

CLEANING, STORAGE, MAINTENANCE

Exterior surfaces of headlight, headband, comfort pads, battery pack, charger, cables and cords can be cleaned using a gauze pad or cotton swab moistened with 70% isopropyl alcohol or mild soap. After cleaning, wipe area with a lint free soft cloth moistened with water to remove any residue from cleaning products.

DO NOT immerse or spray the headlight, battery pack or charger with disinfecting liquids or sterilizers, nor should any liquids be poured on the lens, lens housing or cable connections. Make sure no liquid comes in contact with the headlight, electrical connectors, charger or battery packs.

To ensure long life of the headlight, battery packs and chargers, Enova recommends storing them in the Carrying Case.

Enova recommends daily recharging of the battery pack with the supplied battery charger to prepare for subsequent usage. Enova recommends disconnecting the battery packs from the charger after fully charged.

For proper hygiene, it is recommended to replace the comfort pads every 3 – 6 months. Users may order additional comfort pads from Enova or your local distributor.

Lens - Avoid scratching or striking the front lens as reduction in light transmission may occur.

SYMBOLS LEGEND



Manufactured Date



Manufactured By



Caution



Part Number



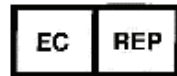
Follow Instructions for Use



Conformité Européenne/
European Conformity



Recycle



Authorized Representative
in the European Community



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PN 61776-001 Rev L

INSTRUCTIONS FOR USE

ENOVA ILLUMINATION LED SURGICAL HEADLIGHTS AND BATTERY PACKS

PLT SERIES

XLT SERIES



INTENDED USE

Enova Illumination LED Surgical Headlight Systems are intended to be used by surgeons, medical professionals, dentists, veterinarians, or other healthcare professionals as an adjunct light source during clinical or surgical procedures in a medical setting.

Enova Headlights output is measured at a distance of **14 inches (35cm)** and powered using rechargeable lithium-ion battery packs. The headband is fully adjustable to various head sizes. The light's angles are adjustable using the pivot bracket, which allow for coaxial alignment of the headlight. All Enova headlights and batteries are serialized. The serial number for the headlights is located on the label affixed under the comfort pad at the back of the headband. The serial number for the battery is located on the back of the battery.

WARNINGS AND CAUTIONS

- ▶ Prior to operation, users of Enova's LED Surgical Headlight Systems should read and understand the operation manual for all equipment used in conjunction with the headlight. Contact Enova Illumination or your local distributor for service and warranty information.
- ▶ Do not look directly into headlight when illuminated. Do not shine light directly into patient eyes or face. Due to intensity of light, eye injury may result. Patient's eyes should be appropriately protected in surgeries involving face or head.
- ▶ After a few minutes of operation, the headlamp housing may become warm to the touch. This is normal and functions to dissipate heat from the LED. Always use a surgical glove, or sterile cloth to adjust the angle of the lens when in use.
- ▶ Use only ENOVA SUPPLIED CHARGERS AND BATTERIES. Use of other chargers or batteries may result in fire, explosion, or damage to the battery packs or lights and will void warranty. Battery pack must be powered off when charging. **DO NOT USE OR STORE BATTERY CHARGER IN OPERATING ROOM OR SURGERY SUITE.**
- ▶ All Enova headlights are designed to be wireless. **DO NOT USE THE HEADLIGHT WHILE BATTERIES ARE CHARGING.**
- ▶ Do not use the headlight, batteries or charger in explosive gas environments.
- ▶ Do not autoclave, immerse or submerge in liquid, spray with liquids or leave the light "on" when inside the carrying case as it will cause damage to the headlight or may cause a fire.
- ▶ Please consult local regulations for the disposal of electronic products.
- ▶ **DO NOT INTERCHANGE BATTERY CABLES.** Use specified cable for correct headlight otherwise headlight will function abnormally and may damage the circuitry causing the light to fail.

WARRANTY, SERVICE AND RETURNS

SCOPE OF WARRANTY

This limited warranty covers the replacement of parts, repairs and associated labor. Except as otherwise set forth herein, Enova shall not be liable or responsible for any other actions or damages (special, consequential or incidental) related to the products set forth herein. The purchaser is responsible for the return of the product to Enova or to an authorized distributor and bears the costs of shipping and insurance. All Enova products carry a 30 day money-back policy.

WARRANTY TERMS

All Enova products are warranted to be free of original defects in material and workmanship and to perform in accordance with specifications articulated in this manual for the following terms from the date of purchase:

- ▶ LAMP AND LED - 5-year limited warranty
- ▶ BATTERIES, BATTERY PACKS AND CHARGER - 1-year limited warranty
- ▶ HEADBAND AND LAMP ATTACHMENT MECHANISM - 1-year limited warranty
- ▶ CORDS, CABLES, CONNECTORS AND ACCESSORIES - 1-year limited warranty

NOTE: All warranties are conditioned upon use of the products under normal conditions and when used solely for the intended purpose (i.e. medical use in a medical setting). We reserve the right to determine cause of breakage or failure of all items.

LIMITATIONS OF WARRANTY

This warranty is void and does not apply if:

- ▶ The headlight is not used in accordance with Enova's instructions, recommendations, or in a setting/manner outside of its intended use.
- ▶ The headlight is repaired or serviced by persons other than Enova, Enova Distributors, or an Enova authorized representative.
- ▶ The headlight is used with or powered by batteries or battery charger other than authentic and authorized Enova accessories or parts.
- ▶ Damage is caused due to accidental damage, tampering, misuse, neglect, improper shipping or packaging, or excessive wear and tear.

RETURN AND SERVICE

We accept all returns provided that they are shipped (insured) within 30 days of receiving the light and are returned in resalable condition. Damages incurred during return shipment due to improper packaging are not covered by the warranty. Shipping costs are not covered by any policies and are the responsibility of the purchaser.

For all returns, warranty, and service issues, please follow these steps:

- 1) Contact Enova to discuss the problem you are experiencing
- 2) Receive an RMA (Return Material Authorization) tracking number
- 3) Arrange payment for repairs and service outside of the warranty parameters. Please provide the unit's serial number, your return shipping address, email, and a daytime telephone number. Payment is charged once the repair is complete using VISA, MasterCard, American Express, Purchase Order, or check.

Ship the unit (insured) to Enova. Please reference your RMA number on your shipping statement. Securely package the unit and ship it (insured) to:

Enova Illumination
Attn: RMA# _____
1717 Broadway St NE
Minneapolis, mn 55413

For international customers, please contact your authorized sales representative
For US customers, please contact Enova Customer Service (Email info@enova.email or call 1-651-236-8857)

SPECIFICATIONS

ENVIRONMENT

PRODUCT	STORAGE	OPERATING
Headlight	40°F (5°C) to 122°F (50°C)	50°F (10°C) to 85°F (30°C)
Battery Pack	40°F (5°C) to 122°F (50°C)	50°F (10°C) to 85°F (30°C)
Charger	-22°F (-30°C) to 185°F (85°C)	32°F (0°C) to 104°F (40°C)

HEADLIGHT MEASUREMENTS

ADJUSTABLE LENS

Headlight	Spot Size at 14in (35cm)		Lux Intensity at 14in (35cm)	*CRI
	Min	Max	Max Intensity	
XLT-ENT-A	.5 in (1 cm)	2 in (5 cm)	30,000 lux	70
PLT-ENT-A	.5 in (1 cm)	2 in (5 cm)	30,000 lux	90
PLT-90A	2 in (5 cm)	5 in (12 cm)	90,000 lux	90
XLT-125A	2 in (5 cm)	5 in (12 cm)	125,000 lux	70
PLT-165A	2 in (5 cm)	4 in (10 cm)	165,000 lux	90
XLT-225A	2 in (5 cm)	4 in (10 cm)	225,000 lux	70

FIXED LENS

Headlight	Spot Size at 14 in (35cm)	Lux Intensity at 14" (35cm)		*CRI
	Inches	Min Intensity	Max Intensity	
PLT-60F	2 in (5 cm)	15,000 lux	60,000 lux	90
PLT-80F	2 in (5 cm)	20,000 lux	80,000 lux	90
XLT-85F	2 in (5 cm)	30,000 lux	85,000 lux	70
XLT-105F	2 in (5 cm)	40,000 lux	105,000 lux	70

*CRI color rendering index is a quantitative measure of the ability of a light source to reveal the colors of various objects faithfully in comparison with an ideal or natural light source.

BATTERY PACKS

OPERATING TIME

Headlight	PP2 Intensity		PP4 Intensity		Freestyle Intensity	
	Max 100%	Min 30%	Max 100%	Min 30%	Max 100%	Min 30%
XLT-ENT-A	5 hrs	10 hrs	11 hrs	24 hrs	3.5 hrs	7 hrs
PLT-ENT-A	5 hrs	10 hrs	11 hrs	24 hrs	3.5 hrs	7 hrs
PLT-60F	5 hrs	10 hrs	11 hrs	24 hrs	3.5 hrs	7 hrs
PLT-80F	5 hrs	10 hrs	11 hrs	24 hrs	3.5 hrs	7 hrs
XLT-85F	5 hrs	10 hrs	11 hrs	24 hrs	3.5 hrs	7 hrs
PLT-90A	5 hrs	10 hrs	11 hrs	24 hrs	3.5 hrs	7 hrs
XLT-105F	5 hrs	10 hrs	11 hrs	24 hrs	3.5 hrs	7 hrs
XLT-125A	5 hrs	10 hrs	11 hrs	24 hrs	3.5 hrs	7 hrs
PLT-165A	N/A	N/A	5 hrs	10 hrs	N/A	N/A
XLT-225A	N/A	N/A	5 hrs	10 hrs	N/A	N/A

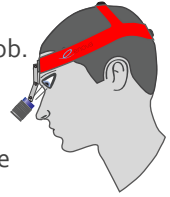
SPECIFICATIONS

		PP2	PP4	Freestyle
Input	Volts	10	10	7.2
	Volts	3.5-3.7	3.5-3.7	3.5-3.7
Output	Milliamp Hours	5,000	10,000	1,540
	Watt Hours	18.5	37	11.08

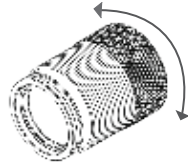
OPERATING HEADLIGHT

- 1) Fully open ratchet(s) on headband before placing headlight on head.
- 2) Adjust the back knob and top knob (or velcro strap) to the correct position on the forehead, so it is comfortably secure around the head.

NOTE: To avoid "headlight headache" do not overtighten the back knob. Your headlight should fit comfortably firm but not tight. The weight should rest on the top of your head.



- 3) Adjust the circumference by turning the knob(s) to tighten or loosen the tension.
- 4) Position the headlamp co-axially (i.e. centered between and in alignment with the angle of your eyes).
- 5) Adjust the intensity of the illumination by adjusting the power output on the battery.
- 6) Adjust the spot size (like a camera lens) by turning the grip ring on the headlamp, if your model has an adjustable lens.



OPERATING BATTERY - PP2, PP4, Freestyle

Battery packs should be fully charged prior to first use or before any long non-use or storage periods. It is recommended to fully charge battery packs after each use and avoid partial charges. This is not mandatory, but will help to keep the battery life gauge calibrated and the battery in peak operating condition.

- 1) Connect the battery cable with the headlight by firmly inserting the end of the cable directly into the receptor cable on the headlight.
- 2) Connect the cable into the battery pack by inserting the plug into the receptacle located on the side of the battery pack. To disconnect the cable from the battery pack, pull directly out.

NOTE: DO NOT TWIST OR BEND CABLES OR CABLE ATTACHMENTS. Twisting or bending will cause damage resulting in headlight, cable or battery failure.

- 3) Press the power button on the battery pack until the light illuminates (you will hear a beep; a 1-2 second lag is normal)
 - ▶ The battery life will then be shown on the battery life indicator.
 - ▶ To increase the light intensity, press the "+" button.
 - ▶ To decrease the light intensity, press the "-" button.
 - ▶ To turn the battery pack "Off" press the On/Off button
 - ▶ The LED indicators on the battery will switch between the light intensity indicators and battery life indicators.
- 4) If the battery is turned on, but NOT plugged into headlight, it will turn off automatically after 3 seconds. This is normal and an energy saving feature.

BATTERY LIFE STATUS AND LOW POWER INDICATIONS

The Power Packs and Freestyle Batteries provide visual and audible signals indicating the power level of the battery. On the Power Packs, the low battery indicator goes through a sequence of 1 to 5 red LEDs. One red indicator light will appear approximately every two minutes, with a beep every minute along with a flashing signal seen in the light output. The battery pack will power off approximately one minute after the fifth red indicator light is illuminated. When you begin noticing warning signals, replace the battery with a fully charged battery and recharge the low battery to full capacity. On the Freestyle Batteries there will be a series of auditory beeps once the battery reaches 10% life, accompanied by a flashing signal seen through the light output.

Note: these are estimates as the chemistry can fluctuate from battery-to-battery

Power Packs	100%	95%	60%	40%	20%	10%	9 Min	7 Min	5 Min	3 Min	>1 Min
GREEN SOLID LED Battery	1 Center Green	5	4	3	2	1	-	-	-	-	-
Red Flashing LED Battery	-	-	-	-	-	-	1	2	3	4	5
Audible Beep Battery	-	-	-	-	-	-	-	1 Beep	3 Beeps	5 Beeps	5 Beeps
Visual Flash Headlight	-	-	-	-	-	-	3 Flashes	3 Flashes	3 Flashes	5 Flashes	5 Flashes

Freestyle Battery	100%	95%	60%	40%	20%	10%	9 Min	7 Min	5 Min	3 Min	>1 Min
SOLID LED Battery	5	5	3	2	1	-	-	-	-	-	-
Flashing LED Battery	-	-	-	-	-	1	1	1	1	1	1
Audible Beep Battery	-	-	-	-	-	-	-	2 Beep	3 Beeps	4 Beeps	5 Beeps
Visual Flash Headlight	-	-	-	-	-	-	-	2 Flashes	3 Flashes	4 Flashes	5 Flashes

HEADLIGHT BATTERY CABLE GUIDE

	XLT Series		
	Gray Twist Cable	Black Twist Cable	Black Extension Cable
XLT-ENT-A			X
XLT-85F		X	X
XLT-105F		X	X
XLT-125A		X	X
XLT-225A	X		

	PLT Series		
	Gray Twist Cable	Black Twist Cable	Black Extension Cable
PLT-ENT-A			X
PLT-60F		X	X
PLT-80F		X	X
PLT-90A		X	X
PLT-165A	X		

BATTERY CHARGER

Enova offers three styles of chargers, PP-Single Charger and PP-Base Station compatible with the PP2 and PP4 Power Packs, and Freestyle Base Station compatible with Freestyle Batteries.

PP-SINGLE CHARGER

- ▶ Battery Packs must be turned off prior to connecting to the charger.
- ▶ Plug the power cord from the charging unit into the wall outlet. The charger will show a green light when plugged into the wall.
- ▶ Plug the small charging cord that leads from the charger into the battery pack. Both chargers will show a red light while the battery pack is charging. Toward the end of the charging cycle, the charger LED will intermittently change between red and green
- ▶ When battery is fully charged, the light on the charger will appear solid green. (Note: Center Green Light on power packs will be constantly illuminated indicating battery is 100% charged)
- ▶ Remove battery from charger and wait approximately 5 seconds before turning on battery.

PP-BASE STATION and FREESTYLE BASE STATION

Battery Packs must be turned off prior to connecting to the charger.

Plug PP-Base Station into AC outlet – green light on charger will illuminate showing the charger has power, but does NOT change color during charging process

- ▶ Place batteries on charger ports
- ▶ Charging status is shown with 5 green LED lights on top of the battery. Green lights will blink as battery is charged.
- ▶ If battery is fully drained, 1 green light on battery will flash
- ▶ As battery approaches full charge additional green blinking lights will illuminate until 5 green blinking lights are shown, indicating battery is 95% charged.
- ▶ On the Power Packs **Center Green Light** on battery will be constantly illuminated indicating battery is 100% charged. On Freestyle Batteries, all **Five Green Light** indicators will be constantly illuminated indicating the battery is 100% charged.
- ▶ Remove battery from charger and wait approximately 5 seconds before turning on battery

CHARGERS

	Power Cord Options	Input	Output	Charge Time
PP-Single Charger	North America, Euro, UK, and Australia	100-240V 50/60Hz 1.5A	10V 1.6A	3-4 hours
	North America, Euro, UK, and Australia	100-240V 50/60Hz 1.5A	10V 1.6A	4-8 hours
Freestyle Base Station	North America, Euro, UK, and Australia	100-240V 50/60Hz 1.5A	12V 2.0A	4-6 hours