SUNELL TPC2553CTF SERIES

Bi-spectrum Turret Network Camera

GUIDE SPECIFICATION

Prepared in accordance with CSI MasterFormat® 2016

Division 28 – Electronic Safety and Security

Section 28 23 00 – Video Surveillance

Guide Specification – For Design and Planning Use Only

NOTE TO SPECIFIERS

This Guide Specification incorporates representative technical characteristics of the TPC2553DRT-F models to assist Architects, Engineers, and Consultants during system design and product selection. It is not intended to serve as a contract document or compliance specification.

PART 1 – GENERAL

1.1 SUMMARY

This section provides guidance for specifying Sunell 2553DRT Series thermal & optical bi-spectrum bullet cameras for perimeter protection, intrusion detection, fire monitoring, and temperature measurement applications.

1.2 APPLICATIONS

Typical applications include critical infrastructure protection, perimeter intrusion detection, early fire detection, industrial safety monitoring, and security surveillance in low-light or no-light environments.

PART 2 – PRODUCTS

2.1 EQUIPMENT

A. Manufacturer: Sunell International Co., Ltd.(www.dsibenelux.nl)
B. Model: SN-TPC2553CTF-F
C. Alternates: SN-TPC2553CTF-Fxx (lens dependent)

2.2 PRODUCT SERIES DESCRIPTION

The 2553CTF Series consists of thermal & optical bi-spectrum network bullet cameras utilizing uncooled VOx thermal detector technology combined with high-resolution visible imaging.

2.3 FUNCTIONAL OVERVIEW

2.3.1 Video Processing and Transmission

The camera shall support dual-channel video processing, providing simultaneous thermal and visible-light video streams. Each channel shall support independent configuration of resolution, frame rate, compression, and bit rate. The camera shall support multiple concurrent IP video streams suitable for real-time monitoring, recording, and remote access.

2.3.2 Intelligent Video Analytics

The camera shall support intelligent video analytics for enhanced situational awareness. Analytics functions shall include intrusion detection, smart motion detection, single-line and double-line crossing, loitering detection, wrong-way detection, and region-based enter and leave area detection. The system shall support accurate classification of detected targets as human or vehicle.

2.3.3 Thermal Analytics and Temperature Measurement

The camera shall support temperature measurement using configurable spot, line, and area rules. Temperature measurement accuracy shall be approximately ±2°C / ±2%, depending on operating conditions. The camera shall support temperature threshold alarms, temperature difference alarms, and temperature rise alarms for early warning applications.

2.3.4 Fire, Smoking, and Safety Detection

The camera shall support fire point detection, smoking detection, and abnormal heat event detection using thermal analytics. These functions are intended to provide early warning for fire hazards and safety-related incidents.

2.3.5 Visualization, Storage, and Alarm Handling

The camera shall support multiple thermal color palettes for improved visualization. The camera shall support local edge storage via a built-in microSD card slot. Alarm events may trigger recording, network notifications, audible alerts, visual strobe alerts, and external alarm outputs.

2.4 REPRESENTATIVE TECHNICAL CHARACTERISTICS

2.4.1 CAMERA PERFORMANCE

A.   Thermal

   a)   Thermal detector: Uncooled vanadium oxide (VOx) thermal focal plane array with 12 µm pixel pitch

   b)   Spectral range: 8 µm to 14 µm

   c)   Thermal sensitivity (NETD): ≤ 50 mK

   d)   Resolution: D1, CIF, 256×192 (Original sensor resolution: 256 × 192)

   e)   Max. Framerate: 25fps

   f)   Available fixed thermal lenses: 3.5 mm, 7 mm, and 10 mm

B.   Visible

   a)   Image Sensor: 1/2.8" 5MP CMOS

   b)   Resolution: 2880×1620, 2560×1440, 2304×1296, 1920×1080, 1280×720, D1, VGA

   c)   Max. Framerate: 25fps

   d)   Minimum Illumination: Color: 0.05Lux @(F1.6, AGC ON), B/W: 0.005Lux @(F1.6, AGC ON

   e)   Optional lenses: 4 mm, and 8 mm

2.4.2 Intelligent analytics

A.   Intelligent analytics functions include intrusion detection, smart motion detection, single-line and double-line crossing, loitering, wrong-way detection, enter area, and leave area detection.

B.   Classified object types are Person and Vehicle.

C.   People counting, smoking detection, and fire spot detection functions are supported.

2.4.3 TEMPERATURE MONITORING CHARACTERISTICS

A.   Temperature detect range: -20°C to 150°C (-4°F to 302°F)

B.   Temperature accuracy: ±2°C / ±2%

C.   Temperature detection: 3 temperature measurement rule types, 20 rules in total, 1 full screen, 19 others (spot, areas, line).

D.   Temperature display: Display in the lower left corner, follow the cursor display of the highest temperature, lowest temperature or average temperature.

E.   Hybrid palettes, Image fusion

2.4.4 NETWORK AND SYSTEM INTEGRATION

A.   Network interface: 10/100 Mbps Ethernet

B.   Supported protocols: IPv4/IPv6, HTTP/HTTPS, RTSP, TCP/UDP

C.   Interoperability: ONVIF Profiles S, T, G, and M

D.   Edge storage support via built-in SD card slot

2.4.5 MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

A.   Outdoor-rated metal housing

B.   Ingress protection: IP66

C.   Operating temperature range: –40°C to 60°C (–40°F to 140°F)

D.   Power options: 12 VDC / 24 VDC / PoE (802.3af)

PART 3 – EXECUTION

3.1 INSTALLATION CONSIDERATIONS

Camera placement, mounting height, and lens selection should be evaluated during the design phase to achieve desired detection and coverage performance.

3.2 SYSTEM INTEGRATION

TPC2553DRT Series cameras are intended for integration with IP-based video management systems supporting open interoperability standards.

END OF GUIDE SPECIFICATION