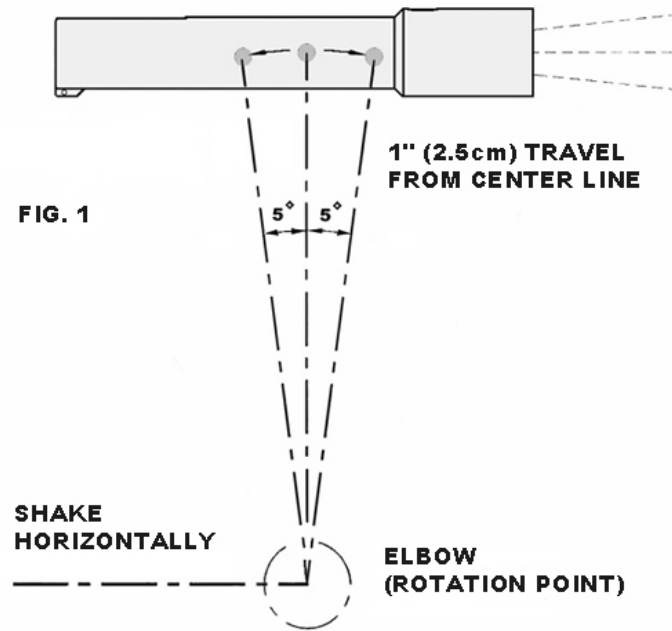


# NightStar® Magnetic Force Flashlight

Thank you for purchasing NightStar. We at Applied Innovative Technologies, Inc. are confident that you will find NightStar to be the most reliable and durable light source you have ever owned. To learn more about NightStar please visit our website: [www.nightstar1.com](http://www.nightstar1.com)

## Instructions

To charge NightStar, hold the light level or parallel to the ground and moderately shake so that the magnet completely passes through the wire coil. Initially, the capacitor may be completely discharged. If this occurs, NightStar will require approximately 3 minutes of shaking to fully recharge the capacitor. NightStar is most effectively recharged when it is turned off and shaken between 2 and 3 times per second over a distance of approximately 2" (5 cm) (see Figure 1). If shaken too vigorously or shaken in a vertical position, the charging magnet will hit the repulsion magnets. Although this will not damage the light, it is not recommended and is not the optimum method for charging NightStar. When NightStar is low on energy, it will take approximately 90 shakes (3 shakes per second for 30 seconds) to recharge the capacitor. On a full charge NightStar will provide highly effective illumination for over 20 minutes.



## Performance Optimization

Shaking NightStar as described above results in a resonant condition that maximizes recharge efficiency. When resonance is reached, it will require fewer shakes to fully charge the capacitor. At resonance you will feel and hear the magnet smoothly changing direction due to the motion of the light matching the recoil of the magnetic repulsion system. (Optimum shaking of NightStar is analogous to pumping your legs correctly on a swing.)

## WARNING

A STRONG MAGNETIC FIELD surrounds NightStar! Do not set NightStar within 16" (40cm) of computers, monitors, televisions, or magnetic storage media (cassette tapes, computer floppies, videotapes, credit cards, etc.). Increased distances may be necessary for highly sensitive compasses used in aircraft and boats. Exercise caution when using any magnetic device close to pacemakers. Applied Innovative Technologies, Inc. assumes no responsibility for damage to any magnetically sensitive component or magnetic storage media or consequences resulting from such damage. Applied Innovative Technologies, Inc. is not responsible for any damages, consequential or otherwise, resulting from the use of NightStar.

## Care

Use only warm water and mild soap to clean the housing. Rinse with fresh water. Do not use petroleum distillates (such as gasoline or kerosene) or solvents such as acetone to clean any part of the flashlight. Certain insect repellents may also act as a solvent. The lens can be cleaned with Windex or any similar glass-cleaning product.

## Additional Features

When horizontally suspended by a string or wire, NightStar will align in a north-south orientation, serving as a compass with the front of the light pointing towards north. NightStar's luminescent on/off switch contains a new extremely efficient light storing material. The switch will glow for several hours after only 10 minutes of direct exposure to room or sunlight. This feature allows NightStar to be easily located and operated in dark environments.

## Specifications

### Hazardous Class 1 Gas Certifications

Meets all test criteria for MIL-STD-810F, Test Method 511.4: Military Standard Reliability Program. Gas Mixtures tested: Acetylene (Group A), Hydrogen (Group B), Ethylene (Group C), Hexane (Group D), Natural Gas (Group D), Aviation AV/ Gas 100 / 130

[ Tests Performed by Aero Nav Laboratories ]

### Electromagnetic Compatibility

Conforms to Council Directive 89/336/EC. Measured RF levels are far below limits for all frequencies.

[ Tests Performed by Labein Laboratories ]

### Corrosion Resistance

Operational after 3 days immersion in solutions of salt water, isopropyl alcohol, ammonia, phosphoric acid\*, acetic acid\*, drain cleaner\*, Ajax\*, motor oil and diesel fuel (\* 10% solutions).

[ Tests Performed by Hauser Laboratories ]

### Submersion

Operational at an ocean depth of 2210-ft (674m). [Equivalent pressure crush point: 960 PSI]

[ Tests Performed by Hauser Laboratories ]

### Sound Emission

Overall A-Weighted Sound Power Level: 63.6 dB

No# of units	Distance (ft.)				
	1	10	100	1000	10000
1	65	45	25	5	0
12 (squad)	76	56	36	16	0
36 (platoon)	81	61	41	21	1
108 (company)	86	66	46	26	6

All values are A-Weighted Sound Pressure Levels and are predictions based on measured Overall A-Weighted Sound Power Levels of a single unit. For reference purposes, a pressure level of 40 is equivalent to an urban neighborhood at night far from roads. A pressure level of 20 is an empty recording studio.

[Test Performed by Johns Mansville Laboratories]

### Marine Certification

Meets all impact, abuse, endurance, temperature and chemical resistance test criteria for marine standard F1014-02 (Test standard for all marine flashlights)

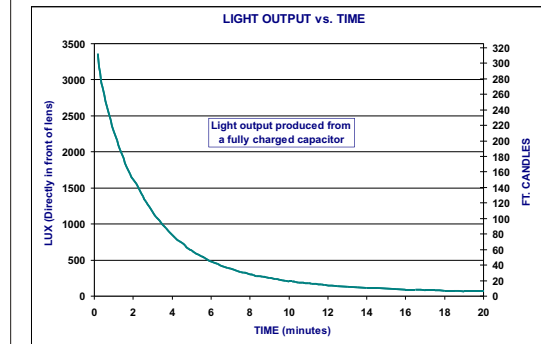
[ Tests Performed by Aero Nav Laboratories ]

### Temperature

Storage: -50F (-45C) to 140F (60C)  
Operation: -40F (-40C) to 130F (55C)

[ Tests Performed by Hauser Laboratories ]

### Light Output



[ Tests Performed by Hauser Laboratories ]

### Smoke Penetration:

Smoke Type	%Transmission	
	@ 4ft.	@ 8ft.
Paper	36.7	14.4
Leaves	56.7	30.4
Rubber Bands	35.3	19.6

### Magnetic Field Strength

Single Unit:	@ 1ft.	@ 2ft.	@ 4ft.	@ 8ft.
Axis 1	0.03	0.005	0.0005	0.00001
Axis 2	0.06	0.007	0.0005	0.00001
Axis 3	0.13	0.028	0.0040	0.00050

1 Case (packed in alternating configuration):

Axis 1	0.22	0.002	0.0001	0.00001
Axis 2	0.006	0.001	0.00000	0.00000
Axis 3	0.06	0.006	0.001	0.00001

Note: All values are in Gauss. Axis 1 is parallel to the housing, Axis 2 is perpendicular to the housing, Axis 3 is perpendicular to the end of the light. For reference purposes, a field of 0.005 G deflects a compass needle by less than 1 degree.

[ Tests performed by Washington Laboratories ]

**Weight / Mass / Length** 11 ounces / 308 grams / 10" (25.4cm)

## Warranty

In the unlikely event that NightStar fails within 5 years of the date of purchase, we will repair or replace it at no cost. It is necessary to include your name and current address with the returned product. This warranty is void if failure is due to severe mishandling or abuse. Deliver your NightStar as well as questions and comments to: Applied Innovative Technologies, Inc. P.O. Box 754 Fort Lupton, Colorado 80621 USA.