
Accuracy:	± 5%
Analog output:	1-1,999 V full scale
Readout:	4½ digit LCD display
Temperature range:	0 to 50°C
Power Source:	1 type PP3 9 V battery
Dimensions:	150 x 80 x 35 mm
Mass:	220 g (incl. Battery)

GOLDULIX PHOTOTHERAPY METER



SPECTRAL RESPONSE OF BILIRUBIN PHOTOTHERAPY METERS

Wavelength	Relative spectral Response (%)
420	6
425	22
430	52
435	75
440	88
445	99
450	100
455	96
460	86
465	69
470	46
475	29
480	15
485	6
490	2

Calibration:

Instrument is factory pre-set to read within specified accuracy, traceable certificate is supplied.

For effective treatment the infant should be exposed to an amount of therapeutically effective blue light in the order of 5-10 μW/cm^2. The length of exposure to the blue light is determined by the physician who also takes into account the response and condition of the baby in the incubator.

It is important to avoid exposing an infant to wavelengths of light of no therapeutic benefit in clearing bilirubin from the blood. Therefore special lamps are used in the incubators, which radiate most of their output in the therapeutically effective wavelength region.

The definition of a standardized action spectrum for hyperbilirubinaemia is currently the task of of Technical Committee TC 6-44 of the International Commission on Illumination (CIE). For more information see the CIE Div 6 website at:
http://physics.nist.gov/Divisions/Div844/CIE/CIE6/TCs/tcs.html

For other Goldilux instruments used in conjunction with Bilirubin meters see our visible light meter range and UV-meter range.

Other applications:

For monitoring the output of curing lamps used by various industries (fibre manufacturers, printers), where peak sensitivities in the spectral range of 400 - 500 nm are applicable. A minimum light intensity is required for satisfactory manufacturing quality. A decrease in light source output leads to incomplete curing and consequent production losses.

Supplier information: