

PANOMERA®

S4-S8

Network Requirements


This document provides additional information for the planning of network environments that allow for a safe and reliable operation of Panomera® multifocal sensor systems.



 Note the white papers **Switch Basics** and **Switch Whitelist**.

Bandwidth

Panomera® multifocal sensor systems consist of multiple sensors and therefore require a higher bandwidth than traditional cameras. The bandwidth required in each case is determined by the bit rate. This in turn results from the desired frame rate, resolution and image quality as well as from image complexity and captured motion.

 See **examples** for estimating the required bandwidth on the following page.

In addition, further demands on the transmission routes and infrastructure arise:

Performance Switches

A switch has to be able to simultaneously manage the full network bandwidth on all connections. The decisive factor for this is the “internal” bandwidth of the switch (also known as wire / line / backplane speed). The “internal” bandwidth has to be 1 Gbit/s (duplex) for each port.


Uplink Switches

Switches are interconnected via uplinks. An uplink should be utilized with max. 50% in regular operation. The remaining bandwidth has to be available for the compensation of network load peaks.

Functions Switches

All switches in a network for Panomera® multifocal sensor systems have to support the following functions:

- total configuration (manageable)
- multicast operation
- IGMP V2 Snooping

 Note the white papers **Switch Basics** and **Switch Whitelist** regarding the network topology and the position of the IGMP querier.

General Requirements

The planning of the network for Panomera® multifocal sensor systems should also include the following requirements:

- **Short transmission paths**
(Recording close to the source in order to avoid the utilization of network components)
- **Dedicated network**
(Prevention of adverse effects by competing applications such as VOIP, video streaming, etc.)
- **Consistent bandwidth**
(Prevention of adverse effects caused by media bridges such as a GBit/s - 100 MBit/s - GBit/s switch)
- **Low latency**
(Avoiding routes through WAN, WLAN, routers or firewalls. For a good representation at the workstation, all streams of a Panomera® multifocal sensor system have to arrive simultaneously.)

PANOMERA®

S4-S8

Network Requirements

Examples for bandwidth estimation

The bandwidth required for a Panomera® multifocal sensor system is determined by the bit rate. This in turn results from the desired frame rate, resolution and image quality as well as from image complexity and captured motion. For the proper operation of a Panomera® multifocal sensor system, a **gigabit connection** is always required.

The following examples are based on experience and are always tuned to a good image quality. They are aimed at different Panomera® S8 systems and can be applied by analogy to models with fewer sensors.



*Note that in some cases individual deviations to the following examples may occur.
In case of doubt, please contact the responsible person at Dallmeier or your sales partner.*

Panomera® S8 Baseline	
Application	Parking area
Complexity and movement	Low
Frame rate	12,5 fps
Unicast stream	6 MBit/s per stream for recording
Multicast stream	6 MBit/s per stream for live viewing
Total bandwidth	96 MBit/s

Panomera® S8 Baseline	
Application	Stadium
Complexity and movement	High
Frame rate	12,5 fps
Unicast-Stream	8 MBit/s per stream for recording
Multicast-Stream	8 MBit/s per stream for live viewing
Total bandwidth	128 MBit/s

Panomera® S8 Nightline	
Application	Airfield
Complexity and movement	Low
Frame rate	12,5 fps
Unicast-Stream	3,5 MBit/s per stream for recording
Multicast-Stream	3,5 MBit/s per stream for live viewing
Total bandwidth	56 MBit/s

Panomera® S8 Nightline	
Application	Busy place or street
Complexity and movement	High
Frame rate	25 fps
Unicast-Stream	6 MBit/s per stream for recording
Multicast-Stream	6 MBit/s per stream for live viewing
Total bandwidth	96 MBit/s

Panomera® S8 Topline	
Application	Airfield
Complexity and movement	Low
Frame rate	12,5 fps
Unicast-Stream	8 MBit/s per stream for recording
Multicast-Stream	8 MBit/s per stream for live viewing
Total bandwidth	128 MBit/s

Panomera® S8 Topline	
Application	Busy place or street
Complexity and movement	High
Frame rate	25 fps
Unicast-Stream	16 MBit/s per stream for recording
Multicast-Stream	16 MBit/s per stream for live viewing
Total bandwidth	256 MBit/s