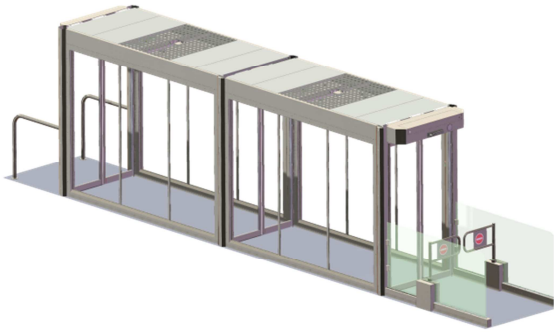
PRODUCT DATA SHEET

record-usa **FlipFlow** airport exit lane breach control

System:

The record FlipFlow family provides the following functionality:

- Automatic door operation.
- Door safety and security monitoring with a dedicated sensor set.
- Use of infrared video sensors to monitor passenger flow and deter breach situations by promptly closing of doors upon detection of wrong-way movement.
- Use of light curtains to detect objects left behind within the tunnels.
- Dual alarm system indicates improper use. Visual alarm indicated via flashing strobe light lamp, as well as traffic signals. Available alarms provide instructions via voice modules.
- Remote monitoring



Modes of operation available on all FlipFlow models:

Selectable by key switch

OFF: All doors are closed.

OPEN: All doors are open with breach control active allowing exit-only use for passengers. Breach control can be disabled to allow bidirectional use for airport personnel.

FLOW: Breach control active. Doors open when passengers approach entrance door. After the door closes the secure areas between doors are scanned for left behind objects. Passenger throughput up to 2000 persons per hour, per lane.

INTERLOCK: Entry door opens only when the previous passenger has cleared the next door and it has closed. Passengers enter the tunnel, the next door will only open when the previous door has closed. This mode provides the highest security level, however, passenger throughput is reduced to 500 persons per hour, per lane.

AUTOMATIC: System switches automatically between **FLOW** and **INTERLOCK** modes depending on the volume of traffic.

EMERGENCY OPENING/CLOSING: Doors open or close by remote signal provided from the airport, backup battery guarantees extended operation in case of power failure.
CLEANING MODE: Exit doors open with a remote signal provided from the airport, alarm triggers after timeout.

Breach Response
Detection of a person going in the opposite direction through an exit door will shut the entry doors and trigger an alarm. The detection is based on several infrared sensitive video cameras with image analysis installed in the ceiling between the doors. The exit door has an additional radar, installed on the exit side, which acts as a pre-alarm for passengers approaching the door from the wrong way. The closing force of the door operator is adjustable between 5 and 22 lbf. The airport may choose to disable the safety sensor in the event of a breach which allows the door to close even when a person is still in the area of the door wings. This results in higher security but lower safety for the passengers.

Object Detection
A set of light curtains installed at the floor level allows for detection of objects with a minimum size of 2" x 2" x 2". An optional set of light curtains allows detection of objects of the same size on the ceiling and with a minimum size of 2.4" x 2.4" x 2.4" placed on the walls.

Signaling
Traffic signals installed in the door pillars, as well as the entry and exit headers, inform the passengers about the status of the lane. A strobe light, located on the exit header, is triggered by a breach attempt.

Voice Modules
Voice modules located at each door set will inform the passengers of improper use with programmable, automated messages.

Door Safety
Safety beams, located in the door opening, protect passengers from impact of the door during closing. Infrared sensors installed in the ceiling above the door wings protect the passengers from impact of the door during opening.

Door Activation
Radar-based door activation sensors trigger the door opening in order to get the highest possible passenger throughput.

Illumination
Each tunnel will be illuminated with six halogen spot lights.

Relay Contacts For Remote Status Monitoring
The following contact states are available for remote monitoring: *system in operation, system in cleaning mode, entrance door closed, flow disturbance, wrong way, intrusion alarm, service panel open.*

LAN Connection
The FlipFlow is provided with an Ethernet port to integrate into the airport computer network for status monitoring. An optional webserver offers status information and can be accessed with any browser through the airport intranet in order to provide real-time information to security personnel.

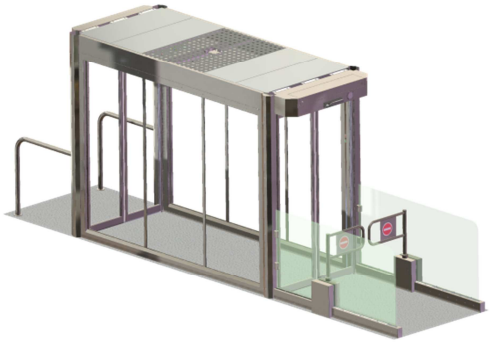
Software Update *(for record service employees)*
Software updates can be uploaded to the system via USB port using a PC *(with Windows XP, 7 or 8)*

Service Display *(for record trained airport service personnel)*
A service display is provided to fine-tune operation parameters based on the needs of the airport.

Different Flip Flow models

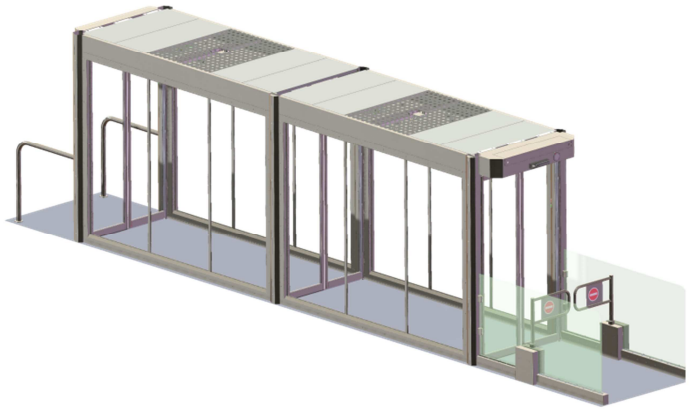
FlipFlow Twin is the base model.

FlipFlow Twin Extended with swing gates at the exit side for increased security *(shown with optional side rails on the entry side)*



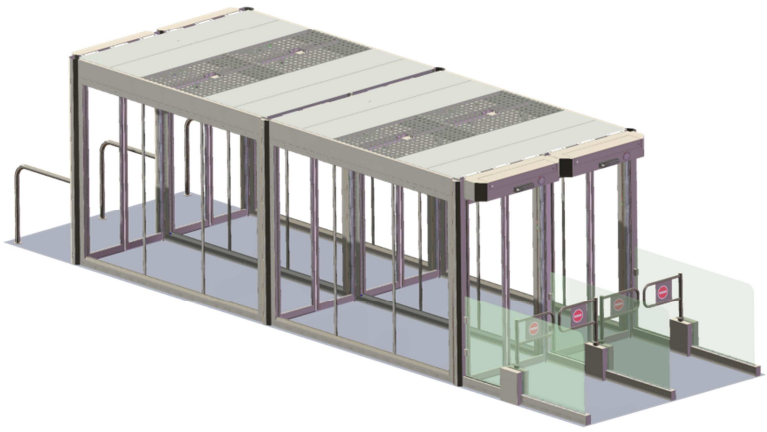
FlipFlow Triple offers enhanced security with 2 safe areas between 3 pairs of doors.

FlipFlow Triple Extended with swing gates at the exit side for increased security *(shown with optional side rails on the entry side)*



Installation options

The FlipFlow can be installed as a single unit or as a side by side combination. In case of side by side installation, it is possible to combine FlipFlows of pre-defined different widths.



Recommended width
All FlipFlow models are available in 3 clear width options: 35.43in *(900mm)*, 43.3in *(1100mm)* and 47.25in *(1200mm).*

A breach can be attempted in the ***Flow*** mode by a person who attempts to pass backwards through the tunnel in the opposite direction of the flow of the passengers. This breach attempt will be monitored by the breach response system and the doors will begin to close. However, depending on the safety settings, the doors may not close with the highest possible force when passengers are in the area between the door wings in order to avoid injuries. This makes a breach possible. Therefore, the recommended width to provide for the highest security is 900mm for a FlipFlow Twin and 1100mm for a FlipFlow Triple. The width of 1200mm should be used in ***Interlock*** mode only.

Surface options
All FlipFlow models are available with either a #3 stainless steel finish or powder coated carbon steel.

Glass
Wall panel and door glass is 5/16" laminated safety glass. Extensions are ½" safety glass.

Stickers
Entry doors will be provided with a blue arrow sticker while the exit doors will be provided with a red "X" sticker.

Sprinkler system
A cut out for a flush mount-type sprinkler system is optional on the center ceiling panel of each tunnel.

Electrical power requirements
110 Volt, 20A fuse (per lane)
Maximum power requirement:
- 1000 Watt for FlipFlow Triple with extension gates
- 600 Watt for FlipFlow Twin

Standby mode 200 Watt

Environmental Conditions
For indoor use only.

Dimensions and limits during installation and service

A minimal lateral clearance of 4” is required to install the FlipFlow. The FlipFlow should be attached laterally on the pillars to the building structure. This fixture is to be provided by the airport.
Earthquake approved anchors for the attachment of the pillars to the floor, where required, must be provided by the airport. (Maximum Anchor diameter = 15/32”)
Floor must be leveled and smooth with no deviations in excess of 1/16” from a twelve (12) foot location, in any direction.
The ceiling of the FlipFlow with the electrical systems is accessible through maintenance hatches from the inside of each tunnel. A minimum clearance of 24” is required for installation and a minimum clearance of 10” should be kept for servicing purposes after installation.