# C3 Series Image Capture System

**Securing Communities - Saving Lives.**

## Key Features

- Compact, lightweight ALPR image capture system
- High reliability and read accuracy
- Flexible range of camera modules and Illumination
- Operates under all weather conditions
- High environmental specification
- Easy to install, use and maintain
- Compatible with CCTV equipment

## Read license plates day and night, even in the most demanding conditions

The C3 series Automated License Plate Recognition (ALPR) image capture system can be supplied with a range of different internal camera and infrared (IR) illumination options offering unmatched flexibility - suitable for any ALPR application, such as fixed site, long range or portable.

A principal feature is the use of high-resolution optical zoom cameras – both for ALPR and high-definition overview/contextual imaging. Zoom functionality means the C3 series system can be rapidly optimized to suit differing plate and environmental conditions at ALPR capture points. The C3 series camera can be easily moved from one location to another and the settings simply adjusted – avoiding the need for time-consuming, risky and costly re-lensing. The zoom function and other camera settings can be interrogated, controlled and changed by a bi-directional communication protocol and an intuitive Graphical User Interface (GUI) allowing for easy set-up and maintenance.

Globally, number plates have widely differing characteristics and contrasts. The C3 series camera overcomes this problem by having a choice of IR wavelengths available — 810, 870 and 940nm. Zoom functionality enables the camera's field of view to be optimized to local plate sizes. Additionally, both IR pulse duration and illumination power can be adjusted by the user. In its long range dual illuminator configuration, the camera has a range of up to 150 feet (subject to wavelength).

Obtaining high confidence recognition and accuracy results in bright sunlight, when plate characters are partly shaded, is a significant challenge. At night, the impact of bright headlights should be suppressed to improve the accuracy of recognition. The C3 series camera has a number of features designed to combat these problems, including improved processing gain and narrow band IR filtering.


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# C3 Series Image Capture System Configurations

| | |
|---|---|
| **Camera Models:** | ND -C320D (Dual), ND-C320S (Single), ND -C320LR (Long Range) |
| **Single Configuration:** | Single illuminator • Single monochrome ALPR camera |
| **Dual Configuration:** | Single illuminator • Single monochrome ALPR camera • Single color ALPR camera |
| **Long Range Configuration:** | Two illuminators • Single monochrome ALPR camera |

# Camera Specifications

## Monochrome Camera Model

| | |
|---|---|
| **Lens:** | 18X Zoom f=4.1 mm (wide) to 3.8 mm (tele), F1.4 to F3.0 |
| **Signal System:** | EIA/CCIR |
| **Image Sensor:** | Exview HAD CCD |
| **Angle of View (H):** | 48 degree (wide end) to 2.7 degree (tele end) |
| **S/N Ratio:** | More than 50 dB |
| **Electronic Shutter:** | EIA1/500 to 1/10,000s, 8 steps<br>CCIR 1/600 to 1/10,000s, 8 steps |
| **Gain:** | -3 to 28 dB, 16 dB steps |
| **Video Output:** | VBS: 1.0 Vp-p (Sync. negative) |
| **IR Illuminator:** | 810nm, 870nm, 940nm |

## Color Camera Module

| | |
|---|---|
| **Lens:** | 18X Zoom f=4.1 mm (wide) to 73.8 mm (tele), F1.4 to F3.0 |
| **Signal System:** | NTSC/PAL |
| **Image Sensor:** | Exview HAD CCD |
| **Angle of View (H):** | 48 degree (wide end) to 2.8 degree (tele end) |
| **S/N Ratio:** | More than 50 dB |
| **Electronic Shutter:** | 1/60 to 1/10,000s, 11 steps<br>1/50 to 1/10,000s, 11 steps |
| **Gain:** | Auto / Manual (-3 to 28 dB, 16 dB steps) |
| **Video Output:** | VBS: 1.0 Vp-p (Sync. negative) |
| **Minimum Illumination:** | 0.7lux (F1.4, 1/50 or 1/60, 50IRE) typical |
| **Integrated Light Sensor:** | Measures the visible light level |

## General Information

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|---|---|
| **Communications:** | Bi directional RS 232 communications with PCs. Allows the settings to be downloaded from the camera. Camera settings can be stored off-site and sent to the camera. This eases maintenance and allows a central database to store and retrieve camera settings. |
| **Options:** | Illuminator Wavelength: 810nm, 870nm, 940nm<br>Standard: NTSC, PAL<br>Supply: Universal AC/DC, DC Only |
| **Connections:** | RS232, power and video, all galvanically isolated. |
| **Mounting Bracket:** | Full 3 axis gimballed mount. |
| **Sun Shield:** | Available as an option. The use of the sun shield is recommended in environments where the camera is exposed to prolonged periods of solar heating. |
| **Operating Voltage:** | 9 to 30 V DC - (DC variant only)<br>12V AC or 12-30V DC (Universal variant only) |
| **Power Consumption:** | 8 W average, 50 W peak |
| **Dimensions:** | C3 series:<br>H 90mm X W 180mm X D-195mm<br>C3 series with sun shield:<br>H 110mm X W 210mm X D 240mm<br>Bracket: H 80mm |
| **Weight:** | C3 series: 2.2 KG<br>C3 series with sun shield: 2.4 KG<br>C3 series with bracket: 2.5 KG |
| **Environmental:** | Sealing: IP 68<br>Temperature:<br>Storage - 20° C to + 60° C<br>Operational - 10° C to + 55° C<br>Wind Loading (mounted on C3 series bracket) - 160 Kph / 45m/s |
| **Accreditations and Approvals:** | CE, FCC |

*Due to a policy of continued product development, NDI Recognition Systems reserves the right to alter or amend any published specifications without notice.*

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