



Cost-Effectively Integrate AI-Powered Inspection into Machines with Neurala Vision Inspection Automation (VIA) and FLIR® Firefly® DL Cameras.

The Challenge

As manufacturers strive for greater automation and to gain new insights from the data generated during their production processes, machine builders are seeking to add value and differentiate their products by introducing new capabilities that deliver against these requirements.

While deep learning, or AI, supports these initiatives, the ability to integrate it into machines is frequently prohibitively expensive or requires that the end customer or systems integrator expends significant effort using specialized skillsets. Neurala and FLIR

Systems, Inc. have collaborated to address this problem, bringing to market a cost-effective solution that leverages Neurala VIA cloud software to develop customizable deep learning that can be easily exported for use on the FLIR Firefly DL camera. Together, these products allow the rapid development of vision AI models using very little data by users with no AI knowledge. These models can be exported and deployed directly to the Firefly DL camera to automate visual inspections with a small hardware footprint, low weight and power consumption, and without the need for a host-PC.



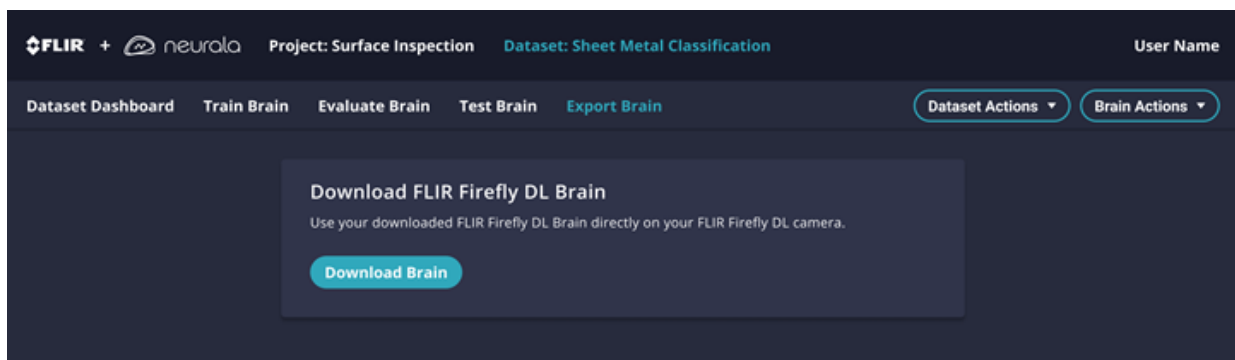


How Neurala Addresses This Concern

- **Saves Money:** Because Neurala VIA allows the rapid development of models in the cloud to be deployed directly on the FLIR Firefly DL camera, no host PC is required, reducing the hardware and associated costs to integrate AI into your product(s).
- **Saves Time:** With Neurala VIA, you are able to develop models in minutes and without the need to stand up a traditional AI development environment. And because VIA allows you to export a model that's pre-configured to work on the Firefly DL, deployment is quick and simple.
- **Easy to Use:** Neurala VIA software walks you through all the necessary steps to produce an effective deep learning inspection - you don't need to be a machine vision or AI expert to add AI-powered automation to your machine.
- **Minimal data required:** Train with dozens, rather than thousands of images, so you can get started quickly, measure performance and update your model over time as you collect additional data.

Neurala VIA for the FLIR Firefly DL

Neurala VIA for the FLIR Firefly DL is the most cost-effective Neurala solution for the development and deployment of classification AI models. Models are developed using Neurala Brain Builder software in the cloud and are then converted for download and import to the Firefly DL using FLIR NeuroUtility™ or SpinView software (SpinView is included in the Spinnaker SDK software, available from FLIR.)

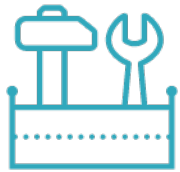




Use Cases



Surface Inspections



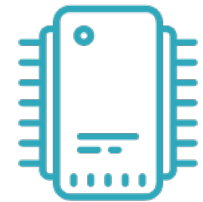
Part Kitting



Plastic Injection Molding



Case Packing



Electronic Component Inspection

Neurala VIA for the FLIR Firefly DL Comparison with Neurala VIA for FLIR Blackfly® GIGE

Neurala VIA for FLIR Firefly DL

Neurala VIA for FLIR Blackfly GIGE

	Neurala VIA for FLIR Firefly DL	Neurala VIA for FLIR Blackfly GIGE
Camera	FLIR Firefly DL	Any FLIR Blackfly or Blackfly S GigE camera line, up to 4 per install
Model Development	Cloud only	Cloud and/ or on premise
Host	Not required, models run directly on Firefly DL	Industrial PC with Intel i7, Xeon CPU (6th gen or better) required (optional GPU)
Image Type	N/A	N/A
Minimum number of images per class	As few as 50 images depending on the application	As few as 50 images depending on the application
Aquisition Speed	Varies from 45-83ms	100ms for 1 camera
Maximum Camera #	Model deployed on Firefly DL directly 1:1	4
Classification Model Development	Yes	Yes
Anomaly Model Development	No	Yes
Explainability	No	Brain Builder cloud only
Communication Protocol(s)*	See Firefly DL documentation	Modbus TCP / others via gateway
Optimizations	Limited to Firefly DL supported models	Full Neurala optimization capabilities enabled

*more communication protocols to come



For more information on Neurala VIA visit: www.neurala.com

For additional product information on the FLIR Firefly DL visit: <https://www.flir.com/products/firefly-dl/>

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