

CCD • CMOS Camera BU Series



Thermal Design Manual

Ver.3.0

※This document is the reference data for using it on condition of
“Ambient temperature : below 40°C” currently written on an operation manual
“Operation Ambient condition” .

TOSHIBA TELI CORPORATION

Contents of this document are subject to change for improvement without notice

1. Overview

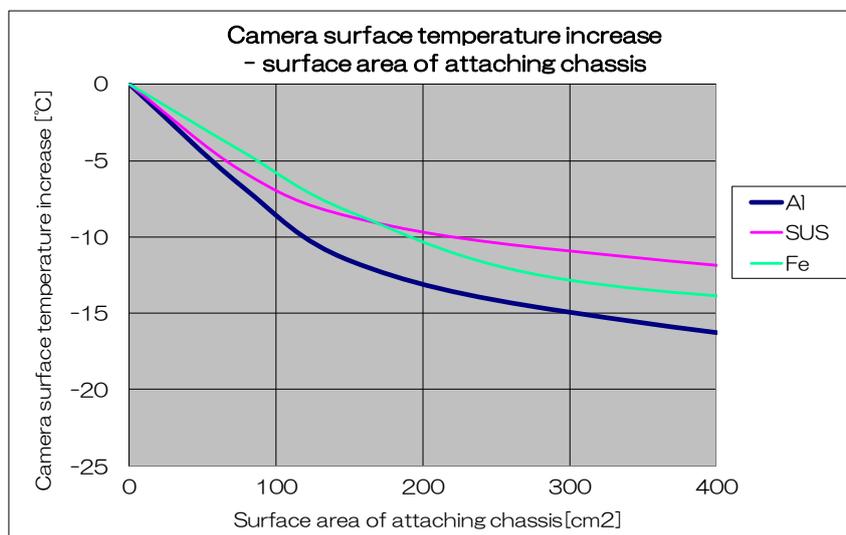
This camera has extremely high frame rate, compact size and light weight.

Even some customers might be worried about heat because the products have compact size and high frame rate. However, by devising general lens mounting and installation conditions to chassis, this camera can be used comfortably in high surrounding temperature.

This document contains supporting data of thermal design with customer's machines or equipment.

2. Relation of cabinet surface temperature against attaching chassis

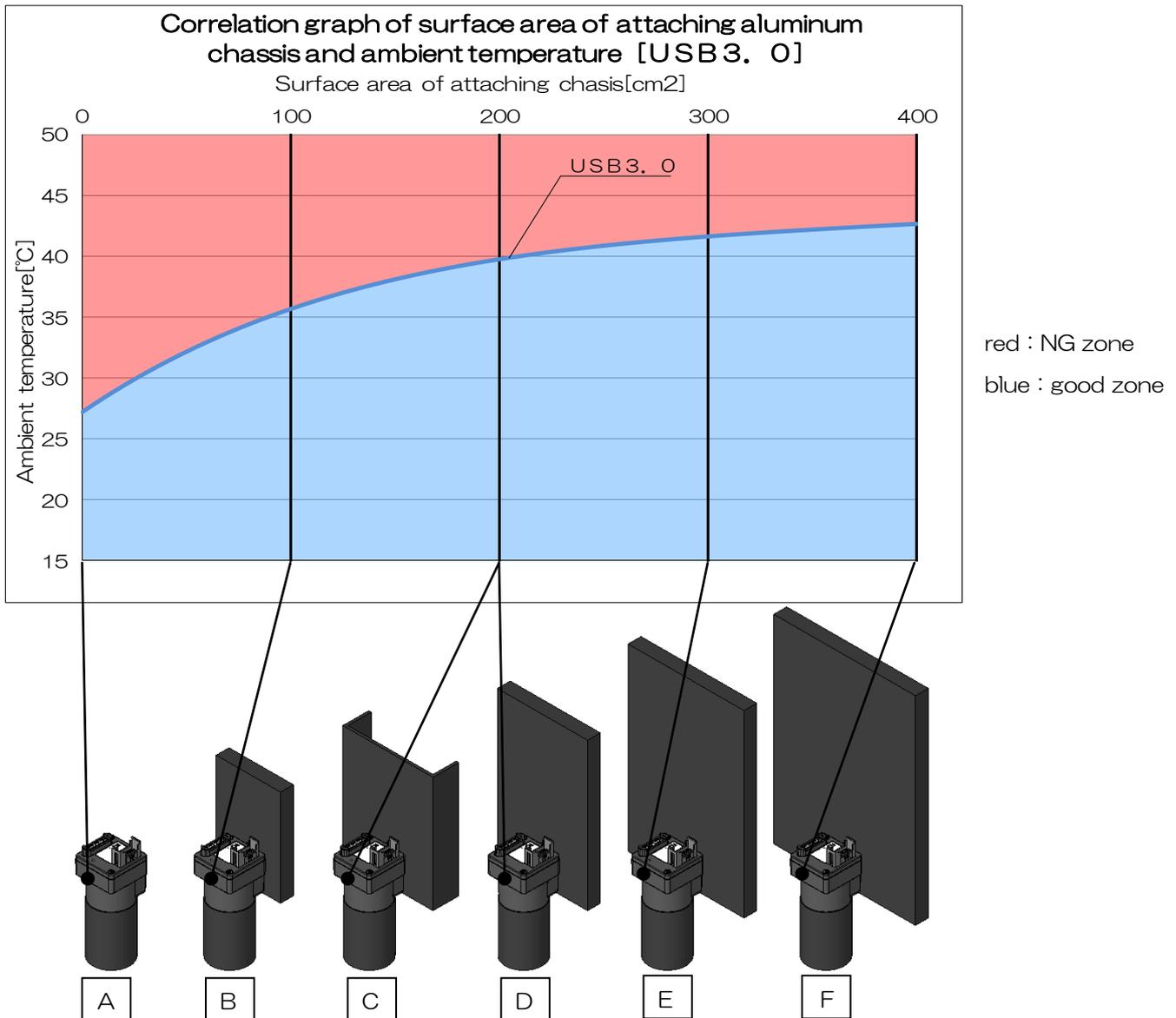
The relation of camera surface temperature increase and surface area of attaching chassis is plotted by thermal simulation with attaching chassis for each material. Below graph shows Al (black color) is the most preferable as material of attaching chassis.



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3. Representative model using aluminum attaching chassis “USB3.0”

The graph below shows a correlation of surface area of attaching aluminum chassis and ambient temperature. By using a certain size of attaching chassis, the camera can be used in ambient temperature of 40°C.



| Setting condition | | |
|-------------------|-------------------------------|---------------------------------|
| | Attaching chassis [mm] | Surface area [cm ²] |
| A | NIL | - |
| B | t10x50x75 | approx.100 |
| C | t2x70x90(Bending height : 20) | approx.200 |
| D | t10x70x115 | approx.200 |
| E | t10x90x140 | approx.300 |
| F | t10x110x155 | approx.400 |

<Seeing the graph>

Ambient temperature should be below 27°C in case of no attaching chassis. The camera can be used in ambient temperature of approximately 40°C by using **E** or equivalent attaching chassis.

Above correlation graph is based on representative value of BU series cameras. Correlation of attaching chassis area and ambient temperature changes depend on model. Please check attaching chassis size with thermal design guide line of “Documents” tub in below link according to ambient temperature.
<http://www.toshiba-teli.co.jp/en/products/industrial/usb/index.htm>