

CASE STUDY

FREEDOM SURVEILLANCE SYSTEM FOR A BIOMEDICAL MANUFACTURING FACILITY



OVERVIEW

A biomedical manufacturing facility required a robust surveillance solution to improve visibility across sensitive operational areas and strengthen exterior protection. Precision production, strict safety requirements, and high-value materials made it essential to install a system that could monitor employees, safeguard restricted zones, and secure the perimeter against unauthorized access. The Freedom Surveillance System was selected for its reliability, clarity, and flexibility, providing the facility with a cost-effective, enterprise-grade security platform.



CHALLENGE

01

Protecting Critical Production Processes

Biomedical manufacturing demands strict adherence to procedures. Supervisors needed clear, continuous monitoring to ensure workers followed proper safety and operational protocols — all without interfering with production.

02

Securing Exterior Areas & Sensitive Perimeter Points

The facility required high-quality video coverage around the building exterior, including blind spots, delivery areas, employee entrances, and sensitive sections of the property.

03

Flexible Coverage for a High-Security Exterior Zone

One area required periodic re-positioning of viewing angles and zoom levels. The customer wanted PTZ functionality without the cost of a full traditional outdoor PTZ system.

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The Freedom Surveillance System gives us clear, continuous visibility across our most sensitive production and perimeter areas, strengthening safety, compliance, and security while staying within budget.

SOLUTIONS

Freedom Surveillance System Deployment Exterior Protection

Exterior Protection

To achieve full and reliable perimeter coverage :

6MP

Dual-Light Cameras

Installed around the exterior to provide full-color video day and night.

- LED dual-light ensures color clarity even in low-light
- Ideal for identifying vehicles, individuals, and activity after hours

4MP

180° Panoramic Cameras

Used to cover wide exterior angles with minimal blind spots.

- Provides a single, seamless ultra-wide view
- Ideal for corners, loading areas, and larger outdoor sections

8MP

PTZ Turret Camera

Placed at a strategically important corner of the facility to monitor a high-security zone.

- Adjustable zoom and viewing angles
- Allows remote repositioning without the cost or maintenance of a full-size PTZ dome
- Perfect for locations where priorities or risk areas may change over time



Interior Corridor & Access Monitoring

Varifocal Bullet Cameras

Installed in interior corridors, hallways, and controlled pathways.

- Motorized or adjustable zoom allows fine-tuning to narrow, extended spaces
- Perfect for capturing long corridors without distortion
- Provides clear identification of personnel moving through restricted areas





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The Freedom Surveillance System gives us clear, continuous visibility across our most sensitive production lines, corridors, and perimeter areas. It has strengthened worker safety and regulatory compliance while keeping our security investment within budget.

RESULTS

01

Improved Worker and Process Oversight

Supervisors now have clear, detailed views of operational areas, helping ensure procedures are followed correctly and safely.

02

Enhanced Perimeter Security

The combination of dual-light cameras, panoramic views, and an exterior turret PTZ provides excellent visibility across the property, reducing blind spots and strengthening after-hours monitoring.

03

Flexible, Cost-Efficient Monitoring of Sensitive Zones

The 8MP PTZ turret enabled dynamic coverage without the expense of installing a dedicated outdoor PTZ system—meeting the facility's need for adjustable monitoring while staying within budget.

04

Better Incident Review & Operational Accountability

High-resolution video makes it easier to investigate incidents, verify compliance, and document activity for internal audits.

SYSTEM CONFIGURATION SUMMARY

01

EXTERIOR CAMERAS

TI-NC406DL-XDA-28

6MP Dual-Light Turret Camera



- Qty : 5
- Key Features : Color 24/7, 90' IR, built-in microphone
- Application : General perimeter coverage with strong color nighttime visibility

TI-NC414DL-2LBA-4

4MP Dual-Lens 180° Panoramic Camera



- Qty: 3
- Key Features: Dual-lens, seamless 180° panoramic view
- Application: Wide-angle exterior coverage and corner blind-spot elimination

TI-NC818DL-XPZA

8MP Dual-Light PTZ Turret (5× Zoom)



- Qty: 1
- Key Features: Dual-lens, seamless 180° panoramic view
- Application: Wide-angle exterior coverage and corner blind-spot elimination



SYSTEM CONFIGURATION SUMMARY

02 INTERIOR CAMERAS

TI-NC416-VBZA

6MP Varifocal Bullet Camera
(2.8–12mm, 210' IR)



- Qty : 7
- Application : Long, narrow corridor coverage with adjustable field of view

TI-NC416-XDA-28

6MP AI Turret (Human/Vehicle Detection, 90' IR, Mic)



- Qty : 45
- Application : Production areas, hallways, and general interior coverage

03 RECORDING EQUIPMENT



TI-NR864N2

64-Channel Freedom NVR

- Qty : 1
- Specs : RAID, 4K output

TI-NR432N2

32-Channel Freedom NVR

- Qty : 1
- Specs : Dual HDMI/VGA outputs

04 STORAGE DRIVES

12TB WD Purple

Surveillance-Grade HDD



- Qty : 6
- Role : High-capacity storage for extended video retention

05 NETWORK INFRASTRUCTURE



TI-POE24AGF-370

24-Port Gigabit Managed PoE Switch

- Qty : 1
- Power Budget : 370 W

TI-POE24GFE-360

24-Port Unmanaged PoE Switch

- Qty : 3
- Power Budget : 360 W each

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With the Freedom Surveillance System, our control room has a single, unified view of the entire facility. Our team can quickly see what's happening, investigate incidents, and document regulatory compliance—all without disrupting production

06 MOUNTING ACCESSORIES



PT-DSW6-U

Dome / TD Mount

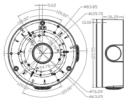
● Qty : 1



PT-JB-03-W

Junction Box for Varifocal Bullet Cameras

● Qty : 7



PT-JB-2LB-W

Junction Box for Dual-Lens Bullet Cameras

● Qty : 3



TDB-HPTXD-W

Junction Box for XD Cameras

● Qty : 50

07 STORAGE DRIVES

Exterior Cameras: 9

Interior Cameras: 52

Specialty Cameras (Panoramic + PTZ): 4

Total Installed Cameras: 61

FREEDOM

SURVEILLANCE SYSTEM BY POWER TECHNOLOGY INC.

— end-to-end visibility
for mission-critical facilities.



CONCLUSION

The Freedom Surveillance System delivered a balanced, high-performance solution tailored to the unique needs of a biomedical manufacturing environment. By combining color-capable dual-light cameras, ultra-wide panoramic imaging, corridor-optimized varifocal bullets, and a flexible PTZ turret for sensitive areas, the facility achieved comprehensive and cost-effective protection both inside and outside the building.

