



The following items are recommendations for your upcoming NORWAY photo workshop. Please note that most items are not necessary for you to participate in the workshop, but we encourage you to bring them if you own them. If you do not own items on this list there is no need to purchase them. This workshop is a place for you to learn from your instructors and other participants about their equipment preferences.

### **EQUIPMENT**

Camera body  
Back-up camera body  
Tripod legs and head  
Tripod spikes for the feet

### **LENSES**

Super wide-angle (11-15mm if you have one)  
Wide-angle lens (16-35mm range)  
Mid-range lens (24-105mm range)  
Telephoto lens (70-200mm range)

### **FILTERS**

Graduated neutral density  
Neutral density  
Polarizer

### **MISC EQUIPMENT**

Cable release or intervalometer  
Lens cleaning cloths  
Extra batteries and battery charger  
Memory cards  
Rain cover for camera and lens  
Flashlight with **red light** option  
Umbrella  
Lens/Camera covers for precipitation

### **TECHNOLOGY**

\*Laptop and power supply  
Card reader with cables  
Portable back-up drive  
European plug adapters

### **LENSES FOR NORTHERN LIGHTS**

Just about any wide-angle lens will work for northern lights. I carry a 14mm f2.8 and a 24mm f1.4. A wide-angle lens with a lower f-stop will allow more light into your photo. This allows for brighter northern lights with shorter exposure time. If you are using an f4.0 or higher lens, you can still achieve the same look. Your exposure will just take a little longer.

**I always recommend carrying a back-up camera in the field.** I have seen even the newest cameras fail from time to time. Cold weather can also affect your camera's performance. If you do not have a second camera body, see if you can borrow one from a friend, or consider renting one for the workshop at either [lensrentals.com](http://lensrentals.com) or [borrowlenses.com](http://borrowlenses.com)

**Batteries and cold weather do not mix. It is very important that you bring extra batteries. If you are using a mirrorless camera, your battery life is even shorter.** Please consider purchasing or borrowing extra batteries. I travel with 8 batteries in the winter.

Norway/Europe use different plugs for electronics. Please bring a converter and adapters. These can be purchased at travel sections in most big stores.

\*It is not necessary for you to carry a laptop to the workshop. You will want a method of backing up your images. If your camera holds two memory cards, you can back-up using this method. If you carry a portable external hard drive, please bring the cord that connects your camera to the drive for back-up.