Smarter Security

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Architectural & Engineering Specification

Fastlane® *Glassgate 155* Optical Barrier Turnstile

PART I – GENERAL

1.01 REFERENCES

A. The Power supply unit (PSU) shall be certified under CE, UL 60950-1, second edition and CSA C22.2 No. 60950-1-07, second edition, to provide 24Vdc “class 2” supplies as part of a Fastlane Turnstile system.

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

1. Electromagnetic Compatibility EU Directive 2004/108/EC
2. Low Voltage EU Directive 2006/95/EC
3. Machinery Directives EU Directive 2006/42/EC

1.02 QUALITY ASSURANCE

A. Manufacturer must operate a Quality Management System that meets the ISO 9001:2008. International Standard for design, development, and manufacturing activities, including associated software products.

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

C. Installer shall have a minimum of three (3) years’ experience installing Fastlane turnstiles or similar equipment or shall supply a manufacturer-trained technician for Site Certification & Training following installation of the Fastlane Glassgate 155 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, Glassgate 155 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 Glassgate 155 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 Glassgate 155 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

A. Fastlane Glassgate 155 with Glass Panels, NO SUBSTITUTIONS. Include the following options: TCP/IP connections, Fastlane Desktop Remote Control Unit, Fastlane Touchscreen Remote, or Fastlane Connect.

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

B. Interior Chassis:

1. Chassis framework consists of: black satin powder-coated mild steel and stainless steel 304 grade 240 grit (Satin No. 4) horizontal grain (standard).

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

C. Decorative Tops:

1. Stainless steel 304 grade 240 grit (Satin No. 4) horizontal grain with Black Quartz Corian® for reader mounting locations.

2. Optional – 10mm Black Quartz Corian®

3. Optional – Custom materials e.g. 20-25mm thick Stone, 10mm Glass with underside finish.

D. Turnstile Status Display

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

2. The Indicator is provided by LEDs diffused through frosted clear acrylic inset into the top of the end panel, approximate dimensions 110 x 10mm for Square End Panel and 80 x 10mm for the Round End Panel.

E. Glass Panels:

1. 10mm Toughened Safety Glass (Heat Soaked) to EN 14179 / ANSI 97.1

2. Barrier height of 845mm.

F. Enclosure:

1. Dimensions

a. Round end panel model Length 1394mm, Width 188mm, Height 965mm

b. Square end panel model Length 1148mm, Width 168mm, Height 965mm

2. Pedestal weight

a. RX/TX Pedestal 69Kg

b. Interlane Pedestal 77Kg

c. Standard Glass 5.0kg each

d. DDA Glass 6.5kg each

e. 1100 Glass 8.0kg each

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

2.04 EQUIPMENT

A. General: Two or more adjacent pedestals utilising pulsed infrared beams to create an invisible electronic field between pedestals, monitoring the passage of individuals entering and leaving a facility, discriminating between people and nuisances (such as common briefcases, umbrellas, and rolling carts); with dual swinging glass panels to physically deter unauthorised individuals from passing through the lane. A breaking force is applied to the glass panels when closed to deter an unauthorised user from pushing through. Standard Lane widths of 660mm, DDA lane of 914mm and wider lane of 1100mm are available, custom lane widths may be accommodated subject to the application. All calibrations, feature set selections and diagnostics are built in to the unit managed on board by the relevant processor cards. Must not require a Windows based PC to operate.

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, and Interlane Pedestals (INT) to form additional lanes between the RXG and TXG pedestals.

C. Capabilities:

1. Detect and deter unauthorised persons from entering into the protected area.
2. Detect unauthorised persons more than 5 mm at waist height, behind an authorised person, that is “tailgating” or “piggybacking.”
3. Detect direction of movement, that is, entry and exit.
4. Verify entry into the protected area following authorisation.
5. Provide alarm outputs on detection of a violation by means of:
    a. Local sounders and indicators
    b. Remote sounder output
6. Operate in bi-directional, single direction, no entry or free access modes.
7. Minimize false alarms through the use of infrared beams connected to intelligent detection algorithms.
8. Process a high number of people without security guard intervention, unless access is rejected by the system or a system anomaly occurs.
9. Ensure a fast throughput, up to one person per second, subject to the access control system.
10. Buffering multiple inputs from an access control system to maximize throughput.
11. Easy to use.
12. Allow free movement for wheelchair users with ADA width lanes.
13. Allow safe emergency egress through a fire alarm input to open the glass panels.
14. Entry and exit with an authorised card, biometric, or other credential.
15. Entry and exit that is unauthorised causing an alarm.
16. Authorised card being read by the system but no entry or exit taking place using an optional alarm configuration.
17. Card presented for entry but exit occurring causing an alarm.
18. Card presented for exit but entry occurring causing an alarm.
19. Obstruction of an infrared beam path causing an alarm.
20. Create an alarm for a person pushing/forcing the glass panels, that is, forced entry.
21. Barrier Breakaway force greater than or equal to 60N.
22. Optional Barrier locking mechanism in place of friction brake.

D. Fastlane Optical System

1. Intelligently monitored infrared beam matrix: Up to 16 beam paths per lane.
    a. IR Beams with distributed processing for maximum signal analysis. Every infrared beam path have a dedicated microprocessor coupled to a custom-designed system controller. These technologies work together to create an “entity management” system that ‘thinks' in real time to accurately position the size, shape, and speed of individual entities in the lane.

b. Superfluous user behavior tolerated by the software without generating an alarm condition due to:

i. Partial passage through the beams and moving back out again.

ii. Hesitation in the beam field for less than a pre-selected number of seconds.

iii. Presenting a card for authorisation while within the beam-field, but before completing passage through it.

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 40 persons per minute.

3. Glass Panel Control Beams: Utilise a matrix of up to 16 infrared beam paths as glass barrier control to reduce the velocity or stop the glass barrier movement in the event that a user is in the path of an operating barrier.

4. 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 by the barriers are closed (centered within the lane) and open away from requested and authorised 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 – unit must have glass panel barriers that open automatically with internal auxiliary power option in the event of power failure. Without this option, barriers may be easily pushed open in either direction. Once power is restored, unit must return to the operating mode immediately preceding the event.

F. Inputs:

1. Entry Request: Normally Open dry contract. Closing on request for <1 second
2. Exit Request: Normally Open dry contract. Closing on request for <1 second
3. Entry Visitor Request: Normally Open momentary closing switch contacts
4. Exit Visitor Request: Normally Open momentary closing switch contacts
5. Ethernet port

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 authorisation)
        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)
    c. Alarm 2: Normally closed (opening for 1s)
3. Two-Stage Audio/Visual Alarm System
    a. First stage notifies user and guard that someone has entered the lane without authorisation.
        i. Allows user to back up and attempt authorisation, before going into a full alarm.
        ii. Guard becomes aware that a lane violation may occur.
    b. Second stage notifies user and guard that someone has passed through the lane without authorisation.
        i. Notifies the user that they have passed through the lane without authorisation.
        ii. Guard becomes aware that a lane violation has occurred and to take appropriate action.

4. Audible Alarms: Provide for each lane triggered in an alarm condition.

    a. Local alarm sounders.

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

    c. Secondary sounder that will be triggered in the event of “forced entry,” that is, an individual tries to push through the glass panels after an alarm event.

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

    a. Standby – White

    b. Please Proceed – Green

    c. Red – Lane closed

    d. Flashing Red - Alarm

H. Power Requirements:

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

    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 330mm long by 200mm wide by 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. Interlane Pedestals (pedestals with dual motor drive units) require two independent 24Vdc supplies.

2. Fastlane System Interconnect: A CAT5 cable (provided) between the Transmit and Receive or Interlane pedestals for each lane to facilitate 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 to pedestal 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. Optional - IP Connect Multilane or Touchscreen: a twisted pair plus screen e.g. Belden 8302, between Receive and Interlane pedestals (for up to 8 lanes) and either an IP Connect Multi-Lane controller or Touchscreen for RS485 communications with the lanes.

8. Optional - Remote Control: 8-conductor cable with a minimum conductor cross sectional area of 22 gage (0.35mm^2). Typically to reception desk or security room.

9. TCP/IP cables: An Ethernet cable is required between each Fastlane processor board and a remote location for a hub. The hub may either be connected to the Internet via a router or mobile network connection for remote support.

2.05 FACTORY TESTING

A. Fastlane Glassgate 155 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 onto pedestals. Must support integration of multiple card readers at each mounting location by manufacturer.

   1. Card Reader Mounting at pedestal ends:

      a. Under, or surface-mounted on Corian decorative top part

      b. Option at pedestal ends behind acrylic window or surface-mounted.

B. Manufacturer-supplied Accessories

   1. Touchscreen Remote Control: Optional

      a. Operational Mode Control through Touchscreen control.

         i. Optical turnstile mode.

         ii. Normal mode.

         iii. Visitor entry

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

i. 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.

c. Provide indication designed to illuminate when an alarm is activated to provide a visual indication of the lane alarm status.

d. Provide real time population count.

2. 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

3. IP Connect:

The turnstiles will provide individual TCP/IP addresses when connected to a computer network to enable remote control of function and operation, along with remote monitoring facilities.

4. IP Connect Multi Lane: Optional

A Multi-lane controller is available to remotely control and monitor up to 8 lanes over TCP/IP networks.

5. 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.

6. 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: 328kW hours per annum

2. Maintenance: Annual Interval 12 month 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 fibre board
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, or provide for Integrated Design Limited Site Certification & Training services during installation.

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.

[Integrated Design Limited reserves the right to change this specification without notice.]

END OF SECTION

Version History

Issue	Date	Change	ref
A0	07/07/17	First release	-