Secret level				
Stage Mark				D
Version	B			

288×4 long wave thermal imaging camera assembly

Technical Specification

(IRC-28G)

288×4 long-wave infrared camera assembly technical specification

1 Scope

This specification specifies the composition, interface, functional characteristics and physical characteristics of the 288×4 long wave thermal imaging camera assembly.

This specification is applicable to the production, testing, acceptance and delivery of 288×4 LWIR components and is attached to the equipment order contract.

2 Normative reference conditions

Technical Conditions for Manufacturing and Acceptance of 288×4 Long Wave Thermal Imaging Camera Components

Outline of Environmental Routine Test for 288×4 Longwave Infrared Camera Components

3 Technical Requirements

3.1 Overview

3.1.1 Components

288×4 long wave infrared camera components are mainly composed of optical system, infrared detector and cooling components, imaging circuit components and mechanical structure, etc. The imaging circuit components include infrared PSU board, front board, digital board and filter board.

3.1.2 Interface

3.1.2.1 Video interface

CCIR/PAL video output

3.1.2.2 Control interface

RS422 serial port

3.1.2.3 Mechanical interface

According to the requirements of the mission statement and system supporting, and to meet the system interface, as shown in Figure 1.

3.1.2.4 External electrical interface and software interface

See Appendix A

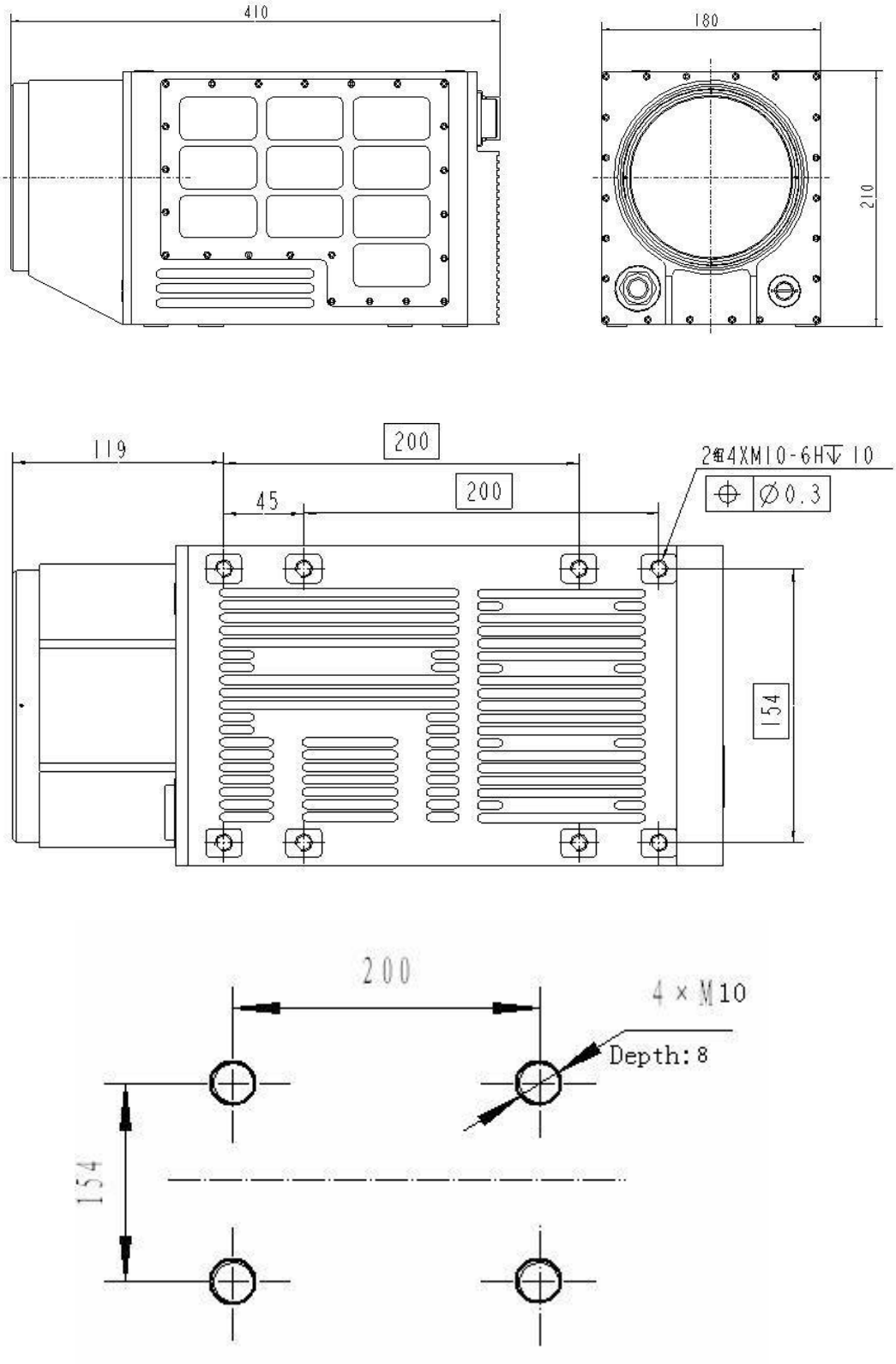

Figure 1 288 x 4 long wave thermal imaging camera components mechanical interface

3.2 Features

3.2.1 Functional characteristics

3.2.1.1 Main functions

a) Non-uniformity correction (NUC)

b) Mirroring

c) Black heat / white heat

d) Optical modulation, focal

e) Auto/manual gain

f) Gaze/panorama switching

g) Electronic zoom

3.2.1.2 Infrared detector

a) Detector model: PLUTON LW

b) Wavelength: 8m～12m μ(nominal value).μ

(7.7±0.3)m～(10.3±0.4)m (required value).μμ

b) Resolution: 288×4.

3.2.1.3 Optical field of view

a) WFOV: 9.00°×6.75° (±5%).

b）NFOV：3.00°×2.25°（±5%）.

3.2.1.4 Start-up time

≤10min (at room temperature)

3.2.1.5 Whole machine NETD

Wide Field of View (WFOV) NETD ≤100mk (at room temperature); Narrow Field of View (NFOV) NETD ≤100mk (at room temperature)

3.2.2 Physical Characteristics

3.2.2.1 External dimensions

410mm (±5mm) × 210mm (±5mm) × 180mm (±5mm) (L × W × H)

3.2.2.2 Weight

≤14Kg

3.2.2.3 Color

Sea gray B05-GSB05-1426-2001

3.2.2.4 Working PSU and power consumption

DC 28V (±2V) work normally, power consumption ≤150W

3.2.4.5 Flushness

Table 1 288×4 long-wave thermal imaging camera components compatibility list

Serial number	Name	Amount
1	Infrared thermal imaging camera	1 set
2	Debugging cable	1 set
3	External connector (including video, control, etc.)	1 set
4	Test report	1 copy

3.2.2 Environmental adaptability

3.2.3.1 Operating temperature

-30℃~+65℃

3.2.3.2 Storage temperature

-40℃～+70℃ (test with system)

3.2.3.3 Vibration

The product can withstand vibration test, the product in the working state for sine sweeping vibration, vibration frequency 10 ~ 50Hz, vibration value 0.25mm (single amplitude), sweep mode logarithmic, sweep rate 1oct/min, cycle 9 times, respectively, along the optical axis direction and perpendicular to the product installation surface direction vibration.

4 Quality assurance provisions

4.1 Responsibility for test acceptance

The contractor is responsible for completing the inspection and test items of the factory inspection, and passing the supervision and acceptance of the client, and delivering the product to the client after passing the acceptance.

4.2 Test items

a) Low-temperature operation

b) High-temperature work

c) Vibration

4.3 Test method

The test is conducted in accordance with the requirements of "288×4 Long-wave Infrared Camera Components Environmental Routine Test Outline".

4.4 Quality conformity check