

# Firecrest IRND

## The World's First Hyper-neutral ND

Firecrest IRND is a revolutionary new type of infrared-attenuating neutral density filter from Formatt-Hitech. Firecrest IRND is a quantum leap improvement over all previous generation ND and IRND products and represents the technological state of the art in scientific light modification.

Firecrest is a radical departure in how ND filters are manufactured. Previous generation NDs were made by dyeing resin. The resin filter was then offered bare as a resin filter, or sandwiched between two pieces of glass and offered as a glass filter. Firecrest is not a dyeing process. Rather, Firecrest is a 15 layer multicoating process that is applied directly to the glass through a vacuum-formed, hard-coated, electrolytic process. In layman's terms, it's analogous to anodizing on a glass surface. Firecrest filters are anti-reflective and extremely flare resistant, which increases contrast and visual acuity in challenging lighting conditions. Firecrest filters are also hydrophobic and scratch-resistant.

Firecrest is a precision and high fidelity product suitable for scientific evaluation. Firecrest was designed for the demands of professional photographers using top lenses from Zeiss, Hasselblad, Leica, Canon and more. If you're a connoisseur of precision optics, choose Firecrest IRND.



### Firecrest IRND Grads

Another industry first with Firecrest IRND is the development of IRND grads. Legacy graduated ND filters are manufactured from the traditional ND formulations originally developed for use with film and do not reduce infrared. Firecrest IRND grads use the same Firecrest technology as their solid ND brothers. The result is a perfectly neutral graduated ND filter that pairs and stacks perfectly with even the highest densities of ND filter, and especially with other Firecrest IRND filters.



### Available Versions

Firecrest IRND filters are available in both rectangular and two versions of slim circular screw-in. Circular Firecrest IRND filters are available in the thinnest rings on the market. The SuperSlim is threaded, stackable and only 5.5mm thin. The UltraSlim rings are 3mm thin. UltraSlim rings are not stackable and don't have threading for lens caps, however they are the thinnest circular screw-in filters in the world.

Rectangular filters are available for both photo and cinema. Grad filters for the photographic market are vertically oriented grads for photographers using 100x150mm filters. Cinema filters are landscape oriented 4x5.65".



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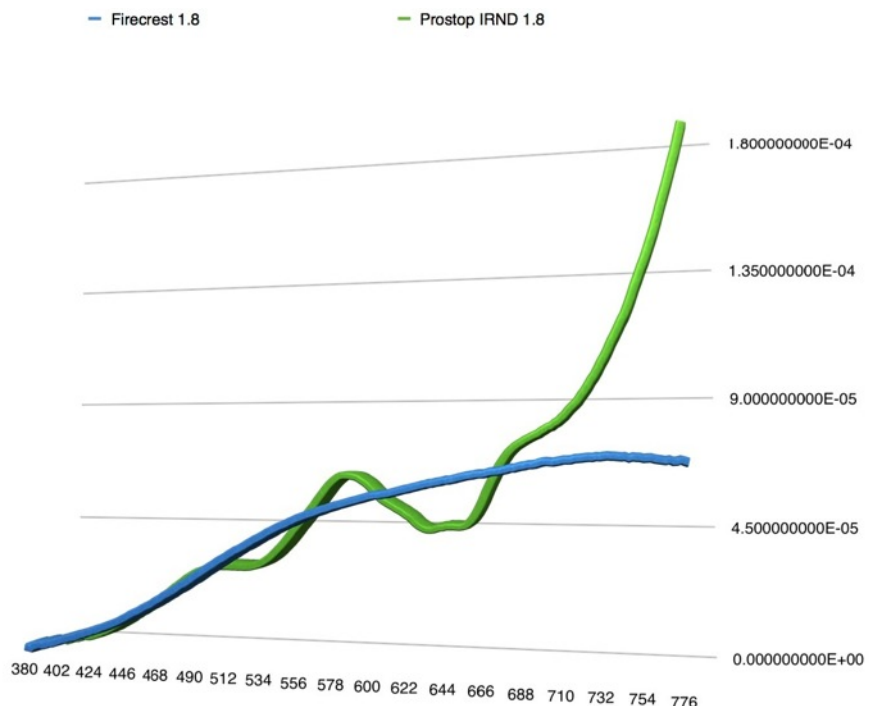
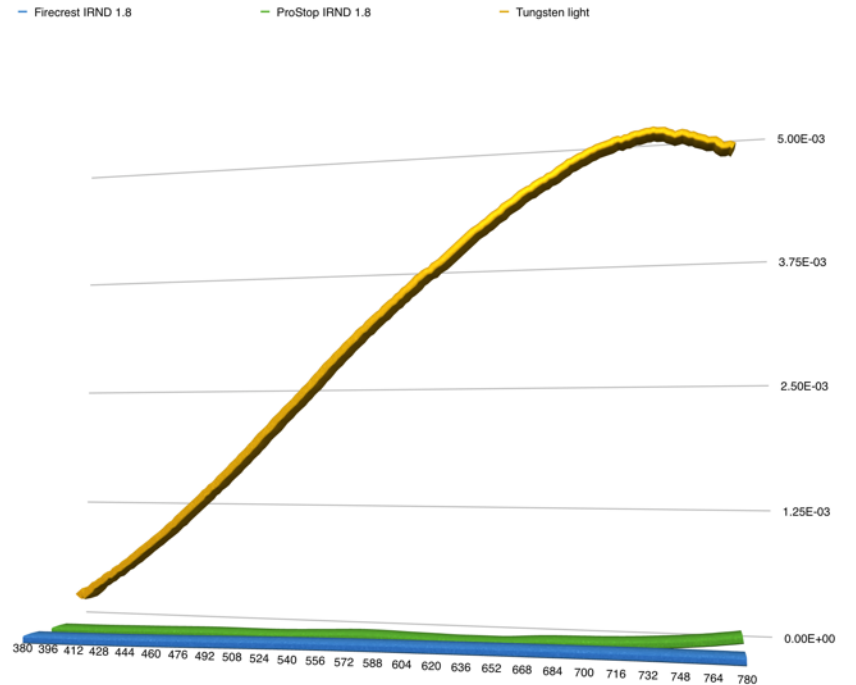
### Independent Test Data

These graphs show test results from an independent test performed at The Academy of Motion Picture Arts and Sciences (AMPAS). The test measured the spectral power distribution of tungsten light reflected off a spectralon target made of barium sulfate using a Photo Research SpectraScan Model 705 spectroradiometer. The results were graphed according to their wavelength (in nanometers) along the X axis, versus radiance (in watts per steradian per meter squared) along the Y axis.

In the top graph, the yellow line represents the baseline tungsten light reading reflected off the barium sulfate target. This graph illustrates the excellent filtration properties of both the ProStop IRND (shown in green) and the Firecrest IRND (shown in blue). Both filters appear nearly flat from this perspective.

The second graph emphasizes the differences between the two filters by removing the baseline tungsten reading and zooming-in on the Y axis. On closer inspection, the graph shows the ProStop IRND strongly attenuating the near-infrared spectrum before returning to neutral attenuation of the infrared spectrum around the 730nm mark. Firecrest (shown in blue) performs perfectly linearly in the visible light spectrum, before completely eliminating the infrared energy at around the 700nm mark. Compared to the ProStop IRND (which is the previous benchmark in IRND filtrations) the performance shown by Firecrest IRND is nothing short of revolutionary. Firecrest IRND truly is the future of ND filtration for digital sensors.

Results in-the-field confirm the test data. The new Firecrest IRND is amazingly neutral regardless of the camera make or model used.



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### Why IRND for Digital

Film by its very nature is not sensitive to infrared. Film typically has a toe curve in the near-infrared region that reduces its sensitivity to infrared almost completely. Thus, traditional ND formulations worked very well with film. However, digital sensors are highly sensitive to infrared spectrum light. When using lots of ND (for cinema or long exposure photography for example) the sensor becomes overwhelmed with infrared energy causing severe color shifts and image degradation. Digital image capture requires IRND filtration to achieve best results.

### Why Firecrest for Photo?

Firecrest IRND filters for photography can be classified in two main categories, circular screw-in and rectangular (or square). Both types of filters are made from Schott Superslim glass (the finest optical glass material available). The rectangular filters are 2mm thick and feature the Firecrest IRND 15 layer multicoating on the outside of the filter. The circular screw-in filters also feature the 15 layer multicoating, however they are housed in threaded aluminum rings for attachment to the lens. Firecrest IRND filters are available between 1-10 stops of ND and between 1-5 stops of soft edge grad.

To summarize, the three versions are:

- 2mm thick rectangular/square glass
- 5.5mm Superslim stackable aluminum ring circular
- 3mm Ultraslim (non-stackable) aluminum ring circular

### Available Circular Sizes (mm)

39 | 46 | 49 | 52 | 58 | 62 | 67 | 72 | 77 | 82 | 95 | 105 | 127

### Available Sizes - Rectangular 2mm Photo

- 67x85mm solid & grad
- 85x85mm solid & 85x110mm grad
- 100x100mm solid & 100x150mm grad
- 165x165mm solid & 165x200mm grad

### Available Sizes - Rectangular 4mm Cinema

4x4 | 4x5.65 | 5x5 | 5.65x5.65 | 6.6x6.6

### Why Firecrest for Cinema?

Firecrest IRND filters for cinema are 4mm thick and feature the 15 layer Firecrest IRND multicoating bonded in the center of two 2mm pieces of Schott Superslim glass. By sandwiching the Firecrest IRND multicoating we essentially create a filter that cannot be damaged externally during the heavy use and cleaning subjected to cinema filters. This makes Firecrest IRND an ideal product for rental houses, as it is both the most neutral ND on the market and the most durable. One additional advantage of Firecrest IRND is the nine and ten stop filters. Unlike ProStop IRND - which are available between 1-8 stops (in glass, 1-10 in resin), Firecrest IRND are available between 1-10 stops of ND, plus 1-5 stops of soft edge grad.

### About Formatt-Hitech

Formatt-Hitech filters are designed and manufactured in Wales, UK to scientific standards using award winning computerized technologies. Dealer orders typically ship with a 1-2 week lead time from the date of order.

