

# Network Camera

Full HD Network Camera

**NK1080 Series**

**설치 / 사용설명서**

(KR REV 2.3)

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## Full – HD Network Camera

### 설치 및 사용 설명서

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Network Camera을 구입해 주셔서 감사합니다.

본 설명서는 Network Camera에 대한 사용법을 설명 합니다.

본 설명서를 숙지 후 제품을 올바르게 사용하여 주시기 바랍니다.

본 설명서와 여기에서 설명하고 있는 소프트웨어, 하드웨어는 저작권법에 의해 보호를 받습니다. 그러므로 저작권법 내에서 일반적인 사용을 위해 복사하는 행위 외에, 본사의 허가를 받지 않고 본 사용자 설명서 내용의 일부 또는 전체를 복사, 재인쇄할 수 없으며 다른 언어로 번역할 수 없습니다.

### 제품의 보증 및 책임 제한

본 제품 판매와 관련하여 제조사는 다른 어떤 책임도 지지 않으며 제조사를 대신하여 책임을 지도록 제 3자에게 권한을 위임하지도 않습니다. 사고, 태만, 변경, 남용 또는 오용에 의한 경우에는 제품 보증이 적용되지 않으며, 본 제품의 제조사가 공급하지 않은 부속이나 부품에 대해서는 어떠한 보증도 하지 않습니다.

다음의 경우에는 보증에서 제외되고 본사는 책임을 지지 않습니다.

- ✓ 사용자의 취급 부주의에 의한 고장인 경우
- ✓ 사용자가 임의로 분해, 교체한 경우
- ✓ 정격 전원이외의 전원을 연결한 경우
- ✓ 자연재해에 의한 고장인 경우(화재, 홍수, 해일 등)

본 제품은 화재나 도난 등의 완벽한 예방수단이 되지 못하며, 이로 인해 발생하는 사고나 손해에 대하여 본사는 책임을 지지 않습니다.

# 개요

## 경고 및 주의

### 경고



설치 장소가 불충분한 곳에 설치하지 마십시오.  
젖은 손으로 전원 플러그를 잡지 마십시오.  
전력선과 근접하게 설치하지 마십시오.  
떨어뜨리거나 강한 충격, 진동을 피해 주십시오.



시공은 화재 및 감전의 위험이 있으므로 전문 대리점에 문의하여 주십시오.  
조명의 떨림이 많은 곳에 설치하지 마십시오.  
제품에 연기나 비정상적인 발열 시 사용을 중지하여 주십시오.  
분해하거나 이물질を 넣지 마십시오.

### A급 기기 (업무용 방송통신기자재)

이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

### 주의

- 고온, 고습의 환경에서 장시간 연속적으로 사용을 피해 주십시오. 부품의 열화에 의해 수명이 단축될 수 있습니다.
- 설치 장소의 방열 및 난방의 열의 제품에 직접 닿지 않도록 주의해 주십시오.
- 커버에 강한 충격을 가할 경우, 카메라 파손 또는 우천시 침수의 원인이 될 수 있습니다.
- 강한 빛이 카메라를 향하지 않게 하여 주십시오. 화면에 스팟광처럼 강한 빛이 입사되면, 블루밍, 스미어가 발생할 수 있고, 센서의 색필터가 열화되어 변색이 생길 수 있으며, 커버의 내부 반사에 의한 이상신호가 발생할 수 있습니다.
- 제품을 떨어뜨리거나 강한 충격 또는 진동을 피하여 주십시오. 고장의 직접적인 원인이 됩니다.
- 전력선과 근접되어 있는 경우에는 제품과 거리를 1m 이상 분리하거나 별도의 금속관으로 배관공사를 한 후에 설치하여 주십시오. (금속관은 반드시 접지하여 주십시오.)
- 바닥 또는 경사면에 설치하면 정상적으로 동작하지 않거나 수명이 단축됩니다.
- 다음과 같은 장소의 설치 및 사용을 피하여 주십시오.
  - 에어컨 주위 등 급격한 온도변화가 발생하는 장소
  - 주방 등 증기나 기름기가 많은 장소 및 가연성 물질이 있는 장소
  - 방사선, X선, 강한 전파나 자기가 발생하는 장소
  - 대기 중 먼지, 자동차의 배기가스 등이 많이 발생하는 장소
  - 습기가 많은 장소
  - 해안 등 부식성 가스가 많이 발생하는 장소
- 커버 내외부가 이물로 인해 오염된 경우에는 화상 및 화질에 영향을 미치므로 정기적으로 청소를 하여 주십시오.
- 불꽃감지 카메라 주의사항  
야외에 설치 시 태양의 영향을 받지 않도록 카메라 화각이 지평선 아래를 보도록 설치되어야 합니다.  
(카메라 화각이 지평선 위를 보도록 설치할 시 태양의 위치에 따라 오동작 가능성이 있습니다.)



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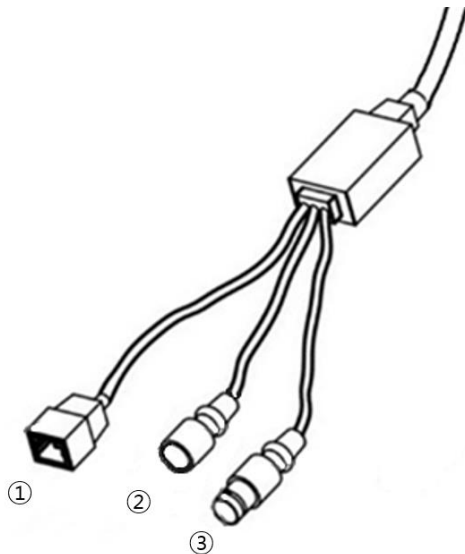
# 제품 소개

## 제품의 주요 기능

### 제품 공통 기능

- ◆ 1/2.8", 2.1M Sony 이미지 센서 채용
- ◆ 1920x1080 30fps 포함 2개의 H.264 스트림 및 1개의 JPEG 스트림 지원
- ◆ 최대 6개 스트림 동시 접속 가능 (NVR 기준 접속자 수 3명)
- ◆ 3DNR 적용(노이즈 제거)
- ◆ 디지털 손떨림 보정(DIS) 기능
- ◆ True Day&Night (ICR)
- ◆ 안개제거(De-Fog) 기능
- ◆ One-push 자동초점, 줌/포커스 제어 기능
- ◆ Onvif / PoE 지원 (LPR 하우징 카메라는 PoE 기능을 지원하지 않습니다.)
- ◆ IPv4 지원

## 케이블 명칭 및 기능



No	명 칭
1	네트워크 연결 포트
2	리셋 버튼 또는 Extern Alarm 신호선 (열감지, 불꽃감지 카메라)
3	전원 입력단자

### <주의>

네트워크 연결 포트, 리셋 버튼 및 전원 입력 단자는 방수 기능이 적용되어 있지 않습니다. 물에 노출되지 않도록 주의 바랍니다.

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# 설치하기

본 카메라는 첨단 보안 장비로 내부에 중요한 회로를 탑재하고 있습니다.  
제품의 내부 온도가 높을 경우, 수명이 단축되거나 고장이 발생 할 수 있으므로 주의 바랍니다.

## 기본IP 및 계정

- ✓ IP : 192.168.0.2
- ✓ DHCP : Off
- ✓ ID : admin
- ✓ Password : 12345

### <주의>

1. 펌웨어 3.x 이상인 경우에는 기본 암호가 없습니다. 카메라 활성화 시 암호를 설정해야 합니다.
2. 초기에 설정된 기본계정은 노출 위험이 있으므로 제품 설치시에 기본계정을 변경 후 사용할 것을 권장하며, 주기적으로 변경 바랍니다. 기본 계정 사용으로 인한 보안 및 기타 문제의 책임은 사용자에게 있으므로 주의 하여 주시기 바랍니다.
3. 바이러스 및 악성 코드를 차단하기 위해, 카메라를 연결할 PC나 스마트 폰에 백신 프로그램을 설치하여 주십시오. 또한 Update를 통해 항상 최신 버전의 소프트웨어로 유지하시기 바랍니다.

# 설정

IP 카메라의 각종 기능/설정을 Webviewer 에서 변경할 수 있습니다.

IP 카메라 영상은 PC의 인터넷 브라우저로 카메라의 IP 주소에 접속(Webviewer) 하여 보거나, NVR에 IP카메라 추가를 통해 볼 수 있습니다.

## Webviewer 접속

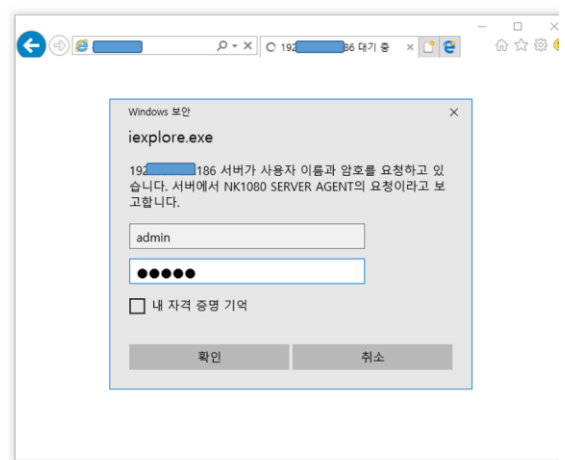
인터넷 브라우저로 카메라의 IP 주소에 접속하면 카메라 홈페이지인 Webviewer 가 나타납니다. 라이브 영상과 시스템, 카메라 네트워크 등 IP카메라의 모든 기능과 설정을 변경할 수 있습니다.

### 로그인

인터넷 주소창에 카메라의 IP를 입력하여 Webviewer로 접속합니다.

사용자 이름 및 암호를 입력 하여 로그인 합니다.

(사용자: admin / 암호: 12345)



## System Information

로그인 후 첫 페이지에 System Information이 보여집니다.

**Device Name / Model / Serial Number / HW Version / FW Version / IP Address / Mac Address**

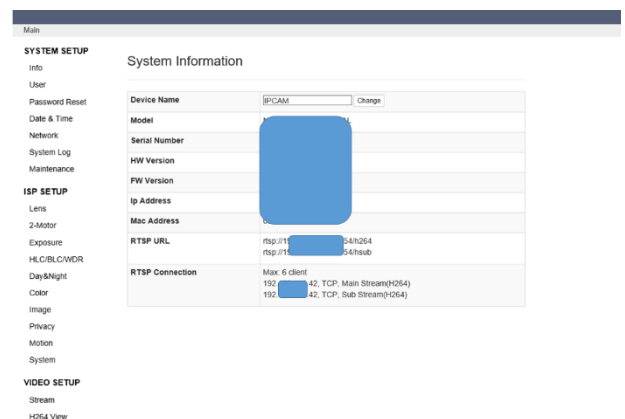
디바이스 이름, 모델명, 시리얼 넘버, 하드웨어 버전, 펌웨어 버전, IP 주소, 맥 주소가 보여집니다. 디바이스 이름은 특정 SW에 접속했을 때 보여지는 이름으로, 변경이 가능합니다.

### RTSP URL

Real Time Streaming Protocol의 약자로 RTSP URL의 주소를 RTSP를 재생할 수 있는 VLC media Player 에 입력하면 IP 카메라의 영상을 RTSP로 볼 수 있습니다. VLC media Player는 <http://www.videolan.org>에서 다운받아 설치 바랍니다. (32비트를 추천합니다.)

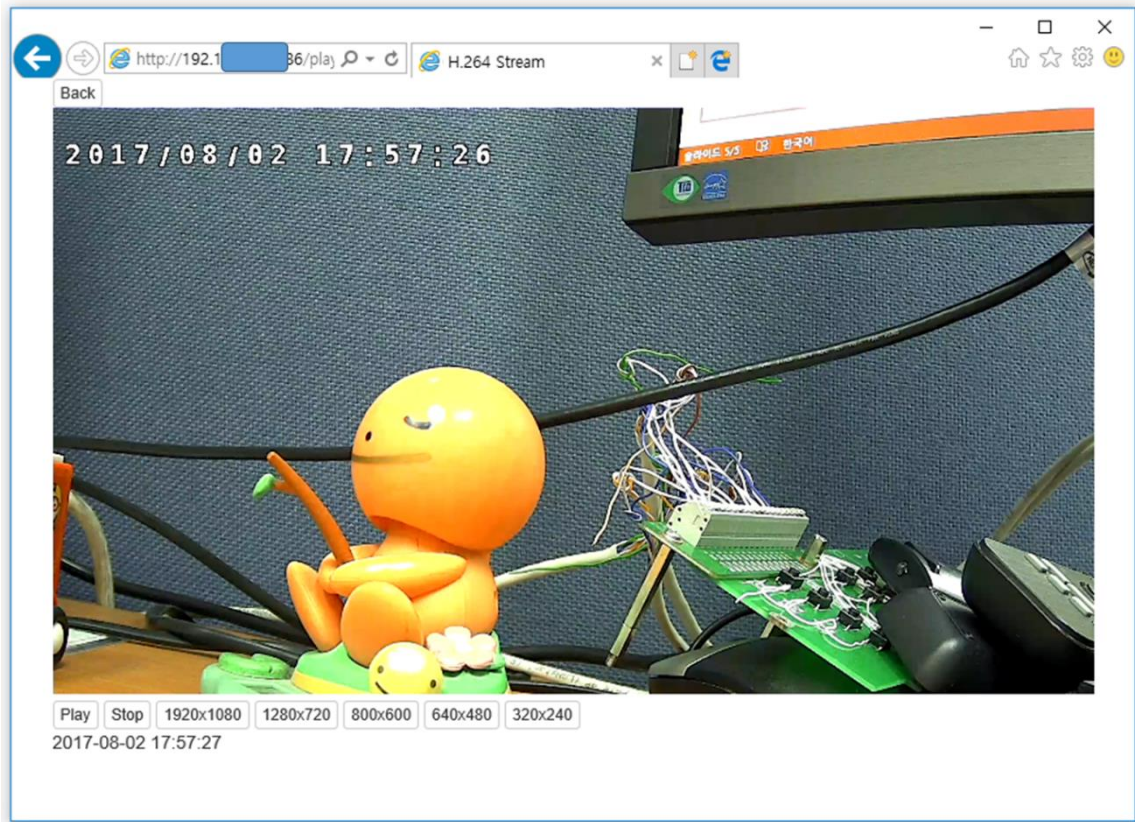
### RTSP Connection

IP 카메라에 RTSP로 연결되어 있는 다른 장치들(PC, NVR 등)의 정보가 보여집니다.



## LIVE (H264 View)

Webviewer > VIDEO SETUP > H264 View 를 실행하면 IP 카메라의 LIVE 영상을 보실 수 있습니다.



### <주의>

1. IP 카메라의 LIVE 영상을 보기 위해서는 VLC media Player 를 설치 해야 합니다. VLC media Player는 " <http://www.videolan.org> " 에서 다운 받아 설치 바랍니다.  
A. 32비트 VLC media Player 를 권장합니다.
2. Internet Explorer 브라우저에서는 H264 View 및 JPEG View 볼 수 있습니다.
3. 구글 크롬, 파이어폭스 브라우저 에서는 JPEG View 만 볼 수 있습니다.
4. 브라우저는 최신 버전 사용을 권장합니다.



# MAIN

## SYSTEM SETUP

### Info

로그인 후 첫 페이지에 System Information이 보여집니다.

#### Device Name / Model / Serial Number / HW Version / FW Version / IP Address / Mac Address

디바이스 이름, 모델명, 시리얼 넘버, 하드웨어 버전, 펌웨어 버전, IP 주소, 맥 주소가 보여집니다. 디바이스 이름은 특정 SW에 접속했을 때 보여지는 이름으로, 변경이 가능합니다.

### RTSP URL

Real Time Streaming Protocol의 약자로 RTSP URL의 주소를 RTSP를 재생할 수 있는 VLC media Player 에 입력하면 IP 카메라의 영상을 RTSP로 볼 수 있습니다. VLC media Player는 <http://www.videolan.org>에서 다운받아 설치 바랍니다. (32비트를 추천합니다.)

### RTSP Connection

IP 카메라에 RTSP로 연결되어 있는 다른 장치들(PC, NVR 등)의 정보가 보여집니다.

### User

사용자의 ID, Password를 변경할 수 있습니다.

#### <참고>

Name(ID)과 Password는 숫자, 영문 조합으로 16자까지 입력 할 수 있습니다.

### Password Reset Question

사용자의 Password초기화시 사용되는 질문과 답을 변경할 수 있습니다..

## User setting

### Date & Time

#### SNTP

Simple Network Time Protocol 의 약자로 네트워크에 연결되어 있는 기기들간의 시간 동기화 기능이며, 켜거나 끌 수 있습니다

- ON: SNTP 서버의 시간으로 IP 카메라 시간이 동기화 됩니다.
- OFF: IP 카메라의 시간을 수동으로 설정합니다.

#### Date & Time setting

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### **Summer time (일광 시간 절약제)**

Summer time(DST) 적용 지역에 설치되는 경우에 해당 Summer time(DST) 를 적용할지 여부를 설정합니다.

### **Time/Timezone**

녹화 설정을 하기 전에 제품의 시간을 설정해야 합니다.

제품 출하 시 Timezone 설정은 'UTC +09:00 Seoul'으로 되어 있습니다.

### **Camera time / PC Time**

카메라 시간 및 PC 시간을 보여줍니다.

## Network

IP 카메라의 네트워크 정보를 설정 할 수 있습니다.

### DHCP (유동 IP)

IP 카메라가 연결된 네트워크에 DHCP 서버가 있다면, DHCP를 'Enable'로 설정할 경우 IP카메라는 DHCP 서버로부터 자동으로 IP를 할당받을 수 있습니다.

IP 카메라가 연결된 네트워크에 DHCP 서버가 없다면, DHCP를 'Disable'로 설정해야 하며, IP 주소를 수동으로 설정해야 합니다. IP 카메라의 IP 주소는 네트워크 관리자에게 할당받으시기 바랍니다.

## Network setting

DHCP	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
IP Address	192.168.110.186
Subnet Mask	255.255.255.0
Default Gateway	192.168.110.1
DNS1	203.254.202.2
DNS2	164.160.1.2
MAC	00:30:8C:00:00:20

### IP Address

IP 주소는 카메라와 Control Center혹은 NVR에 접속 시 사용 됩니다. 단 서브넷마스크, 게이트웨이가 올바르게 설정 되어 있어야 하며, 네트워크 관리자에게 부여 받아 입력 합니다. (DHCP Enable으로 설정시 비활성화 됩니다.)

### Subnet Mask

네트워크상에서 통신할수 있는 IP의 범위를 설정하는 기능으로 네트워크 관리자에게 부여 받아 입력 합니다. (DHCP Enable으로 설정시 비활성화 됩니다.)

### Default Gateway

카메라의 외부 네트워크와 연결되기 위하여 게이트웨이의 주소는 반드시 입력되어야 하며, 게이트웨이 주소는 네트워크 관리자에게 부여 받아 입력 합니다. (DHCP Enable으로 설정시 비활성화 됩니다.)

### DNS

Domain Name Server의 약자로 도메인을 사용 하기 위해서는 DNS 주소를 반드시 입력되어야 하며, DNS 주소는 네트워크 관리자에게 부여 받아 입력 합니다. (DHCP Enable 으로 설정시 비활성화 됩니다.)

## System Log

시스템 변경사항을 로그로 보여줍니다.

### <참고>

RTSP Play 로그는 10초에 한번 모아서 기록합니다.

### System Log

Index	Time	Log	IP	Operation
96	2017-11-03 14:22:20	RTSP Play (1 times)	192.168.110.245	User
95	2017-11-03 14:08:20	Modify Setting - Device (Web)	192.168.110.238	User
94	2017-11-03 14:08:11	Modify Setting - Device (Web)	192.168.110.238	User
93	2017-11-03 14:07:52	Modify Setting - Event (Web)	192.168.110.238	User
92	2017-11-03 14:07:47	Modify Setting - Event (Web)	192.168.110.238	User
91	2017-11-03 14:07:35	Modify Setting - Device (Web)	192.168.110.238	User
90	2017-11-03 14:07:27	Modify Setting - Device (Web)	192.168.110.238	User
89	2017-11-03 14:06:58	Modify Setting - Event (Web)	192.168.110.238	User
88	2017-11-03 14:06:41	Modify Setting - Event (Web)	192.168.110.238	User
87	2017-11-03 14:03:30	Modify Setting - ISP (Web)	192.168.110.238	User
86	2017-11-03 14:03:26	Modify Setting - Event (Web)	192.168.110.238	User
85	2017-11-03 14:01:51	Modify Setting - Event (Web)	192.168.110.238	User
84	2017-11-03 13:57:05	RTSP Play (1 times)	192.168.110.238	User
83	2017-11-03 12:30:29	RTSP Play (1 times)	192.168.110.238	User
82	2017-11-03 12:29:17	RTSP Play (1 times)	192.168.110.238	User

Previous 1 2 3 4 5 6 7 Next  
RTSP Play 로그는 최대 10초에 한번 모아서 기록합니다.

## Maintenance

펌웨어를 업그레이드 하거나 설정을 초기화 할 수 있습니다.

### Installed FW Ver

IP 카메라의 현재 펌웨어 버전을 표시합니다.

### New FW

업그레이드할 펌웨어의 경로를 선택한뒤 "Upload" 를 실행하면 IP 카메라의 펌웨어를 업그레이드할 수 있습니다.

### Ping Test

Enable(활성화) 시 Target IP Address 에 입력되어 있는 IP 로 Ping Test 하여 1분동안 응답이 없는 경우 재부팅 합니다. 네트워크 환경이 불안정한 경우 Enable할 것을 권장합니다.

### Periodically Reboot

Enable(활성화) 시 매일 지정된 시간에 재부팅 합니다. 재부팅에는 2~3초만 소요됩니다.

### Reset

- Factory Default: 네트워크 설정을 포함한 모든 설정이 초기화 됩니다.
- Config Reset: 네트워크 설정을 제외한 모든 설정이 초기화 됩니다.
- Reboot: IP 카메라가 재시작 합니다.

## Firmware update

Installed FW Ver. 1.4.0  
New FW  선택된 파일 없음

## Recovery

Ping Test ☒ Enable ☐ Disable  
Target IP Address   
If enabled, the camera periodically do ping test and reboots on failure

Periodically Reboot ☒ Enable ☐ Disable  
Hour   
If enabled, the camera will be rebooted at the specified time.

## Reset

Factory Default	Reset all configuration
Config Reset	Reset configuration(exclude: network setting, system log)
<input type="button" value="Reboot"/>	

### <참조>

1. IP 카메라 기본 설정 - ID : admin / Password : 12345 / IP : 192.168.0.2 / DHCP : Off
2. 카메라 펌웨어 업그레이드 중 카메라 전원이 유지되어야 합니다.
3. Ping Test는 부팅 후 5분 동안은 동작하지 않습니다.
4. Ping Test Enable(활성화) 할 때 접근 가능하지 않은 IP로 설정할 경우 Disable(비활성화) 됩니다.
5. 네트워크 회선이 루핑(Looping) 등으로 인해 네트워크 폭주가 감지 되면 1분 후 재시작 합니다. 네트워크 회선 이중화 구성시 STP(스패닝 트리 프로토콜) 구성 완료 이후 IP카메라 설치를 권장합니다.

## ISP SETUP

### Lens

#### DC Mode

DC Iris 렌즈를 사용할 경우 선택합니다.

#### Manual Mode

Manual Iris 렌즈를 사용할 경우 선택합니다.

<참조>

모델에 따라 다르게 보여집니다.

### 2-Motor (AF 모델)

#### D&N AF

Day ↔ Night 로 전환 시 미세하게 렌즈를 움직여 포커스를 맞춥니다. (OFF/ON)

#### PWR-ON AF

전원이 연결되면 자동으로 포커스를 맞춥니다. (OFF/ON)

#### Zoom AF

줌 동작 후 자동으로 포커스를 맞춥니다. (OFF/ON)

#### Auto Focus

- Correct AF: 렌즈가 동작할 수 있는 전체 구간을 검색하여 포커스를 맞춥니다. 속도가 느리지만, 정확히 초점을 맞출 수 있습니다.
- Quick AF: 현재 렌즈 위치를 기준으로 렌즈를 조금 동작시켜 포커스를 맞춥니다. 속도가 빠르지만, 현재의 초점이 많이 틀어져 있는 경우에는 'Correct AF'를 사용하는 것을 권장합니다.

#### Manual

사용자가 직접 렌즈를 제어하여 화각과 포커스를 조절할 수 있습니다.

- Tele/ Wide: 영상을 확대 하거나 축소 하여 화각을 맞출 수 있습니다.
- Near / Far: 초점거리를 가깝게 하거나 멀리 하여 포커스를 맞출 수 있습니다.
- Near(Step) / Far(Step): 미세하게 포커스를 맞출 때 사용합니다

### Focus ADJ (Non AF 모델)

Non AF 모델 (매뉴얼 렌즈)의 포커스를 맞출 때 사용합니다. Mode가 ON이면 사용자가 Manual로 포커스를 맞출 때 쉽고, 정확하게 포커스를 조절하기 위하여 영상의 왼쪽에 서로 중첩되는 두 가지 색의 Gauge를 보여줍니다. 포커스가 가장 잘 맞는 지점(노란색)과 현재의 포커스 값(녹색)을 가장 높은 값에서 일치 시키면 정확히 포커스를 맞출 수 있습니다.

## LENS

Mode

DC ▼

## 2-MOTOR

D&N AF

☒ OFF ☐ ON

PWR-ON AF

☒ OFF ☐ ON

Zoom AF

☐ OFF ☒ ON

Auto Focus

Correct AF

Quick AF

Manual

Tele

Wide

Near

Far

Near(step)

Far(step)

## FOCUS ADJ

Mode

☒ OFF ☐ ON

## Exposure

D-EXPOSURE는 Day의 노출을 설정하며, N-EXPOSURE는 Night의 노출을 설정합니다.

### Brightness

밝기를 조절합니다. 높을수록 밝아 집니다. (0~20)

### Shutter

- Indoor : 실내 환경에 최적화된 설정
- Outdoor : 실외 환경에 최적화된 설정
- Indoor-Anti Blur : 실내 환경에서 블러 현상 발생을 방지하는 설정
- Outdoor-Anti Blur : 실외 환경에서 블러 현상 발생을 방지하는 설정
- Manual : 셔터 속도를 수동으로 설정
- Flicker : 플리커 현상을 방지하는 설정

### Speed

Shutter가 Manual일 때 셔터 속도를 12 단계(1/30 ~ 1/30000)로 변경할 수 있습니다.

### DSS

Digital Slow Shutter 의 약자로 외부 빛의 양이 줄어 어둡게 보여질 때 셔터의 속도를 느리게 하여 광량을 확보하는 기능입니다.

DSS를 높게 설정하면 영상은 밝아지지만 움직임이 있을 경우 블러 현상이 발생합니다.

### AGC

Automatic Gain Control 의 약자로 외부 빛의 양이 줄어 카메라 감도가 떨어 졌을 때 출력을 항상 일정하게 유지하기 위해 자동으로 이득을 보정하고 제어 하는 기능입니다. 높을수록 AGC에 의한 보정과 제어를 많이 합니다. AGC 값이 높을수록 노이즈가 발생할 수 있습니다.

### Anti-blur

블러 현상을 방지 하는 기능으로 Shutter의 Indoor-Anti Blur 및 Outdoor-Anti Blur 에서 사용할 수 있습니다. Lowest 부터 Highest까지 설정할 수 있으며, 높을수록 Anti-blur를 많이 합니다.

## D-EXPOSURE

Brightness	<input type="text" value="10"/>	[0~20]
Shutter	<input type="text" value="Indoor"/>	
Speed	<input type="text" value="1/30"/>	
DSS	<input type="text" value="Off"/>	
AGC	<input type="text" value="7"/>	[0~10]
Anti-blur	<input type="text" value="Middle"/>	

## N-EXPOSURE

Brightness	<input type="text" value="10"/>	[0~20]
Shutter	<input type="text" value="Indoor"/>	
Speed	<input type="text" value="1/30"/>	
DSS	<input type="text" value="X2"/>	
AGC	<input type="text" value="7"/>	[0~10]
Anti-blur	<input type="text" value="Low"/>	

## HLC/BLC/WDR

HLC, BLC, WDR, OFF Mode 중 하나를 선택할 수 있습니다.

### HLC

노출이 기준 값 이상 초과한 곳을 마스킹하여 전체의 노출을 보정하는 기능입니다.

- Level : 높을수록 강한 빛을 마스킹 하며, 낮을수록 약한 빛도 마스킹 합니다.
- Color : 마스킹 하는 색을 선택할 수 있습니다.

### BLC

역광 보정 기능으로 설정된 영역을 적정 밝기로 맞추어 선명한 영상을 얻을 수 있습니다.

### WDR

3D 역광 보정 기능으로 매우 밝거나 매우 어두운 영역도 잘 보이게 합니다.

## HLC/BLC/WDR

Mode

### HLC

Level  [0~20]

Color

### BLC

H position  [0~20]

V position  [0~20]

H size  [0~20]

V size  [0~20]

### WDR

Level

## DAY & NIGHT

주간 모드 또는 야간 모드로 변경되는 기준을 선택합니다.

- Auto: 영상을 분석하여 주간 ↔ 야간 이 자동으로 변경
- Color: 항상 컬러 영상
- Black & White: 항상 흑백 영상
- Extern: 조도센서(CDS)로 감지된 값을 분석하여 주간 ↔ 야간이 자동으로 변경

### Lux Level

주간 ↔ 야간 변경 레벨을 설정합니다. 낮을수록 저조도에서 변경됩니다.

### Anti-Hunt

밝기가 주간과 야간 기준레벨 근처인 경우에 잦은 주간 ↔ 야간 변환이 발생할 수 있습니다. 이러한 잦은 변환을 방지하기 위해 Anti-Hunt 레벨을 조절합니다. 높을수록 주간 ↔ 야간 경계에서 잦은 변환을 방지할 수 있습니다.

## DAY & NIGHT

Mode

Lux Level

Anti-Hunt

Delay time

### Delay Time

주간 ↔ 야간 변경될 때 설정한 시간 이후 변경됩니다.

### <참고>

1. Color, Black&White Mode 에서는 Lux Level, Anti-Hunt, delay Time을 변경할 수 없습니다.
2. Auto Mode 에서는 Lux Level, Anti-Hunt, Delay time 을 변경할 수 있습니다.
3. Extern Mode 에서는 Lux Level, Anti-Hunt 을 변경할 수 없으며, Delay time은 변경할 수 있습니다.

## Color

### AWB

Auto White Balance의 약자로 AUTO, AUTOext, PRESET, MANUAL Mode중 하나를 선택할 수 있습니다.

- AUTO : 빛에 따라 자동으로 조절됩니다
- AUTOext : AUTO의 확장모드로, 색온도가 극저온 또는 극고온 환경에 적합합니다.
- PRESET: 하얀색 물체를 비추어 화이트밸런스를 맞춥니다.
- MANUAL: 적색 및 청색 게인 값을 직접 입력하여 화이트밸런스를 맞춥니다.

### Chroma

채도를 조절합니다.

### Preset

AWB의 PRESET Mode 에서만 실행할 수 있습니다. 하얀색 물체를 비춘 후 "SET"을 클릭하여 화이트밸런스를 맞춥니다. 화이트밸런스가 맞추어지면, "Idle"을 클릭하여 설정을 종료합니다

### Manual

이 메뉴는 AWB가 MANUAL Mode일 때 활성화 됩니다.

- Kelvin : 색 온도를 조절합니다. (3000K, 5000K, 8000K)
- R Gain : 적색 게인 값을 조절합니다.
- B Gain : 청색 게인 값을 조절합니다.

## Image

### Sharpness

영상의 선명도를 조정합니다.

### Gamma

영상의 Gamma 값을 조정합니다.

### H-Mirror

화면의 좌/우가 반전합니다.

### V-Mirror

화면의 상/하가 반전합니다.

### ACE

밝기 차이가 심한 역광 환경에서 어두운 곳의 밝기를 높여 화질을 개선합니다.

### Defog

안개, 황사로 인해 뿌옇게 된 영상을 선명하게 해 줍니다. (ON/OFF)

- AUTO: 영상을 분석하여 자동으로 동작합니다.
- Manual: 수동으로 Level을 Low, Middle, High 중 선택할 수 있습니다.

## COLOR

AWB    
Chroma  [0~20]

### Preset

Preset ☒ Idle ☐ SET

### Manual

Kelvin    
R Gain  [0~20]   
B Gain  [0~20]

## IMAGE

Sharpness  [0~10]   
Gamma    
H-Mirror ☐ Off ☒ On   
V-Mirror ☐ Off ☒ On   
ACE

Defog ☒ Off ☐ On   
Mode    
Level



## Shading

렌즈 중심과 주변의 빛의 불 균일에서 발생하는 명암을 보정합니다. (ON/OFF)

### Shading

☒ Off ☐ On

### Weight

100 [0~200]%

## DNR

저조도 환경에서 영상의 노이즈를 감쇄 합니다.

### DNR

Middle ▾

## Privacy

### Privacy Mask

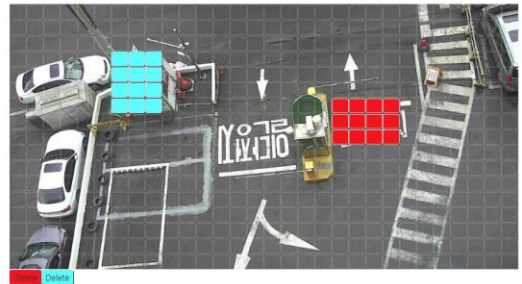
화면의 특정 구역을 보이지 않게 마스킹 할 수 있습니다. 최대 10개의 영역을 생성할 수 있으며, 모든 마스크 영역은 Color 메뉴에서 선택한 하나의 색깔로 마스킹됩니다.

- Enable: 프라이버시 마스크 영역 설정하기 위해서는 Enable ON 선택하여 프라이버시 마스크를 활성화한 뒤 화면 위에서 마우스 드래그하여 설정할 수 있습니다. PC의 UI상으로는 각 영역을 구별하기 위해 다양한 색깔로 박스가 그려지며, 색깔별 Delete 버튼을 누르면 해당 색깔의 프라이버시 마스크가 삭제됩니다.
- Color: 프라이버시 마스킹의 색을 선택할 수 있습니다. 모든 마스킹 영역은 한가지 색으로 마스킹됩니다.
- Transparency: 프라이버시 마스킹의 투명도를 조절할 수 있습니다.

### Privacy Mask

submit

Enable ☒ Off ☒ On  
Color Cyan ▾  
Transparency 75% ▾



## Motion

움직임 감지 기능을 Enable하여 켜거나 Disable 하여 끌 수 있습니다.

### MOTION

### Motion OSD

MOTION관련된 OSD들의 화면 표시 여부를 선택합니다. (ON/OFF)

### Enable

☒ Disable ☐ Enable

### Detection Tone

2 [0~4]

### MD Rect Fill

☒ OFF ☐ ON

### Sensitivity

5 [0~10]

### Motion OSD

☐ OFF ☒ ON

### Text Alarm

☐ OFF ☒ ON

### Detection Tone

움직임 감지 영역에 포함되지 않은 영상을 하얀 색과 오버레이합니다. 값이 클수록 투명해집니다. 3은 완전 투명을 의미하며, 4는 Motion Zone의 경계선을 표시합니다. Motion OSD가 ON 되어 있어야 표시됩니다.

### Motion Zone

	Zone Disp	H-POS [0~60]	V-POS [0~34]	H-SIZE [0~60]	V-SIZE [0~34]	Submit
1	<input type="radio"/> OFF <input checked="" type="radio"/> ON	1	1	58	32	submit
2	<input checked="" type="radio"/> OFF <input type="radio"/> ON	10	11	20	11	submit
3	<input checked="" type="radio"/> OFF <input type="radio"/> ON	30	22	20	11	submit

### MD Rect Fill

움직임이 감지되었을 때 움직임 감지 영역의 테두리만 보여지게 하거나 움직임 감지 영역 전체를 채워서 보여지게 할 수 있습니다. OFF 시 테두리만 보여집니다. Motion OSD가 ON 되어 있어야 표시됩니다.

### Sensitivity

움직임의 민감도를 조절합니다. 숫자가 클수록 움직임에 민감합니다.

### Text Alarm

움직임의 종류에 따라 "WINDOW MOTION", "CAMERA MOVING" 텍스트가 보여집니다.

### Motion Zone

움직임을 감시할 영역을 총 3개까지 설정할 수 있습니다.

- Zone Disp : ON 되어있는 모션 존 영역 내의 움직임을 검출합니다.
- H-Pos : 모션 존의 가로 포지션을 선택합니다.
- V-Pos : 모션 존의 세로 포지션을 선택합니다.
- H-Size : 모션 존의 가로 크기를 선택합니다.
- V-Size : 모션 존의 세로 크기를 선택합니다.

### System

System 에서는 카메라 ID 및 Frequency 를 설정할 수 있습니다.

#### Cam ID

카메라 ID를 ON/OFF 할 수 있습니다. ON 하면 입력한 카메라 ID가 OSD로 영상과 함께 보여집니다.

- Position : 카메라 ID가 보여지는 위치를 선택합니다.  
(Left Up, Center Up, Right Up, Left Down, Center Down, Right Down)
- Color : 카메라 ID 의 글자색을 선택할 수 있습니다.

#### Frequency

지역 특성에 따라 60Hz 또는 50Hz 를 선택합니다.

#### ISP Reset

ISP(Image Signal Processor) 와 관련된 항목만 설정 초기화 됩니다.

## SYSTEM

Cam ID

Off ▼

CAMERA1

Position

Right Down ▼

Color

White ▼

Frequency

60Hz ▼

ISP Reset

RESET

#### <참고>

1. Position 및 Color 은 Cam ID가 ON 되어야 설정할 수 있습니다.
2. ISP Reset 항목 – Lens, 2-Motor, Exposure, BLC/BLC/WDR, Day&Night, Color, Image, Motion, System

## Flame Sensor

(\* 불꽃감지 카메라만 해당합니다.)

### Sensitivity

불꽃 인식 감도 설정과 스케줄을 설정할 수 있습니다.

- **Schedule Off** : 스케줄을 사용하지 않고 불꽃 검출 감도는 Sensitivity level for schedule off 의 설정값을 사용합니다.
- **Schedule On** : 최대 4개의 시간대를 설정할 수 있으며, 각 시간대 별로 적용시간 및 불꽃 감도를 다르게 설정할 수 있습니다.
- **Sensitivity Level** : 숫자가 클수록 불꽃에 민감합니다. (1~10 steps)

Sensitivity

☒ Schedule Off ☐ Schedule On

Sensitivity level for schedule off [7] [1~10]

Enable	Start Time	End Time	Sensitivity [1~10]
Default			
<input type="radio"/> Off <input type="radio"/> On	0 : 0	0 : 0	7
<input type="radio"/> Off <input type="radio"/> On	0 : 0	0 : 0	8
<input type="radio"/> Off <input type="radio"/> On	0 : 0	0 : 0	8
<input type="radio"/> Off <input type="radio"/> On	0 : 0	0 : 0	8

If the schedule is duplicated, it will operate sequentially from the above items.

<주의>

스케줄 시간이 중복되는 경우에는 위의 항목부터 순서대로 동작합니다.

### Gauge Display

불꽃 감지 센싱 Gauge Display를 ON/OFF 할 수 있습니다.  
ON 하면 Gauge Display가 보여집니다.

#### Gauge Display

☐ Off ☒ On

#### Detect Time

3 sec

#### Action Time

20 sec

### Detect Time

불꽃으로 판단하기 위한 감지시간을 설정합니다.  
(0.5/1/3/5/10sec)

### Action Time

불꽃 알람은 불꽃이 감지되는 동안 발생하며, 불꽃이 꺼진 이후에도 action time 설정 시간동안 알람이 지속됩니다.

#### Alarm Display

##### Enable

☒ Off ☐ On

##### Color

Red

##### Transparency

50%

##### Line Width

10 [1~10]

### Alarm Display

ON 되어있으면, 불꽃 알람이 발생했을 때 사용자가 설정한 색상/투명도가 영상에 오버레이되어 깜빡입니다.

- **Color** : 영상에 표시되는 경보의 색상을 설정합니다.
- **Transparency** : 영상에 표시되는 경보의 투명도를 설정합니다.
- **Line Width** : 영상에 표시되는 경보의 두께를 설정합니다.

#### Extern Alarm

☒ Off ☐ Output ☐ Input

#### Output Level

☒ Active Low ☐ Active Hi

### Extern Alarm

Extern Alarm을 OUT/IN 으로 설정 시 Extern Alarm 신호선을 통해 외부장치 알람을 입력받을 수 있습니다. 알람 신호가 입력되면 NVR로 알람을 전송합니다. Extern Alarm을 Off 로 설정 시 Extern Alarm 신호선은 사용되지 않습니다.

- **OFF**: 불꽃알람 신호선을 사용하지 않습니다.
- **INPUT**: 불꽃알람 신호선 2 line(GND/불꽃알람)을 연결시키면 실제 불꽃감지가 되지않아도 불꽃알람이 발생합니다.
- **OUTPUT**
  - ◆ Active Low: 불꽃이 감지되면 불꽃알람 신호선으로 0V 가 출력됩니다.
  - ◆ Active Hi: 불꽃이 감지되면 불꽃알람 신호선으로 3.3V 가 출력됩니다.

<참조> 불꽃 감지 카메라는 리셋버튼 대신 Extern Alarm 케이블이 적용됩니다.

초기값은 OFF 이므로 반드시 IN 또는 OUT 으로 설정하여 Flame Alarm 신호 라인을 사용하십시오.  
돔 카메라의 경우 Extern Alarm 신호선이 없어 해당기능을 지원하지 않습니다.

## Thermal Sensor T2

(\* 열감지 카메라만 해당합니다.)

### TARGET

열감지 인식 및 알람을 설정할 수 있습니다.

- Distance : 카메라와 측정 대상간의 거리를 설정합니다. (1 ~ 5M, 6M 이상)
- Degree : 알람을 발생시킬 온도를 설정합니다. (50 ~ 120 도)
- Size : 가장 높은 온도가 감지된 감지 영역 크기를 설정합니다. (1x1, 3x3, 5x5)
- Emissivity : 에너지를 흡수한 후 재방사 하거나 반사현상이 일어날 때 복사 하는 에너지의 비율을 말합니다. 측정하려는 물체에 따라 방사율을 설정할 수 있습니다. (0.95 Matt, 0.80 Semi-matt, 0.60 Semi-glossy, 0.30 Glossy)
- Detect Time : 알람 발생 하기 위한 감지 시간을 설정합니다. (1, 2, 3, 4, 5, 10 sec)
- Action Time : 알람 발생시 Action time 동안 알람이 지속됩니다. (Keep on, 1, 3, 5, 10 ~ 60 sec)

### TARGET

Distance	4m ▼
Degree	50 ▼
Size	1x1 ▼
Emissivity	0.95(Matt) ▼
Detect Time	5 sec ▼
Action Time	20 sec ▼

## Thermal Sensor T450

(\* 열감지 카메라만 해당합니다.)

### TARGET

열감지 인식 및 알람을 설정할 수 있습니다.

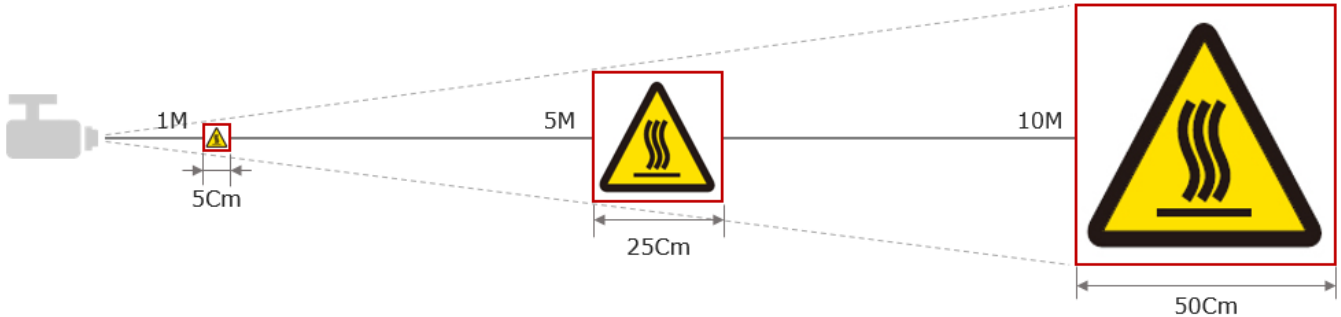
- Mode
  - Low Temp(20°C~180°C) : 20~180°C 사이의 온도를 측정할 때 설정합니다.
  - High Temp(180°C~450°C) : 180~450°C 사이의 온도를 측정할 때 설정합니다.
- Distance : 카메라와 측정 대상간의 거리를 설정합니다. (1 ~ 5M, 6M 이상)
- Degree : 알람을 발생시킬 온도를 설정합니다. (20 ~ 450 도)
- Size : 가장 높은 온도가 감지된 감지 영역 크기를 설정합니다. (1x1, 3x3, 5x5)
- Emissivity : 에너지를 흡수한 후 재방사 하거나 반사현상이 일어날 때 복사 하는 에너지의 비율을 말합니다. 측정하려는 물체에 따라 방사율을 설정할 수 있습니다. (0.96 Matt, 0.80 Semi-matt, 0.60 Semi-glossy, 0.30 Glossy)
- Detect Time : 알람 발생 하기 위한 감지 시간을 설정합니다. (1, 2, 3, 4, 5, 10 sec)
- Action Time : 알람 발생시 Action time 동안 알람이 지속됩니다. (Keep on, 1, 3, 5, 10 ~ 60 sec)

### TARGET

Mode	<input checked="" type="radio"/> Low Temp(50°C~180°C) <input type="radio"/> High Temp(180°C~450°C)
Distance	4m ▼
180 Degree	50°C ▼
450 Degree	180°C ▼
Size	1x1 ▼
Emissivity	0.96(Matt) ▼
Detect Time	5 sec ▼
Action Time	20 sec ▼

<주의>

1. Distance 입력값과 측정 대상간의 거리가 상이할 경우 온도가 잘못 측정될 수 있습니다. Distance 입력시 측정 대상간의 거리를 정확히 입력 바랍니다.
2. 카메라와 측정 대상간의 거리가 멀어질수록 측정 대상의 면적이 넓어야 온도 측정이 가능합니다. 1M 거리에서 가로세로 5Cm, 5M 거리에서 가로세로 25Cm, 10M 거리에서 가로세로 50Cm 이상 면적을 권장합니다.



3. 비금속, 플라스틱, 종이, 석고, 목재, 페인트 등 일반적인 물체의 온도 측정할때 Thermal Sensor T2 는 권장하는 방사율은 0.95 Matt 이며, Thermal Sensor T450 은 0.96 Matt 입니다.
4. 경금속 및 금속 산화물의 경우 방사량이 낮거나 일정하지 않아 온도 측정이 제한적입니다. 경금속 및 금속 산화물의 경우 측정 대상에 페인트 또는 방사 접착테이프 등을 통해 방사량을 개선 뒤 온도 측정 바랍니다.
5. 측정대상의 실제 방사율과 설정한 방사율(Emissivity)이 상이할 경우 온도가 잘못 측정될 수 있습니다.
6. 주요 물질들의 방사량 도표 (일반수치)

물질명	방사율
철	0.1 ~0.3
산화니켈	0.4 ~ 0.7
주철	0.8
플라스틱	0.94
유성 페인트	0.85 ~ 0.95

## DISPLAY

- **FOV Display** : Field Of View 의 약자로 열을 감지할 수 있는 시야각을 시각적으로 보여주는 기능입니다. (On/Off)
- **H position** : ROI의 가로 포지션을 선택합니다.
- **V position** : ROI의 세로 포지션을 선택합니다.
- **H size** : ROI의 가로 크기를 선택합니다.
- **V size** : ROI의 세로 크기를 선택합니다.
- **INFO Display** : ON 시, 아래의 정보들이 영상에 표시됩니다.
  - Distance** : 설정한 Target 'Distance'
  - TARGET** : 알람을 발생 시킬 Target 온도 ('Degree')
  - CURRENT** : 현재 온도 (섭씨)
  - Emissivity** : 설정한 Emissivity
- **Transparency** : ROI의 투명도를 조절할 수 있습니다. (0, 50, 75 %)

## DISPLAY

### FOV Display

☐ Off ☒ On

### H position

1 [0~74]

### V position

1 [0~54]

### H size

78 [6~80]

### V size

58 [6~60]

### INFO Display

☐ Off ☒ On

### Transparency

0% ▼

---

## EXTERN SIGNAL

### Set Port

- OFF : Extern Alarm 을 사용하지 않습니다.
- Output : Extern Alarm 신호선을 통해 외부 장치로 Alarm 신호를 출력하는 설정입니다.
- Input : Extern Alarm 신호선을 통해 외부 장치로부터 Alarm 신호를 입력 받는 설정입니다. (※ T450 모델만 해당됩니다.)
- Output Level : 열감지 알람이 발생하지 않으면 신호 출력이 없으며(hi-Z), 열감지 알람이 발생하면 출력을 '0' (ACTIVE LOW) 또는 '1' (ACTIVE HIGH)로 출력합니다.

### Sensor Reboot

열감지 센서를 재시작 할 때 사용합니다.

## EXTERN SIGNAL

### Set Port

☒ OFF ☐ Output ☐ Input

### Output Level

☒ Active Low ☐ Active Hi

### Sensor Reboot

REBOOT

<참조> 열 감지 카메라는 리셋버튼 대신 Extern Alarm 케이블(적색-알람 아웃, 흑색-GND)이 적용됩니다.

## Thermal Sensor T36.5-V1/V2

(\* 발열감지 카메라만 해당합니다.)

### ALARM

발열감지 모드 변경 및 알람을 설정할 수 있습니다.

- Distance : 카메라와 측정 대상간의 거리를 설정합니다.  
(1M, 1.5M, 2M, 2.5M, 3M, 기본값 1M)
- Temp. Mode
  - SKIN Temp. : 피부 온도를 측정하여 표시 하는 모드 입니다. (기본값)
  - BODY Temp. : 학습된 온도 데이터를 분석하여 신체 온도로 보정하여 표시 하는 모드 입니다.
    - ◆ LOW : 저감도 모드로 발열을 감지 합니다.
    - ◆ HIGH : 고감도 모드로 발열을 감지 합니다.
- Temp. Scale
  - CELSIUS : 온도 표시를 섭씨(°C)로 설정합니다. (기본값)
  - FAHRENHEIT : 온도 표시를 화씨(°F)로 설정합니다.
- Auto Set
  - AUTO : AUTO 선택시 Degree Auto 가 활성화 됩니다. (기본값)
  - MANUAL : MANUAL 선택시 Degree Manual 이 활성화 됩니다.
- Degree Auto : 학습된 온도 데이터를 분석 하여 알람을 발생시킬 온도를 자동으로 설정 합니다.
  - CELSIUS : +0.5°C ~ +3°C 선택할 수 있습니다. (기본값 +1.5°C)
  - FAHRENHEIT : +1°F ~ 6°F 선택할 수 있습니다. (기본값 +3°F)
- Degree Manual : 알람을 발생시킬 온도를 설정합니다.
  - CELSIUS : 20°C ~ 45°C 선택할 수 있습니다.
  - FAHRENHEIT : 68°F ~ 113°F 선택할 수 있습니다.
- Size : 가장 높은 온도가 감지된 감지 영역 크기를 설정합니다. (1x1 고정)
- Emissivity : 에너지를 흡수한 후 재방사 하거나 반사현상이 일어날 때 복사 하는 에너지의 비율을 말합니다. (0.96 Matt 고정)
- Detect Time : 알람 발생 하기 위한 감지 시간을 설정 합니다. (1, 2, 3, 4, 5, 10 sec, 기본값 1sec)
- Action Time : 알람 발생시 Action time 동안 알람이 지속됩니다. (Keep on, 1, 3, 5, 10, 20, 30, 40, 50, 60 sec, 기본값 5sec)

### DISPLAY

- FOV Display : Field Of View 의 약자로 열을 감지할 수 있는 시야각을 시각적으로 보여주는 기능입니다. (On/Off)
- INFO Display :아래 정보들이 영상에 표시됩니다. (Off/On)
  - Distance : 설정한 Distance 값
  - ALARM : 알람 발생 온도
  - CURRENT 1 : ROI 1 온도
  - CURRENT 2 : ROI 2 온도
  - NORMAL : 측정된 온도들을 분석하여 온도 표시
- TEMP Display : 온도 표시를 On/Off 할 수 있습니다.
- STATUS Display : 화면 표시 내용을 설정합니다.
  - ALARM : ALARM, NORMAL 값이 화면에 표시됩니다.
  - STATUS : 측정값의 결과가 색상으로 표시됩니다. (정상-녹색, 발열-적색)
- LOW TEMP Display : ROI내에 온도가 신체 온도보다 낮을 때, 온도 표시 여부를 설정합니다. (Off/On)
  - Off : ROI내에 온도가 신체 온도보다 낮을 때, 온도 및 박스를 표시하지 않습니다.
  - On : 온도를 항상 표시합니다.
- ANALYSIS Display : 온도를 분석하여 자동으로 NORMAL 값을 업데이트 합니다.(Off/On)

### ALARM

Distance	1 m ▾
Temp. Mode	<input type="radio"/> SKIN Temp. <input checked="" type="radio"/> BODY Temp.
Sensitivity	<input checked="" type="radio"/> LOW <input type="radio"/> HIGH
Temp. Scale	<input checked="" type="radio"/> CELSIUS <input type="radio"/> FAHRENHEIT
Auto Set	<input checked="" type="radio"/> AUTO <input type="radio"/> MANUAL
Degree Auto	+1.0°C ▾
Degree Manual	+37.5°C ▾
Size	1x1 ▾
Emissivity	0.96(Matt) ▾
Manual	0.96 ▾
Detect Time	1 Sec ▾
Action Time	1 Sec ▾

### DISPLAY

FOV Display	<input checked="" type="radio"/> Off <input type="radio"/> On
INFO Display	<input checked="" type="radio"/> Off <input type="radio"/> On
TEMP Display	<input type="radio"/> Off <input checked="" type="radio"/> On
STATUS Display	<input checked="" type="radio"/> ALARM <input type="radio"/> STATUS
LOW TEMP Display	<input checked="" type="radio"/> Off <input type="radio"/> On
ANALYSIS Display	<input type="radio"/> Off <input checked="" type="radio"/> On
FONT SIZE	<input checked="" type="radio"/> SMALL <input type="radio"/> LARGE
Transparency	0% ▾

- FONT SIZE
  - SMALL : 측정된 온도의 글씨가 작게 보여집니다.
  - LARGE : 측정된 온도의 글씨가 크게 보여집니다.
- Transparency : ROI의 투명도를 조절할 수 있습니다. (0, 50, 75 %)

### VIRTUAL BLACK BODY

- Display : VIRTUAL BLACK BODY 기능을 On 하거나 Off 할 수 있습니다.
- H position : VIRTUAL BLACK BODY의 가로 포지션을 선택합니다.
- V position : VIRTUAL BLACK BODY의 세로 포지션을 선택합니다.
- Rect Fill : VIRTUAL BLACK BODY 영역을 음영 처리 할 수 있습니다.(Off/On)
- Transparency : VIRTUAL BLACK BODY의 투명도를 조절할 수 있습니다. (0, 50 75%)

### VIRTUAL BLACK BODY

Display ☐ Off ☒ On  
 H position  [0~77]  
 V position  [0~57]  
 Rect Fill ☒ Off ☐ On  
 Transparency

### ROI Zone

Region Of Interest 의 약자로 측정할 온도 영역을 보여주는 기능입니다.

#### ROI Zone1

- Display : ROI 영역 1을 On 하거나 Off 할 수 있습니다.
- H position : ROI의 가로 포지션을 선택합니다.
- V position : ROI의 세로 포지션을 선택합니다.
- H size : ROI의 가로 크기를 선택합니다.
- V size : ROI의 세로 크기를 선택합니다.

#### ROI Zone2

- Display : ROI 영역 2를 On 하거나 Off 할 수 있습니다.
- H position : ROI의 가로 포지션을 선택합니다.
- V position : ROI의 세로 포지션을 선택합니다.
- H size : ROI의 가로 크기를 선택합니다.
- V size : ROI의 세로 크기를 선택합니다.

ROI Zone Setting

ROI Zone	Display	H position [0~74]	V position [0~54]	H size [6~80]	V size [6~60]	Submit
1	<input type="radio"/> Off <input checked="" type="radio"/> On	<input type="text" value="15"/>	<input type="text" value="5"/>	<input type="text" value="50"/>	<input type="text" value="40"/>	<input type="button" value="Submit"/>
2	<input checked="" type="radio"/> Off <input type="radio"/> On	<input type="text" value="41"/>	<input type="text" value="5"/>	<input type="text" value="30"/>	<input type="text" value="50"/>	<input type="button" value="Submit"/>

### EXTERN SIGNAL

#### Set Port

- OFF : Extern Alarm 을 사용하지 않습니다.
- Output : Extern Alarm 신호선을 통해 외부 장치로 Alarm 신호를 출력하는 설정입니다.
- Output Level : 열감지 알람이 발생하지 않으면 신호 출력이 없으며(hi-Z), 열감지 알람이 발생하면 출력을 '0' (ACTIVE LOW) 또는 '1' (ACTIVE HIGH)로 출력합니다.

### EXTERN SIGNAL

Set Port ☒ OFF ☐ Output  
 Output Level ☒ Active Low ☐ Active Hi

### SYSTEM

- Compensate : 측정된 온도를 설정한 온도로 보정합니다.
  - CELSIUS : -4.9°C ~ +4.9°C
  - FAHRENHEIT : -9.8°F ~ +9.8°F
- Debug : 카메라 점검에 필요한 UI가 화면에 표시 됩니다. (Off/On)
- Sensor Reboot : 발열감지 센서를 재시작 할 때 사용합니다.

### SYSTEM

Compensate   
 Debug ☒ OFF ☐ On  
 Sensor Reboot   
 Normal Set



- 
- Normal Set : NORMAL 값을 수동으로 지정할 때 사용합니다. ROI 영역 내에 평균 온도로 지정할 사람을 위치한 후 SET 버튼을 클릭합니다.

<주의>

1. 본 제품은 공공 시설물, 공항 등에서 사용하는 열화상 카메라와 동일한 용도와 목적의 제품으로 불특정 다수의 발열을 비접촉 방식으로 감지함으로써 발열 검역 및 선별을 용이하게 할 수 있습니다.
2. 본 제품은 의료기기가 아니므로 질병의 유무를 판단할 수 없습니다. 발열이 의심되면 반드시 관리자의 통제에 따라 의료기기(체온계)를 통해 정확한 체온 측정이 필요합니다.
3. Distance 입력값과 측정 대상간의 거리가 상이할 경우 온도가 잘못 측정될 수 있습니다. Distance 입력시 측정 대상간의 거리를 정확히 입력 바랍니다.
4. 발열감지 카메라는 실내 설치를 권장 합니다.
5. 발열감지 카메라를 뜨거운 물체를 비추는 것은 권장 하지 않습니다.
6. 온도 측정시 지정된 위치에서 카메라를 바라보고 최소 1 초간 멈춰서 측정하는 것을 권장 합니다.
7. 20 도 이하 45 도 이상의 피사체는 알람조건에서 자동 제외 됩니다.
8. 카메라 부팅 직후 약 5 분간(최대 15 분) 안정화 시간이 필요 합니다. 안정화 이후부터 사용을 권장 합니다. (안정화중 노랑색 박스, 안정화 완료 초록색 박스)
9. 열감지 센서의 온도 정확도를 유지하기 위한 보정작업이 비주기적으로 수행됩니다. 센서 보정작업 중에는 온도 측정이 지연될 수 있습니다.
10. 온도 감지 센서와 이미지 센서가 물리적으로 분리되어 있어서 이미지 중심에 편차가 발생할 수 있습니다.

<참조> 발열 감지 카메라는 리셋버튼 대신 Extern Alarm 케이블(적색-알람 아웃, 흑색-GND)이 적용됩니다.

## LPR Mode

(\* LPR 카메라만 해당합니다.)

차량 번호 인식 기능을 설정합니다.

**LPR Mode** : ON/OFF 설정이 가능하며, ON/OFF 설정시 아래의 항목이 변경됩니다.

### LPR Mode ON

- **Lens** : Manual
- **Shutter** : Outdoor /
- **Anti-blur** : High
- **DNR level** : Off
- **Image Range** : USE
- **Night DSS** : Off

## LPR MODE

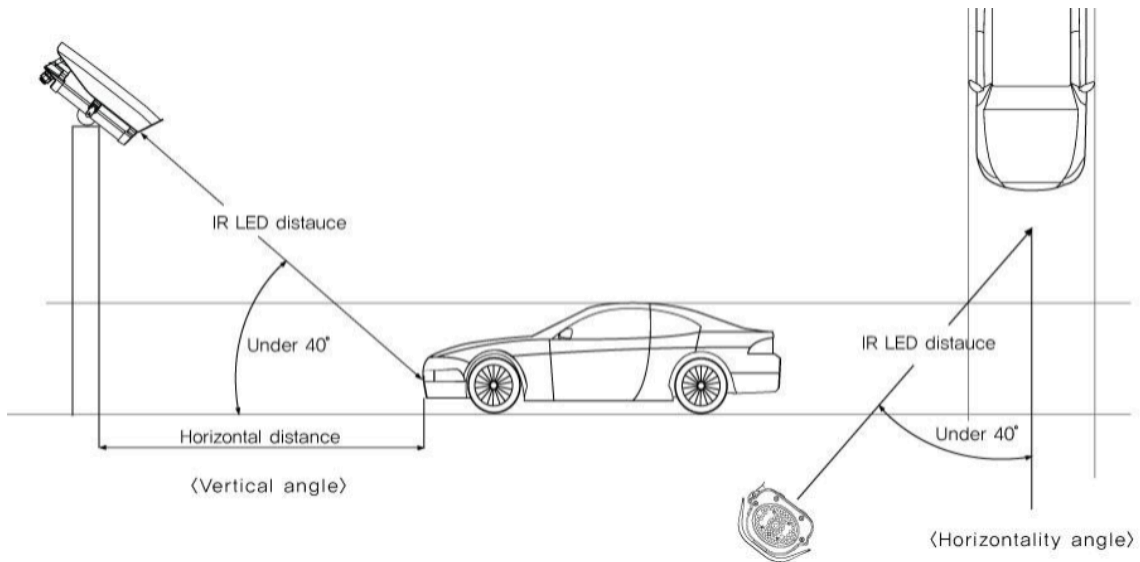
Mode

☐ OFF ☒ ON

### LPR Mode OFF

- **Lens** : DC
- **Shutter** : Outdoor
- **Anti-blur** : Middle
- **DNR level** : Low
- **Image Range** : FULL-SCALE
- **Night DSS** : x2

## 번호판 인식 권장 설치 환경



### <참고>

1. LPR Mode 설정값은 현장 상황에 따라 변경이 가능합니다.

## VIDEO SETUP

### Stream

#### RTSP Port

RTSP 서비스 포트를 설정 합니다. 기본 554 포트를 사용합니다.

RTSP Port  [1~65535, default:554, do not use 80]

#### Main stream

Main stream은 일반적으로 라이브 모니터링 및 고해상도 녹화용으로 사용됩니다.

##### main stream

h.264 profiles   
h.264 resolution   
h.264 FPS   
h.264 GoP(IDR)   
h.264 bitrate

#### H.264 Profiles

Main stream의 H.264 Profiles을 보여줍니다. Main profile과 Baseline profile 중 선택할 수 있습니다.

#### H.264 Resolution

H.264 Resolution은 Main stream의 해상도이며, 해상도는 1920x1080, 1280x720, 800x600, 704x480, 704x400, 640x360, 480x272, 320x184을 선택할 수 있습니다.

##### sub stream

h.264 profiles   
h.264 resolution   
h.264 FPS   
h.264 GoP(IDR)   
h.264 bitrate

#### H.264 FPS

Main stream의 프레임 레이트를 선택합니다. 프레임 레이트는 NTSC인 경우 30fps, 15fps, 10fps, 5fps을, PAL인 경우 25fps, 12fps, 5fps를 선택할 수 있습니다.

#### H.264 GOP(IDR)

I frame의 삽입 주기를 설정합니다. Every 1 Sec 선택시 1초에 I-Frame 1장 포함되며, Every 2 Sec 선택시 2초에 I-Frame 1장 포함됩니다. (Group Of Pictures의 약자로 I-frame과 다음 I-frame 사이의 프레임 수를 의미합니다.)

#### H.264 Bitrate

H.264의 비트레이트를 선택합니다. 비트레이트는 5Mbps, 4Mbit, 3Mbit, 2Mbit, 1Mbit, 512Kbit, 256Kbit를 선택할 수 있습니다.

### Sub stream

Sub stream은 일반적으로 다분할 모니터링 및 모바일 서비스용으로 사용됩니다.

#### H.264 Profiles

Sub stream의 H.264 Profiles을 보여줍니다. Main profile과 Baseline profile 중 선택할 수 있습니다.

#### H.264 Resolution

H.264 Resolution은 Sub stream의 해상도이며, 640x360, 480x272, 320x184을 선택할 수 있습니다.

#### H.264 FPS

Sub stream의 프레임 레이트를 선택합니다. 프레임 레이트는 NTSC인 경우 30fps, 15fps, 10fps, 5fps을, PAL인 경우 25fps, 12fps, 5fps를 선택할 수 있습니다.

#### H.264 GOP(IDR)

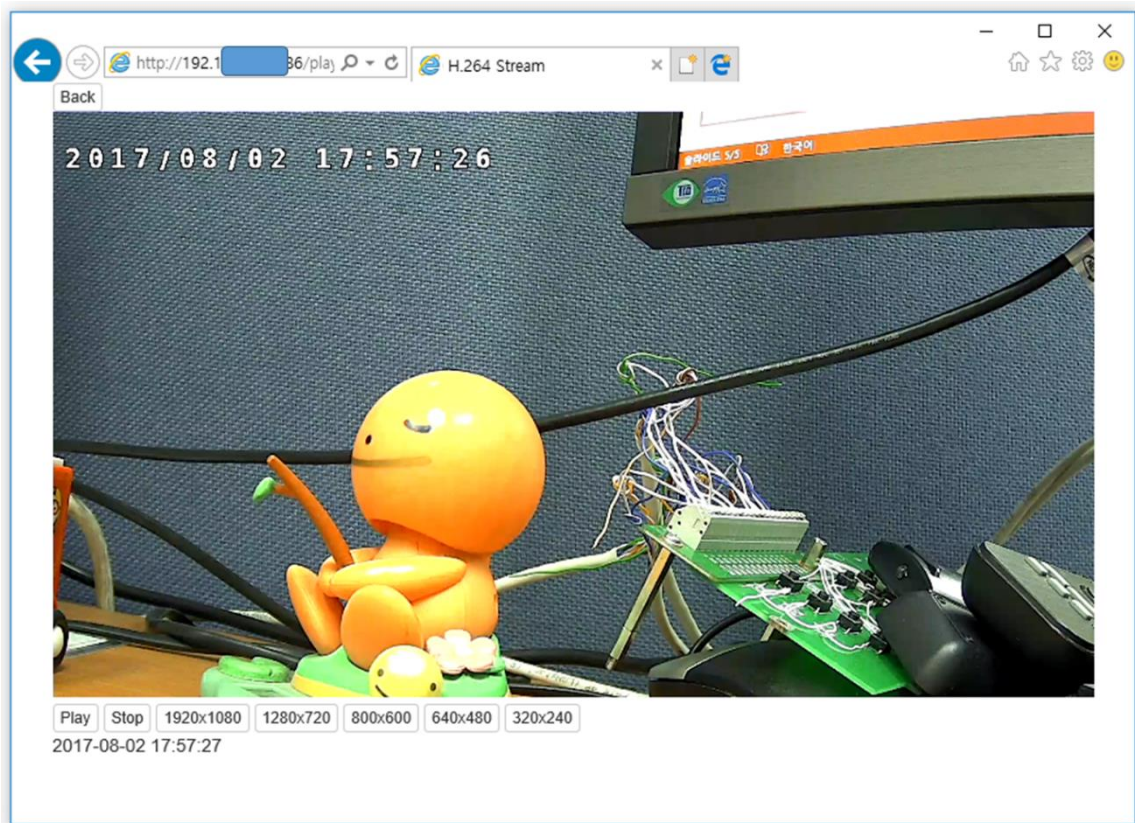
I frame의 삽입 주기를 설정합니다.

#### H.264 Bitrate

Sub stream의 비트레이트를 선택합니다. 비트레이트는 5Mbps, 4Mbit, 3Mbit, 2Mbit, 1Mbit, 512Kbit, 256Kbit, 128Kbit를 선택할 수 있습니다.

## H264 View

Webviewer > VIDEO SETUP > H264 View 를 실행하면 IP 카메라의 LIVE 영상을 보실 수 있습니다.

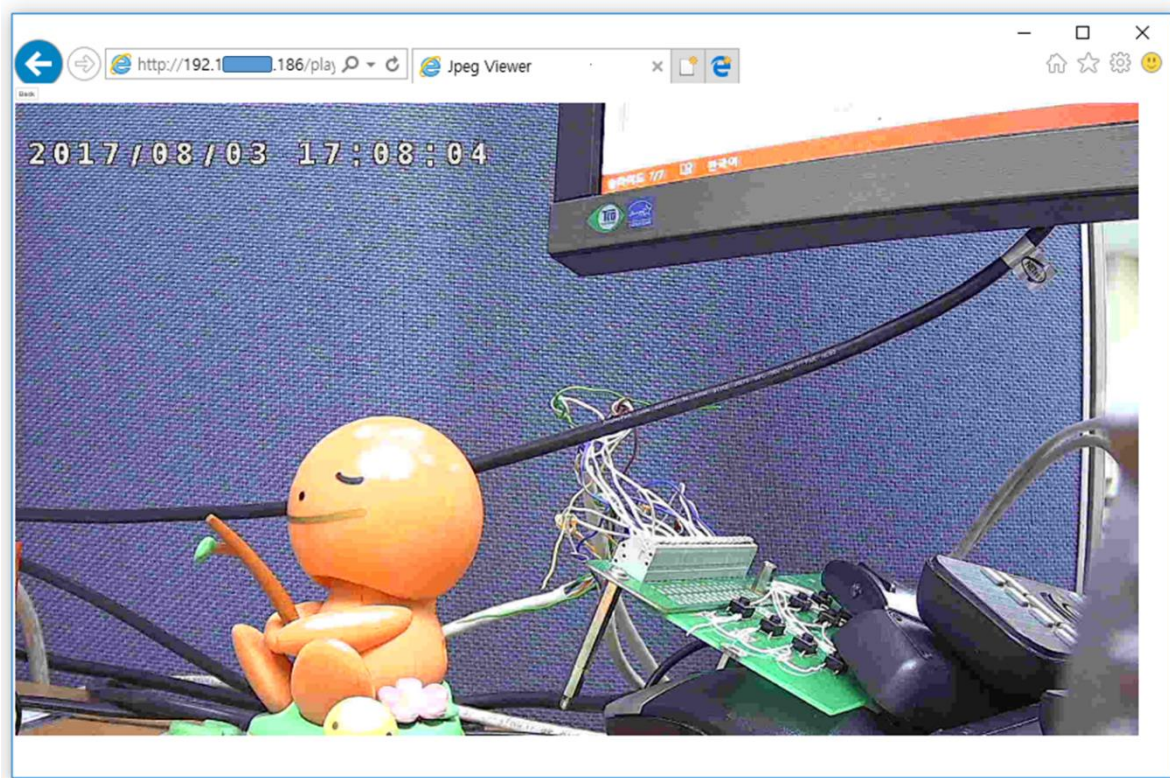


### <주의>

1. IP 카메라의 LIVE 영상을 보기 위해서는 VLC media Player 를 설치 해야 합니다. VLC media Player는 " <http://www.videolan.org> " 에서 다운 받아 설치 바랍니다.  
A. 32비트 VLC media Player 를 권장합니다.
2. Internet Explorer 브라우저에서는 H264 View 및 JPEG View 볼 수 있습니다.
3. 구글 크롬, 파이어폭스 브라우저 에서는 JPEG View 만 볼 수 있습니다.
4. 브라우저는 최신 버전 사용을 권장합니다.

## JPEG View

JPEG View 를 실행하면 IP 카메라의 JPEG 영상을 보실 수 있습니다. JPEG View 는 브라우저와 상관없이 모든 브라우저에서 영상을 볼 수 있습니다.



### <참고>

JPEG 영상은 별도로 설정할 수 없으며, 1920x1080 해상도의 고화질 영상입니다.

JPEG View는 1fps의 영상이 보여지며, 1fps 이상의 영상을 보기 위해서는 H.264 View로 확인 바랍니다.



# Control Center 연결

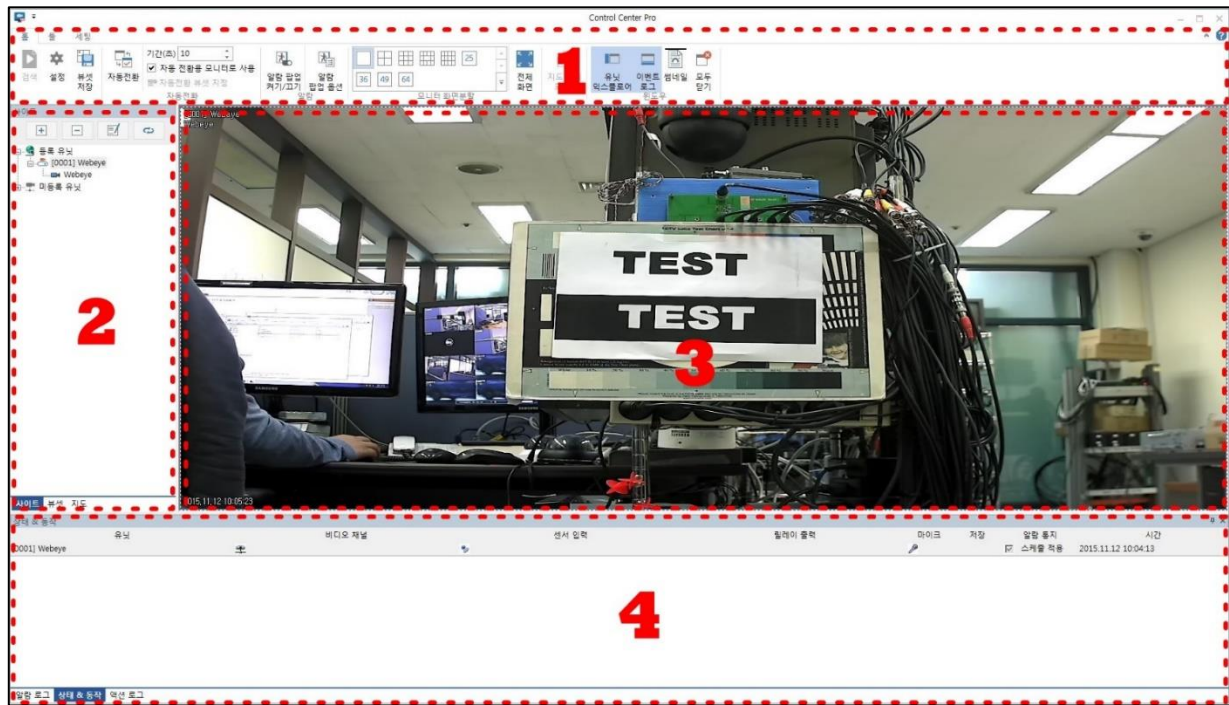
## Control Center 설치

동봉된 CD에서 "Control Center Setup vx.x.x.exe" 설치 프로그램을 실행하여 Control Center 를 설치합니다.

## Control Center 시작

Control Center 설치 후 생성된 "Control Center" 아이콘을 클릭/실행 합니다.

## Control Center 화면구성



구분		기능 설명
1	메뉴/툴바	프로그램에서 사용되는 메뉴와 기능버튼을 표시하며 클릭하여 사용할 수 있습니다.
2	유닛 목록 창	프로그램에 등록된 유닛/뷰셋/지도를 표시하며 목록을 클릭하여 영상을 표시할 수 있습니다.
3	영상 창	라이브 모니터링 영상을 표시합니다.
4	이벤트 정보표시 창	유닛의 상태 및 이벤트 정보와 알람 로그를 표시합니다.

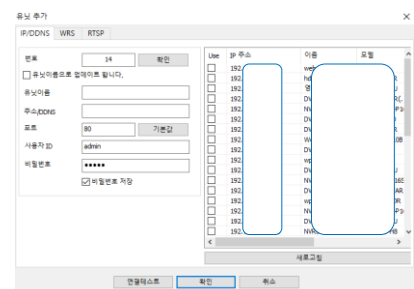
## 유닛 추가

유닛 목록 창의 상단에 "+" 아이콘 또는 등록 유닛 에서 마우스를 놓고 오른쪽 버튼 클릭하여 나타난 메뉴에서 [유닛추가]를 클릭합니다.

유닛 추가 창이 실행되면 "IP/DDNS"을 선택합니다.

주소 입력 창에 직접 주소 및 포트를 입력하거나, 우측에 자동 탐지된 주소를 클릭합니다.

[연결테스트]버튼을 클릭하면 연결 상태가 정상적일 경우 [연결성공] , 비정상적인 연결일 경우 [연결실패] 메시지가 나타납니다.



등록한 유닛이 유닛 목록 창의 "등록 유닛" 목록에 표시됩니다.  
(기본 계정 admin / 12345)

# 부록

## 문제 해결 [FAQ]

문제점 및 증상	해결 방법
카메라가 켜지지 않을 경우	<ul style="list-style-type: none"><li>✓ 카메라의 전원이 정상적으로 연결되어 있는지 확인하세요.</li><li>✓ 입력되어 있는 전원 전압을 확인하세요.</li><li>✓ 위와 같은 확인 절차 후에도 전원이 켜지지 않을 경우에는 파워 서플라이를 점검 또는 교체하세요.</li></ul>
Control Center 영상이 보이지 않을 경우	<ul style="list-style-type: none"><li>✓ 카메라의 전원이 정상적으로 연결되어 있는지 확인해 주세요.</li><li>✓ PC 및 네트워크 카메라의 네트워크 연결 상태를 확인해 주세요.</li><li>✓ CC에서 카메라의 연결 정보에 IP, 아이디, 패스워드가 정확한지 확인해 주세요.</li></ul>
영상이 흐리게 보일 경우	<ul style="list-style-type: none"><li>✓ 카메라의 렌즈에 이물질이 묻어있는지 확인하고, 깨끗한 천이나 브러시로 닦아주세요.</li><li>✓ 렌즈의 포커스가 잘 잡혀있는지 확인하고, 잘 잡혀있지 않으면 포커스를 조정해 주세요.</li><li>✓ 밝은 빛이 카메라에 너무 많이 들어올 경우 카메라의 위치와 각도를 조절해 주세요.</li></ul>
영상의 색이 다르게 보일 경우	<ul style="list-style-type: none"><li>✓ 카메라 설정 시 화이트 밸런스 설정을 확인해 주세요</li></ul>
영상이 깜빡 거릴 경우	<ul style="list-style-type: none"><li>✓ 카메라가 태양이나 형광등을 마주보도록 설치되어 있는 경우 카메라 방향을 조절해 주세요.</li></ul>
ID와 암호를 잃어버려 카메라에 접속할 수 없는 경우	<ul style="list-style-type: none"><li>✓ IPTOOL 을 통해 설정을 초기화 한 뒤 admin 계정으로 접속 가능합니다.</li></ul>
인터넷으로 카메라 설정에 연결이 안 될 경우	<ul style="list-style-type: none"><li>✓ 소프트웨어가 정상적으로 설치되었는지 확인해 주세요. &lt;페이지 9&gt;</li><li>✓ 카메라의 ID와 PASSWORD를 정확히 입력하여 로그인 해주세요. 초기 ID/PASSWORD: admin/12345</li></ul>
카메라의 IP를 모를 경우	<ul style="list-style-type: none"><li>✓ IPTOOL 을 통해 IP를 확인해 주세요</li></ul>

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