

JUL 11 2002

K021959

510(K) SUMMARY OF SAFETY AND EFFECTIVENESS

**Dolphin Medical 2100 Pulse Oximeter and Accessories
7/11/02**

Submitter Company

Dolphin Medical – FL
13801 McCormick Dr
Tampa, FL 33626

Contact: Jon Werner
Phone: 813-818-7488
Fax: 813-818-7488

Sponsor Company

Dolphin Medical, Inc.
12525 Chadron Avenue
Hawthorne, CA 90250

Contact: Tammy Conway
Phone: 310-349-2308
Fax: 310-978-1816

Manufacturing Facility

Opto Sensors (M) Sdn. Bhd.
No. 6 Jalan Angkasa Mas 1
Tebrau Industrial Estate II
81100 Johor Bahru, Malaysia

Common, Classification & Proprietary Names

Common Name: Oximeter
Classification Name: Oximeter Class II – 21 CFR 870.2700 – 74 DQA
Proprietary Name: Dolphin Medical Stand-Alone Pulse Oximeter, Model No. 2100 and Accessories.

Intended Use

The Dolphin Medical Stand-Alone Pulse Oximeter Model 2100 and Accessories are indicated for the continuous noninvasive monitoring of functional oxygen saturation of arterial hemoglobin (SpO₂) and pulse rate (measured by an SpO₂ sensor). The Dolphin Medical Pulse Oximeter Model 2100 and Accessories are indicated for use with adult, pediatric, and neonatal patients during both motion and no motion conditions and for patients who are well or poorly perfused in hospitals, hospital-type facilities and home environments.

Predicate Device

The Dolphin Medical Pulse Oximeter and Accessories is substantially equivalent to the following currently marketed device(s):

- Dolphin Medical Stand-Alone Pulse Oximeter, Model No. 2100 and Accessories #K002036, #K012533, #K012626, and #K020075.

The Dolphin Medical Pulse Oximeter Model 2100 and Accessories is a portable stand-alone device, connecting cable, and oximetry sensor(s) to noninvasively calculate the functional oxygen saturation of arterial hemoglobin (SpO₂) and pulse rate for adult, pediatric and neonatal patients.

The monitor consists of a screen that displays the pulse plethysmographic waveform, the pulse rate, SpO₂ value, the high and low SpO₂ and pulse rate alarm limits, alarms, trends and status messages. It contains the electronic hardware and software that receives and calculates the signals from the LEDs within the sensor to determine the functional oxygen saturation of arterial hemoglobin (SpO₂) and pulse rate, and provide for the connection to the connecting cable.

The Dolphin Medical Pulse Oximeter Model 2100 is available in one configuration as a portable stand-alone oximeter that is 10 cm / 3.94 inches high, 27.5 cm / 10.83 inches wide, 25 cm / 9.84 inches deep and weighs about 4 kg / 8.8 lbs. The unit is powered either with a voltage input of 100-240 Vac, 50-60 Hz or with a sealed lead-acid battery with an operating time of approximately 4 hours based upon 2 Ampere hour battery (200mA OEM Module, 300mA System Module) and a charge time of about 4.5 hours to 80% capacity.

The extension cable connects between the monitor and oximetry sensor(s) and transfers LED drive power and the calibration drive to the oximetry sensor from the monitor and the monitor receives the detector signal from the oximetry sensor.

The extension cable is available in one configuration and is approximately 8 feet / 2.44m in length, and the sensor(s) are approximately 18 inches / 45.72 cm in length.

The sensor(s) measure light absorption of blood from two light emitting diodes (LED's). Oxygen saturated blood absorbs light differently as compared to unsaturated blood. The amount of light absorbed by the blood is used to calculate the ratio of oxygenated hemoglobin to total hemoglobin in arterial blood.

The oximetry sensor is available in either a disposable or reusable configuration, and with one configuration for the extension cable (8 feet).

The Dolphin Medical Stand-Alone Pulse Oximeter, Model No. 2100 and Accessories have been designed to comply with the following standards:

1. CSA C22.2 No. 601.1
2. IEC 601-1, Part 1 and Amendments 1 and 2
3. IEC 601-1-1, Part 1
4. IEC 601-1-2, Part 1
5. ISO 9919: 1992
6. EN 865: 1997
7. FDA Guidance Document for Pulse Oximeters: 9/7/1992
8. ASTM 1415:1992, and Draft 10.1
9. UL2601-1: Second Edition, 1997
10. IEC 60068-2-6
11. IEC 60068-2-27
12. IEC 60068-2-64
13. ISTA Procedure 2A

The Dolphin Medical Stand-Alone Pulse Oximeter, Model No. 2100 and Accessories is substantially equivalent in design concepts, technologies and materials to the Dolphin Medical Stand-Alone Pulse Oximeter Model No. 2100 and Accessories previously reviewed. Additional performance validation testing has been performed for the 560 neonatal disposable sensor and has been included in this submission.



JUL 11 2002

Food and Drug Administration
9200 Corporate Boulevard
Rockville MD 20850

Mr. Jon Werner
Quality Assurance Manager
Dolphin Medical, Incorporated
Dolphin Medical-FL
13801 McCormick Drive
Tampa, Florida 33626

Re: K021959
Trade/Device Name: Dolphin Medical Stand-Alone Pulse Oximeter, Model 2100
Regulation Number: 870.2700
Regulation Name: Oximeter
Regulatory Class: II
Product Code: DQA
Dated: June 12, 2002
Received: June 14, 2002

Dear Mr. Werner:

We have reviewed your Section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to such additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

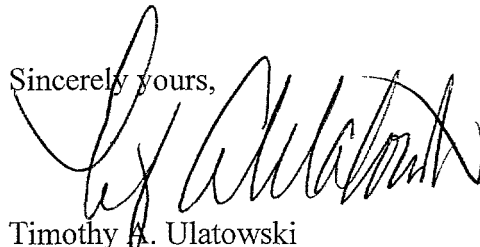
Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies.

You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Part 801); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820); and if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

This letter will allow you to begin marketing your device as described in your Section 510(k) premarket notification. The FDA finding of substantial equivalence of your device to a legally marketed predicate device results in a classification for your device and thus, permits your device to proceed to the market.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801 and additionally 21 CFR Part 809.10 for in vitro diagnostic devices), please contact the Office of Compliance at (301) 594-4646. Additionally, for questions on the promotion and advertising of your device, please contact the Office of Compliance at (301) 594-4639. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21CFR Part 807.97). Other general information on your responsibilities under the Act may be obtained from the Division of Small Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or (301) 443-6597 or at its Internet address <http://www.fda.gov/cdrh/dsma/dsmamain.html>

Sincerely yours,



Timothy A. Ulatowski
Director

Division of Anesthesiology, General Hospital,
Infection Control and Dental Devices
Office of Device Evaluation
Center for Devices and
Radiological Health

Enclosure

INDICATIONS FOR INTENDED USE FOR 2100 PULSE OXIMETER

510(k) Number (if known): K021959

Device Name: Dolphin Medical Stand-Alone Pulse Oximeter, Model No. 2100

July 11, 2002

Indications for Use:

The Dolphin Medical Stand-Alone Pulse Oximeter, Model No. 2100 and Accessories are indicated for the continuous noninvasive monitoring of functional oxygen saturation of arterial hemoglobin (SpO₂) and pulse rate (measured by an SpO₂ sensor).

Accessories:

Dolphin ONE Disposable Sensors

Dolphin ONE 210 Reusable Finger Clip intended for adults / pediatrics greater than 66.14 lbs. (30kg).

Dolphin ONE 110 Extension Cable

(PLEASE DO NOT WRITE BELOW THIS LINE - CONTINUE ON ANOTHER PAGE IF NEEDED)

Concurrence of CDRH, Office of Device Evaluation (ODE)

(Division Sign-Off)

Division of Cardiovascular, Respiratory, and Neurological Devices

510(k) Number: _____

Prescription Use
(Per 21 CFR 801.109)

OR

over-the-counter Use _____

Anesthesia, General Hospital, Infection Control & Dental Devices