



LED DayLite[®] Micro

USER GUIDE
Model: DVI-LEDMC
Ver. 6.23 (En)

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DESIGNS FOR VISION, INC. LED DAYLITE® MICRO

The Designs for Vision LED DayLite® Micro Headlights provide bright, portable light to the laboratory environment. They are designed to be comfortable yet functional. The headlights are made to clip onto a wide variety of frames and/or headsets.

INDICATIONS FOR USE

The Designs for Vision LED DayLite® Micro is an illumination device used to aid in visualization for dental professionals. It is intended to illuminate various tissues and/or body parts. This device is intended to be used by dental professionals, requiring no specific training other than what is contained in this manual.

CONTRAINDICATIONS

None known

WARNINGS



Save these instructions. This manual contains important safety and operating instructions



Always examine the unit and accessories for damage before commencing use. Damaged accessories must not be used and must be replaced. Use original Designs for Vision, Inc. parts and accessories only. The use of unapproved parts may void the warranty.

To reduce the risk of battery explosion, follow these instructions

Do not Autoclave

For indoor use only

If the equipment is used in a manner not specified by Designs for Vision, Inc., the protection provided by the equipment may be impaired

A spent battery should not be used. Contact Designs for Vision Inc. for ordering a replacement



This equipment and accessories do not contain serviceable parts. All repairs need to be conducted by Designs for Vision, Inc. service personnel

Do not let liquids enter openings or ports. Do not immerse parts in solutions. Allowing liquids to enter openings or ports may void warranty.

Equipment not suitable for use in the presence of a flammable anesthetic mixture with air or in an oxygen rich environment

Care must be taken when operating this equipment around other equipment to avoid reciprocal interference. Potential electromagnetic or other interference could occur to this or to the other equipment. Try to minimize this interference by not using other equipment in conjunction with this device

No modification of this equipment is allowed. Performing unauthorized modification on the equipment, accessories or the product labelling may void the warranty



Improper use of battery may cause them to get hot, ignite or explode. Always follow all safety precautions listed in this manual

Never make changes or modifications to the power pack

Do not short circuit

Do not expose to fire

Protect battery from fluids and damp environments

It is highly recommended that batteries are charged with the supplied power supply




Waste of electrical and electronic equipment must not be disposed as unsorted municipal waste. It must be collected separately, and must be disposed as per local regulations



Do not plug or unplug the headlight to/from the power pack while the power pack is on.

SPECIFICATIONS

LED DayLite® Micro		Model Number: DVI-LEDMC	
POWER REQUIREMENTS			
<i>Battery Power : 3.7VDC, 3.5Ah 18650 Li-Ion</i> <i>For Charging : USB 5V Power Supply</i> Input : 100-240VAC, 50/60 Hz, .35A Output : 5.0VDC, 2.0A max			
ILLUMINATION		<i>Measured with a cosine corrected light meter at 12"</i>	
UltraMini®/ UltraMini® IR / UltraMini® HDi™/UltraMini® IR HDi™		High	55,000 lux ± 10%
		Low	30,000 lux ± 10%
RUNTIME		<i>Measured with a fully charged battery</i>	
UltraMini®/ UltraMini® IR / UltraMini® HDi™/UltraMini® IR HDi™		High	5.5 hours +/-10%
		Low	12 hours +/-10%
DIMENSIONS			
POWER PACK:		3.85" x .95" x .88"	
WEIGHT:		2.5 oz.	
UltraMini® HEADLIGHT:		.76" Dia. x 1.27"	
WEIGHT:		.49 oz.	
UltraMini® HDi™ HEADLIGHT:		.76" Dia. x 1.27"	
WEIGHT:		.50 oz.	
UltraMini® IR HEADLIGHT:		1.5" x 1.1" x .81"	
WEIGHT:		.58 oz.	
UltraMini® IR HDi™ HEADLIGHT:		1.5" x 1.1" x .81"	
WEIGHT:		.61 oz.	
ENVIRONMENTAL OPERATING CONDITIONS			
TEMPERATURE:		10°C to 40°C	
RELATIVE HUMIDITY:		30% to 75%	
ATMOSPHERIC PRESSURE:		700 to 1060 hPa	

TRANSPORT & STORAGE	
TEMPERATURE:	-40°C to 70°C
RELATIVE HUMIDITY:	10% to 100% including condensation
ATMOSPHERIC PRESSURE:	500 to 1060 hPa
APPROVALS	
UL 61010-1: 2012, CAN/CSA C22.2#61010-1: 2012, IEC 61010-1:2010, IEC 60601-1-2:4th Class B, IEC 62133	
EQUIPMENT CLASS:	 Class II
INGRESS OF WATER:	IPX0 (ordinary equipment)
MODE OF OPERATION	Continuous
PROTECTION FROM SHOCK:	NO APPLIED PARTS
OVERCURRENT PROTECTION	Firmware Controlled Protection
METHODS OF STERILIZATION	Not Intended to be Sterilized
OXYGEN RICH ENVIRONMENT	Not Intended for Oxygen Rich Environments
PATENTS:	8,851,709; 8,215,791; 7,690,806; RE46,463; D600,728; D589,545 HDi™ Technology Patent Pending

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DEVICE DESCRIPTION

The UltraMini® and UltraMini® IR generate a 2.75" spot of light at a 12-inch working distance with up to 55,000 lux. The UltraMini® HDi™ and UltraMini® IR HDi™ generate a 3" spot of light at a 12-inch working distance with up to 55,000 lux. All lights have up to 12-hour battery runtime. and have a correlated color temperature of 5800K.

The LED DayLite® Micro includes these main components:

- Power Pack(s)
- USB Power Supply
- USB Power Cord
- UltraMini® Headlight, or
- UltraMini® IR Headlight, or
- UltraMini® HDi™ Headlight, or
- UltraMini® IR HDi™ Headlight
- UV/Blue Light Filter (installed)
- Headlight Cable

Accessories include:

- One or Two Holsters
- Belt Clip
- Hex Drivers (2)
- T-Mount Bracket (*sold separately*)
- Operation Manual
- Registration Card
- Cable Wrap Kit

DIRECTIONS FOR USE

CHARGING THE BATTERY

Remove the components from the shipping container, checking that all parts on the packing list have been received. Carefully remove

NOTE: The batteries need to receive a full charge before initial operation

the headlight, power packs, USB power supply and USB power cord from the packaging carton.

The USB power supply is designed to meet multi-national regulatory requirements and has multi-input voltage capability to accommodate various line voltages from 100-240 VAC. The power packs can be charged from any standard 5V USB output however, it is recommended that they are charged with the supplied USB power supply for optimal charge times.

Plug the large

end of the USB power cord into the charger port of the USB power supply (*Fig. 2*).

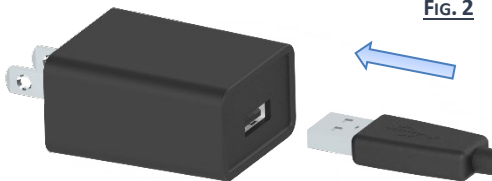


FIG. 2

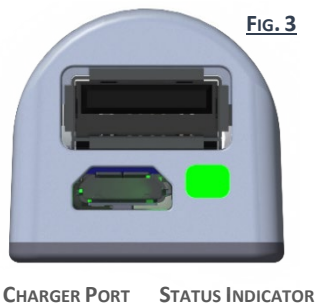


FIG. 3 Connect to an available AC outlet.
NOTE: International adapters are available through Designs for Vision; refer to the list on page 16. Plug the small end of the power

cord into the charger port on the power pack (Fig. 3).

NOTE: The connectors only fit in one direction. Do not force together.

The power button light will start pulsing to indicate the unit is in “Smart Charge” mode. The status indicator (Fig. 3) will display the current state of charge. The LED will change colors as the battery charges; going from **RED**

to **ORANGE** to **GREEN**. When the power button light remains steady, the unit is fully charged. You can now disconnect the power cord from the power pack.



FIG. 4

USING THE HEADLIGHT

Place the headlight onto the t-mount bracket for your frame. Connect the small end of the headlight cable to the headlight. Connect the large end of the headlight cable to the headlight port on the top of the power pack. The headlight can be adjusted up and down to align with your point of view.

The headlight can then be locked into that position using the provided driver. Locate the hex in the locking shaft of the headlight



(Fig. 5). Place the driver into this opening and turn clockwise to tighten the shaft. To unlock the position, loosen the shaft by turning counter-clockwise.

NOTE: The shaft will only turn a limited distance. Do not force in either direction.



NOTE: Before inserting or removing any headlight cable from the power pack make sure the power pack is OFF

The power pack **MUST BE OFF** before plugging in

FIG. 6



the headlight cable into the headlight (Fig. 6). The micro USB connector can only be plugged in one way. The indicator on the connector must be facing in the direction shown. Connect the large end of the headlight cable to the headlight port on the top

of the power pack.

Press the power button on the front of your battery pack. The headlight will turn on at high intensity. The power button will illuminate and the status indicator will display the current state of charge. A second press of the power button will lower the light intensity of the headlight. A third press turns the power pack off.

The LED DayLite® Micro also incorporates a Low Battery Warning system. With approximately ten (10) minutes of battery power remaining, the headlight will flash three times. At five (5) minutes remaining, the headlight will flash another three times. At 30 (thirty) seconds remaining, the headlight will flash continually until the battery is completely depleted.

A UV/blue light filter is provided to prevent premature curing of dental composites (*comes pre-installed*). To use, slide the filter over the front of the headlight until completely seated (*Fig. 7*). Using the supplied tool, tighten the set screw on the bottom of the filter to properly secure to the headlight. You can now rotate the UV/blue light filter into and out of the path of light, as required.

FIG. 7



NOTE:


Be careful to not overtighten set screw when installing.

The UltraMini® IR HDi™ incorporates an infrared (IR) sensor to allow for activation/deactivation of the headlight using only simple hand gestures. Located on the top of the headlight is the built-in sensor (Fig. 8).

Once power is applied from the power pack, move your hand over the sensor about four to six inches above. Wave your hand once to shut the light off, a second time to turn the light back on.

The UltraMini® IR HDi™ is designed to look for an *intentional* wave of your hand. To accomplish this, the headlight utilizes advanced circuitry that constantly monitors the headlight's position. It only allows operation if the headlight is relatively still and in an upright position. Simply put, if the headlight is hanging downwards or if it is moving, then the motion sensor will be deactivated. ***NOTE: The sensor does not turn off the power pack. In***



order to shut down power to the headlight, you need to press the button on the power pack.  Please see the guide sheet included with your light.

USING THE INTUITIVE RESPONSE ULTRAMINI HDI™

Your new Designs for Vision LED DayLite® UltraMini IR™ headlight employs Infrared sensing technology along with on-board biometrics to provide a reliable user interface. When your LED headlight is first turned on, it will remain on for a period of approximately five (5) seconds. During this time you may freely adjust the position of the headlight as shown in Figure 9.

After this time is up, the light will blink twice to indicate that it is entering biometric mode.

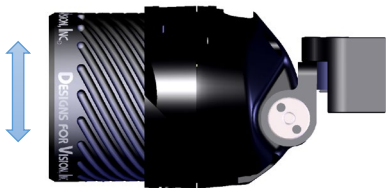


FIG. 9

Once in biometric mode, your LED headlight constantly monitors body position to determine if you are in your working position. When in your working position, the LED

headlight will be on. If you look up from your working position the LED headlight should turn off automatically.

Changing your working position: The working position of the headlight can be changed at any time. To do this, rotate your headlight or change your body position that best fits your working style.

Once this position is found, place your finger directly onto the IR sensor (blue arrow) and hold it there as shown in Figure 10. The light will blink faster





FIG. 10



and faster until eventually it turns on and stays on (approximately two (2) seconds). Remove your finger from the sensor, and the current position of the LED headlight will be saved as your new working position.

UNDERSTANDING THE STATUS INDICATOR

The LED DayLite® Micro incorporates an advanced status monitoring system. The following table describes what each indication signifies:

	SOLID GREEN: FULLY CHARGED BATTERY
	SOLID/PULSING RED: LOW BATTERY
	SLOW BLINK RED: BATTERY SPENT. PLEASE CONTACT DESIGNS FOR VISION, INC. FOR FURTHER ASSISTANCE
	FAST BLINK RED: GENERAL ERROR. PLEASE CONTACT DESIGNS FOR VISION, INC. FOR FURTHER ASSISTANCE

NOTE: A spent battery should not be used. Contact Designs for Vision Inc. for ordering a replacement.

NOTE: Discard batteries in accordance with all regulations and contact Designs for Vision, Inc. for a replacement.

HOLSTER OPERATION

The LED DayLite® Micro is supplied with a holster to allow you to swivel the power pack on your belt. Simply snap the holster onto

the back of the power pack in the orientation shown (Fig. 11). The holster should hold firmly to the power pack.

To release, pull back on one of the tabs and lift out power pack. Slide the back of the holster into the opening on the belt clip. Make sure you hear an audible “click” when properly seated. You can now attach it to your belt to carry it around with you.

FIG. 11



INSPECTION AND PREVENTATIVE MAINTENANCE

- Clean lenses with a standard glass cleaner and a soft, lint-free cloth, making sure not to scratch the surface. It is recommended for disinfection that all the exposed plastic sections of the headlight be wiped with Lysol IC surface disinfectant/cleaner or an equivalent plastic-safe cleaner.

Note: Do not use alcohol, phenol, ammonia, or iodine complex

solutions






- Wipe the sections rather than spraying onto plastic parts.
Note: Do not let liquids enter openings or ports. Do not immerse parts in solutions. Using solutions other than recommended may void warranty. Allowing liquids to enter openings or ports may void warranty.
- Wipe cables with plastic-safe cleaners, if necessary. Do not allow cleaners to get onto the cable connectors as it may cause the electrical terminals to corrode
- It is *suggested* that power packs be replaced every 24 months to ensure proper operation

REPLACEMENT PARTS

UltraMini®	4929-3000-0002
UltraMini® HDi™	4902-3000-0001
UltraMini® IR	4933-3000-0001
UltraMini® IR HDi™	4932-3000-0001
Holster	0030-4911-0001
Belt Clip	4911-0001-0029
Cable	4911-0001-0022
USB Power Supply	4903-0002-2019
United States Adapter	4911-0001-0016
European Adapter	4911-0001-0016

Australian Adapter	4911-0001-0016
UK Adapter	4911-0001-0016
UK Grounded Adapter	4911-0001-0016

DESCRIPTION OF VARIOUS SYMBOLS

	<i>ATTENTION: CONSULT ACCOMPANYING DOCUMENTS</i>
	<i>CAUTION: HOT SURFACE</i>
	<i>INDICATES CONFORMITY WITH MDD 93/42/EEC ANNEX VII</i>
	<i>INDICATES WHERE THE UNIT CAN BE TURNED ON AND OFF</i>
	<i>READ ACCOMPANYING DOCUMENTS</i>

WARRANTY

The UltraMini[®], UltraMini[®] HDi[™], UltraMini[®] IR and UltraMini[®] IR HDi[™] are warranted against imperfections, defects in materials, and workmanship for four years. The power supply and cables are warranted for one year. The power pack is warranted for two years. Any damage caused by improper maintenance as described in the manual may not be covered by the warranty.



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