Smarter Security

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Fastlane® Intelligate 300

Optical Barrier Turnstile

Architectural & Engineering Specification

PART I – GENERAL

1.01 REFERENCES

A. The Power supply unit (PSU) shall be certified under UL 60950-1, second edition and CSA C22.2 No. 60950-1-07, second edition.

B. The Optical Barrier Turnstile shall be CE marked in accordance with following the European Directives.

1. Electromagnetic Compatibility EU Directive 2014/30/EU
2. Low Voltage EU Directive 2014/35/EU
3. Machinery Directives EU Directive 2006/42/EC

1.02 QUALITY ASSURANCE

A. Manufacturer must operate a Quality Management System that meets the ISO 9001:2015. International Standard for design, development, and manufacturing activities, including associated software products.

B. Manufacturer must operate an Environmental Management Systems that meets ISO14001:2015 International Standard.

C. Manufacturer shall be a global supplier specializing in the design and manufacture of automatic security turnstiles with a minimum of twenty (20) years' experience.

D. Installer shall have a minimum of three (3) years' experience installing Fastlane turnstiles or similar equipment or shall supply a manufacturer-trained technician for Commissioning Services following installation of the Fastlane Intelligate 300 Optical Turnstile with Glass Panels.

1.03 SUBMITTALS

A. Submit manufacturer's product literature including datasheet and drawing pack for specific model, including options.

B. Provide high resolution photo.

C. Provide, upon request, Intelligate 300 Installation & Maintenance manual.

D. Provide, upon request, site specific drawings detailing product placement, arrangement and wiring.

1.04 DELIVERY, STORAGE AND HANDLING

A. Deliver equipment and materials to specified location in manufacturer's packaging undamaged, complete with installation instructions.

B. Store off ground, under cover, protected from weather and construction activities. For periods of extended storage the equipment will be kept in an environment that regulates temperature and humidity.

C. Use forklift, pallet jack, or specified number of personnel for moving equipment, observing manufacturer's safety instructions at all times.

1.05 PROJECT/SITE CONDITIONS

A. Install Fastlane Intelligate 300 Optical Turnstiles with Glass Panels on level, finished floor, and in strict accordance with manufacturer's installation chapter in the provided Installation & Maintenance manual.

B. Install Fastlane Intelligate 300 Optical Turnstile on manufacturer-supplied Floor Protector System to rest on a level finished floor.

1.06 WARRANTY

A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of optical turnstile system that fails in materials or workmanship within specified warranty period. Failures include, but are not limited to, the following: faulty circuit boards (PCB), infrared beams, and mechanical components. Warranty Period: 1 year from date of shipment or 2 years from installation with on-line product registration using manufacturer's Fastlane *Connect* remote services.

PART II - PRODUCTS

2.01 MANUFACTURER

A. Integrated Design Ltd
Feltham Point
Air Park Way
Feltham
Middlesex
TW13 7EQ
United Kingdom
Tel (0) 208 890 5550
Fax (0) 208 890 2444

2.02 PRODUCT

Fastlane Intelligate 300 with Glass Panels, NO SUBSTITUTIONS.

2.03 CONSTRUCTION

A. Exterior:

1. End Panels: stainless steel 304 grade 240 grit (Satin No. 4) horizontal grain (standard).

2. Side Panels: stainless steel 304 grade 240 grit (Satin No. 4) horizontal grain (standard) with polycarbonate filter windows for the infrared beams.

3. Lower Panels: stainless steel 304 grade 240 grit (Satin No. 4) horizontal grain with Black Quartz Corian®

B. Interior Chassis:

1. Chassis framework must be black satin, powder-coated mild steel

2. 4 No. 10mm mounting studs are required to secure the baseplate to the floor substrate.

C. Decorative Tops:

1. Black Quartz Corian®

D. Glass Panels:

1. Four barrier height options are available, 1800mm, 1500mm, 1200mm and 965mm. (The barrier height is limited to 1200mm for lane widths 1400mm)

2. 10mm Thick toughened safety glass EN12150 for 1200mm and 965mm height barriers. 11.5mm Toughened/Laminated for 1500mm and 1800mm options to EN12150/EN14449 (Glass produced with a 1.5mm PVB Interlayer laminated between two 5mm panels of safety glass).

E. Card reader mounted on separate stainless steel post - optional

F. Turnstile Status Display

1. Located on the Right Hand Side of each lane viewed from the entrance/exit

2. The Indicator is provided by light emitting diodes (LED) diffused through frosted clear acrylic inset into the top of the End Panel, approximate dimension is 80 x 10mm.

G. Enclosure:

1. Dimensions: Ø240mm, Height 965mm

2. Pedestal weight

a. Receive Pedestal 24kg

b. 1200mm lane, 1800mm high glass barrier 18Kg.

3. Unit enclosure shall provide an Ingress Protection rating of IP20.

2.04 EQUIPMENT

A. General: Two pedestals utilizing pulsed infrared beams to create an invisible electronic field between pedestals, monitoring the passage of individuals entering and leaving a facility with a dual swinging glass panel to physically deter unauthorized individuals from passing through the lane. A holding force is applied to the glass panels when closed to deter an unauthorized user from passing through. Standard Lane widths of 1000mm, 1200mm and 1400mm are available, custom lane widths may be accommodated subject to the application. All feature settings and calibrations are built into the unit, managed by the relevant processor/microcontrollers.

B. Types of units: The system shall consist of a Transmit Gate Pedestal (TXG) and a Receive Gate Pedestal (RXG) to provide a single lane.

C. Capabilities:

1. Detect and deter unauthorized persons from entering into the protected area.

2. Detect unauthorized persons more than 10 mm at waist height behind an authorized person that is, “tailgating” or “piggybacking.”

3. Detect direction of movement, that is, entry and exit.

4. Verify entry into the protected area following authorization.

5. Provide alarm outputs on detection of a violation by means of local sounders and indicators

6. Operate in bi-directional, single direction and no entry modes.

7. Minimize false alarms through the use of infrared beams connected to intelligent detection algorithms.

8. Process a relatively high number of people without security guard intervention, unless access is rejected by the system or a system anomaly occurs.

9. The system can process, up to one person per second, subject to the access control system and lane width. Buffering multiple inputs from an access control system to maximize throughput.

10. Easy to use.

11. Allow free movement for wheelchair users with wide lane width options compliant with Equality Act 2010.

12. Allow safe emergency egress through a fire alarm input to open the glass panels.

13. Entry and exit with an authorized card, biometric, or other credential.

14. Entry and exit that is unauthorized, causing an alarm.

15. The Authorized card is being read by the system, but no entry or exit is taking place using an optional alarm configuration.

16. Card presented for entry but exit occurring causing an alarm.

17. Card presented for exit but entry occurring causing an alarm.

18. Obstruction of an infrared beam path causing an alarm.

19. Create an alarm for a person pushing/forcing the glass panels, that is, forced entry.

20. Barrier Breakaway force greater than or equal to 60N measured at 285mm from shaft axis, the locking option increases the force to greater than 300N.

D. Fastlane Optical System

~~1.~~ Intelligently monitored infrared beam matrix using 4 beams.

2. Access request transaction speed: Time delay of no greater than 100ms in signaling passage through the beams and readying the turnstile for the next user except when a greater delay is caused by the attached access control system.

    a. The optical system must be capable of throughput of up to 1 person per second.

    b. The system throughput including barrier operation and access control system is better than 30 persons per minute.

3. Visitor Management System: Allows an unlimited number of people to pass through the lane. Once the visitors have entered and the system no longer sees anyone entering or exiting for 3 seconds, the glass panels return to the closed position.

E. Operating Modes

1. Optical turnstile mode – where by the glass panel barriers are positioned to the exit end of the lane and the system operates as an optical-only turnstile.

2. Normally closed mode – where the barriers are closed (centered within the lane) and open away from the requested and authorized direction of travel.

3. Visitor entry mode – where the turnstile opens upon visitor request and allows free travel through the turnstile without issuing an alarm. Once the visitors have entered and the system no longer sees anyone entering or exiting for 3 seconds, the beam operations return to their original security setting.

4. Emergency – unit must have a dedicated input for integration with a fire control panel to receive fire alarm signals. When the emergency signal is activated, glass barriers will open in the exit direction and remain open to allow unobstructed passage. Once the emergency signal is deactivated, the unit must return to the operating mode immediately preceding the alarm.

5. Power Fail – The barriers will be unlocked and free to be moved out of the way.

F. Inputs:

1. Entry Request: Normally Open volt-free contract. Closing on request for <1 second

2. Exit Request: Normally Open volt-free contract. Closing on request for <1 second

3. Entry Visitor Request: Normally Open momentary closing switch contacts. Volt-free.

4. Exit Visitor Request: Normally Open momentary closing switch contacts. Volt-free.

5. Ethernet port

6. Fire Panel Signal: Opto-isolated input 12 to 24Vdc, 10mA nominal

G. Outputs:

1. Voltage-free relay contacts rated 24Vdc @ 500mA for the following functions for alarm indicators, and to provide turnstile and entry and exit door emulation.

2. Output to Access control System

a. Access monitoring (used as confirmation of access after authorization)

i. Entry: Normally closed (opening for 1s)

ii. Exit: Normally closed (opening for 1s)

b. Alarm 1: Normally closed (opening for a minimum of 1s) – Alarm Output.

c. Alarm 2: Normally closed (opening for 1s) – Barrier Tamper.

4. Audible Alarms:

a. Local alarm sounder.

b. Relay Contact: utilized to trigger external alarm systems.

5. Status Display: Provide for each lane a visual indication of the status of the lane.

b. Standby – White

c. Please Proceed – Green

d. Red – Lane closed

e. Flashing Red - Alarm.

f. Flashing Green – Visitor Access Authorization

H. Power Requirements:

1. Pedestal: Low voltage 24Vdc supply current 1.25A nominal per motor unit

a. Hazardous voltage must not be present at pedestal to ensure user safety.

2. Power Supply Unit:

a. PSU to be remotely installed.

b. PSU Wall Mounted Metal Enclosure, approximately 13 inches (330mm) long by 8 inches (200mm) wide by 5 ½ inches (136mm) tall.

c. PSU input voltage 100Vac to 240Vac at 60/50Hz, connection by 5A fused spur.

I. Wiring Requirements:

1. Pedestal Wiring: Each Transmit and Receive Pedestals (pedestals with a single motor drive units) requires an independent 24Vdc supply using a minimum conductor cross sectional area of 16 AWG (1.5mm^2) e.g. Belden 8620 or similar.

2. Fastlane System Interconnect: A CAT5 cable (provided) between the Transmit and Receive to facilitate PCB 12Vdc power, synchronization of infrared beams, and motor driver communication.

3. Earth Cables: earth connection from each pedestal to ground, using a green/yellow sleeved cable with a minimum conductor cross sectional area of 18 AWG (1mm^2).

4. Card Readers: as required by access control system manufacturer (typically mounted on separate stainless steel post on the right hand side of the lane entrance).

5. Access Control Lane Integration: as required by access control system manufacturer. (typically, 10-conductor cable with a minimum conductor cross sectional area of 0.35mm^2 (22 AWG))

6. Emergency Input: FP200 or similar from the Fire Panel Normally Closed relay contacts (or 24V signal) to each Interlane and Receive Pedestal.

7. Ethernet Port: An Ethernet cable is required between each Fastlane processor board and a remote location for a hub. The hub may either be connected to a local area network (LAN) for Fastlane Connect Apps (and or a Web Browser). A LAN with Internet connection is preferred, or a Fastlane Touchscreen for remote configuration and control.

   Optional – Wired Remote Control: 12-conductor cable with a minimum conductor cross sectional area of 22 AWG (0.35mm^2). Typically to reception desk or security room.

2.05 FACTORY TESTING

A. Fastlane Intelligate 300 Optical Turnstile with Glass Panels shall be fully assembled and staged as a system at the factory to accommodate soak testing for a period of 48 hours at a minimum to ensure proper operation and electrical connectivity. System shall be inspected for mechanical, electrical and aesthetic condition prior to packaging and shipment.

2.06 SECURITY EQUIPMENT

A. Card Readers: System compatible with major access control technologies for owner-provided card readers of suitable dimensions to be mounted on a separate stainless steel post. Must support integration of multiple card readers at each mounting location by manufacturer.

B. Manufacturer-supplied Accessories

1. Remote Console: Optional

a. Provide Visitor Buttons allowing an unlimited number of visitors to pass through the lane in the entry or exit direction

b. Provide Alarm Indication

c. Key switch to disable visitor entry/exit or retract the barriers.

2. Radio Remote Control

a. Entry and Exit momentary push buttons using a radio fob

3. Ethernet:

Each lane has web pages that may be accessed using a computer/web browser when the lane is connected to a LAN. (A Fastlane finder application may be downloaded from www.fastlane-turnstiles.com to gain easy access to the lanes connected to the LAN)

The Fastlane Processor may be set to operate using DHCP or static IP addresses as required.

The web pages may be used for remote control, diagnostics or lane configuration.

The lanes may be operated/controlled from a PC using Windows Applications that may be downloaded from www.fastlane-turnstiles.com, subject to LAN configuration/specification.

An optional Multilane Touchscreen Console connected to a LAN (or on a hub directly to the Fastlane Turnstiles) may be used for Visitor Entry/Exit, Alarm Indication, Population counting and lane configuration.

4. Floor Protectors: Optional. Modular system designed to support turnstile pedestals without need for drilling mounting bolts into floor or running a conduit under floor between pedestals for cables.

5. Fastlane Infill System: Optional. A series of decorative glass modular panels that guide users in a desired direction, while complimenting turnstile design.

2.07 ENVIRONMENTAL

A Product use:

1. Energy consumption per lane: 421kW hours per annum.
2. Maintenance: Annual Interval 12 months interval minimum.
3. Indoor use only.

2.08 SUSTAINABILITY

A. The product is recyclable at end of life. The following materials are to be distributed to appropriate recycling facilities resulting in a very low residual waste of non-recyclable material.

1. Stainless Steel (sheet material 1mm to 1.5mm thickness)
2. Mild Steel (sheet material 1.2 to 3mm thickness)
3. Plastics
4. Glass
5. Printed circuit boards
6. Special components e.g. gearboxes and motors, friction brakes, power supply modules

B. The product is supplied on reusable plastic pallets with recyclable carton packaging comprising of the following materials.

1. Corrugated fiberboard
2. Foam
3. Polyethylene

PART III – EXECUTION

3.01 SITE EXAMINATION

A. Inspection: Installer / Integrator shall examine the installation and advise the contractor of any site conditions unacceptable for proper installation of product.

1. Finished floor substrate must be dead level within the footprint of the turnstile.

2. Main supply service for power supply and low voltage power out & control wiring must be installed.

B. Installation: Turnstiles shall be installed in accordance with manufacturer's Fastlane Installation & Maintenance manual.

C. Setup & Adjustment: Installer / Integrator shall perform initial equipment electronic adjustments to ensure proper performance after installation.

D. Instruction: Installer / Integrator with a minimum of 3 years experience installing Fastlane optical turnstiles shall furnish operator training for end user.

E. Cleaning: Clean metal, acrylic and glass surfaces carefully after installation to remove excess caulk, dirt, and labels.

F. Maintenance: Maintain the equipment according to the manufacturer's instructions.

[Smarter Security reserves the right to change this specification at any time without notice.]

END OF SECTION

Version History

Issue	Date	Change	ref
A0	28/07/2021	First release	-