

LumiCenter Face Recognition Channel Add-On Module

LCE-FR



Key Features

- Search faces across multiple cameras
- Verify a person's identity using their face
- Save time during investigations
- Get alerts when a face is recognized
- Match faces and compare to positive lists and negative lists
- Initiate an action like unlocking a door based on a face

Certifications and Compliance

- NDAA Compliant

Applications

- Monitor a person's activity in a secured area
- Find a lost child at a shopping center
- Search for suspects and witnesses during investigations

Supported by LumiCenter

- Plus
- Max

Overview

This add-on module enables LumiCenter Plus and Max to perform real-time facial recognition from any surveillance camera, instantly matching faces against a watchlist. When a match is found from the positive lists or negative lists, the system can send alerts via UI, text, email, or API. The watchlist database has no license-based size limit and can be synced with the cloud. The module can also trigger actions like door access or automated tasks through macros.

Key Technologies

LumiCenter detects faces in video feeds and uses an AI facial recognition algorithm to generate and store vector-based mathematical representations. These vectors contain no personal identifying information and are used solely for finding similar faces in recorded footage. Face search allows rapid comparison of a person's photo against video archives, including footage from multiple cameras, significantly speeding up investigations.

System Requirements and Technical Specifications

Review the information below to learn more about the module and verify the specifications and conditions required for the module to properly work.

Face Detection versus Face Recognition

Face detection identifies the presence of a face in an image or video but does not give the user the ability to search for a particular face.

Face recognition is an application of face detection that identifies the person in the image or video and is an application of face detection. Face detection is the first step in face recognition.

Consult the table to compare face detection and recognition.

Feature	Face Detection	Face Recognition
Detects if a face is present	✓	✓
Identifies facial features	✓	✓
Algorithm training	✓	✓
Works for images and videos	✓	✓
Uses biometrics		✓
Matches facial features to a name		✓

Face Lists

Set up macros to trigger automated system actions based on face list conditions.

- When a recognized face is found in a specific list
- When a recognized face is not found in a specific list
- When the system needs to confirm the presence of a specific face from a list
- When the system needs to confirm the absence of a specific face from a list
- When a recognized face is not found in any list

Face Detector Functions

The Face Detector triggers an event whenever a face appears in the frame. LumiCenter stores all captured faces in binary format within its database. It is recommended to use LumiCenter Net for each camera channel.

Face Detector Requirements

Cameras

Below are the camera requirements for the add-on module to perform properly.

- The camera's video stream must have a frame rate of at least 12 fps to handle standard tasks effectively. If used at turnstiles, there must be a minimum frame rate of 6 fps.
- Distortion of the face from the camera lens must be minimal, particularly at the center of the frame.

Lighting

Below are the lighting requirements for the add-on module to perform properly.

- Faces must be evenly illuminated with diffused light of at least 200 lux. Directional side lighting cannot be used. The detector will not work if lighting is excessive or insufficient.
- Contrast of the captured faces must be over 64 grayscale.
- Backlighting and sharp gradients of light and shade cannot be present.

Scene and Camera Angle

Below are the scene and camera angle requirements for the add-on module to perform properly.

- The maximum allowed frontal angle for captured face images is $\pm 15^\circ$ from the camera.
- Minimize overlap between faces in the frame.
- For best results, position faces near the center of the frame, where image distortion is lowest.

Object Images

Below are the object image requirements for the add-on module to perform properly.

- Captured face images must be clear with no motion blur.
- For creating a face vector, the distance between the pupils must be at least 32 pixels.
- For generating face tracks, the face width must be a minimum of 16 pixels.

Server Hardware

- The Face Detector and its sub-detectors require a CPU with support for SSE4.2, FMA3, or AVX2.0 instruction sets
- If running on a GPU, the following requirements must be met:
 - The detector can only run on Nvidia devices with at least 6 GB of video memory.
 - Nvidia driver version 418.39 or higher is required.
 - Compute Capability 6.0 or higher is necessary.

Ordering Information

LumiCenter License

Each license enables video capture, display, record, transmit and playback of one video channel from an IP camera or IP device. Additional functionality is included (I/O, audio, PTZ).

SKU	Product
LSC-PLSV	LumiCenter Plus Version
LSC-MAXV	LumiCenter Max Version

LumiCenter Add-On Modules

Each video channel requires a LumiCenter license to support add-on modules.

SKU	Add-On Module	Description
LCE-FR	Face Recognition Channel	Enables LumiCenter Plus and Max to run facial recognition in real time from any surveillance camera and instantly compare individuals captured on footage against a watchlist of individuals. The facial recognition module can send notification alerts (UI, Text, Email, API) when a certain person matches the positive/negative lists. Watchlist enrollment database size is not limited by license and can be synchronized to the cloud. The module can initiate opening a door or other actions running a macro to automate tasks. A LumiCenter video license is required for each camera in addition to this add-on module.
LCE-FR10	Face Recognition - 10 Pack	Enables LumiCenter Plus and Max to run facial recognition in real time for up to 10 cameras/channels and instantly compare individuals captured on footage against a watchlist of individuals. The facial recognition module can send notification alerts (UI, Text, Email, API) when a certain person matches the positive/negative lists. Watchlist enrollment database size is not limited by license and can be synchronized to the cloud. The module can initiate opening a door or other actions running a macro to automate tasks. A LumiCenter video license is required for each camera in addition to this add-on module.

