○ JANUS
Panachrome+ with Retrofit Smart 3D
Installation Guide

Product Description

Smart 3D combined with Panachrome+ 2D provides enhanced detection within the elevator environment specifically aimed at 3D detection.

This new Panachrome+ G3851 controller allows for input from the Smart 3D Radar detector to enable an additional trigger source for 3D detection. The smart Radar sensor is more sensitive to smaller objects, can distinguish cross-traffic and moving targets and is not affected by clothing colors.

Items Required for Installation

In the Box

+ Smart 3D Sensor and Housing

+ Smart 3D processor (adhesive tape attached)

+ Extension cable

+ 3 x M4 Spanner Head Screws

+ 3 x Pin Torqx Self-tapping Screws

+ 3 Smart 3D inserts (Black 65, Grey 67, and White 70)

+ Grommet for cable hole

Not included

+ Drill

+ 13mm/0.5" Drill bit

+ Screw driver

+ Panachrome+ (G3851) Controller

+ Panachrome+ Edges

Installation

Quick Summary

+ Ensure the elevator has been marked clearly as out of service

+ Installation of Smart 3D Sensor

+ Connecting up and powering the Smart 3D Sensor

+ Configuration and testing of Smart 3D sensor

1. Elevator Safety

Ensure the elevator has been clearly marked as out of service to potential passengers. Clearly mark out that work is being conducted on the elevator and is therefore not in use.

2. Selecting the correct Sensor Insert

2.1 Measure out the header height of the elevator (indicated in figure 1)

Figure 1
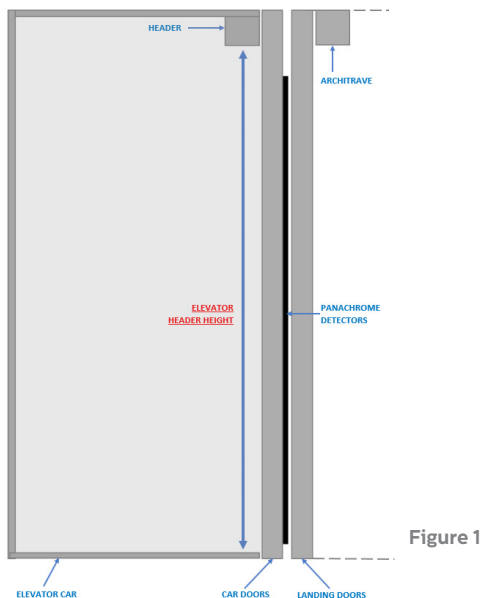
2.2 Using the height measurement, refer to Table 1 shown below, this will indicate the correct insert to use for your installation. The number in the table matches the number on the part as shown in Fig. 2. This insert tailors the detection zone of the sensor to your elevator.

*Please Note - Do not remove the foam insert located inside of the Smart 3D casing.

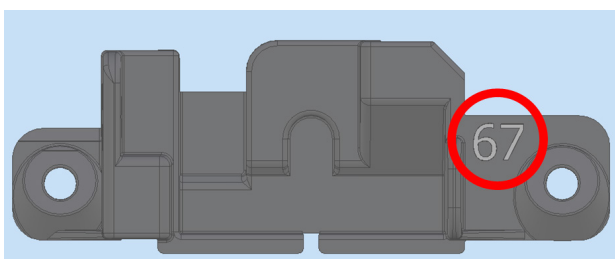| Header Height		
6.20 - 7.20ft 1.90 - 2.20mm	7.21 - 8.20ft 2.21 - 2.50mm	8.21 - 9.20ft 2.51 - 2.80mm
Black 65	Grey 67	White 70

Table 1

Figure 2

2.3 Check which insert is currently mounted in your Smart 3D. If the insert is correct proceed to step 3, if it needs replacing then follow the steps below

Using a PH1 screw driver unscrew screws A and B located either side of the sensor which hold the insert in place. This will then allow you to remove the sensor and its insert.
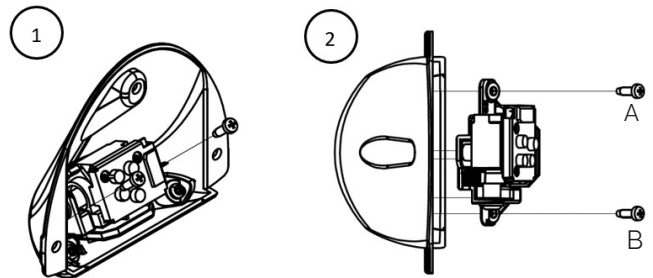
Once the insert has been removed, unscrew screw C which will then detach the insert from the sensor.
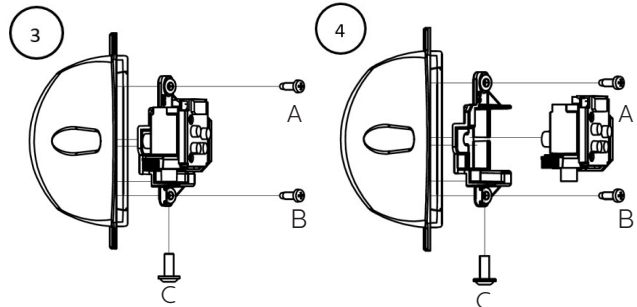
Next select the insert required and repeat the process above in reverse giving you the correct insert for your Smart 3D configuration.

3. Position of the Smart 3D sensor on the header

3.1 Measure out the correct position on the header of the elevator dependent (this is dependent on door opening).

3.1.1 Center Opening Doors

The Smart 3D sensor should be mounted in the center of the door opening, on the header of the elevator car, with the flat face of the sensor pointing outwards from the elevator.
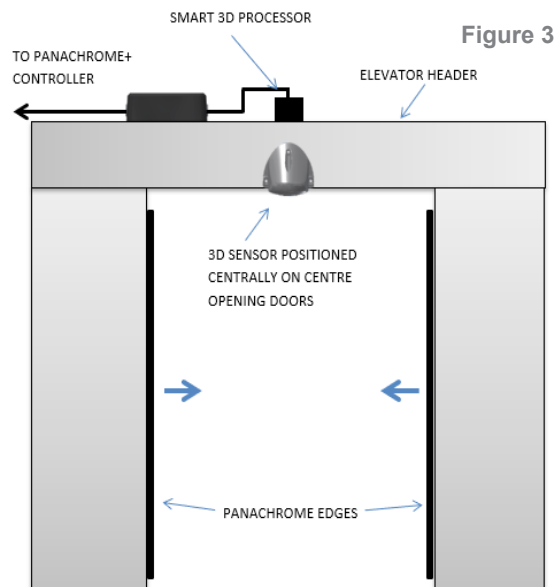
Figure 3

3.1.2 Side Opening Doors

The Smart 3D sensor should be mounted approx. 300mm/11.81" away from the return jamb, on the header of the elevator car, with the flat face of the sensor pointing outwards from the elevator.

SMART 3D PROCESSOR
ELEVATOR HEADER
TO PANACHROME+ CONTROLLER
3D SENSOR

11.8"
(300mm)

3D SENSOR (CENTRE POINT) MUST BE LOCATED 11.8" (300mm) FROM STRIKE POST ON SIDE OPENING DOORS
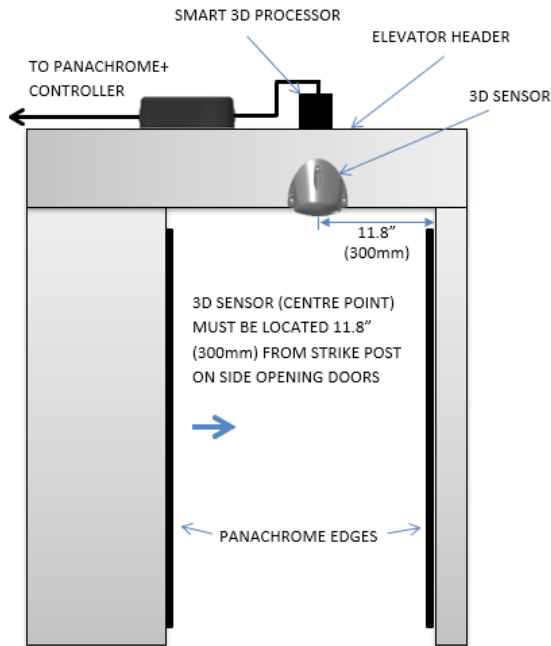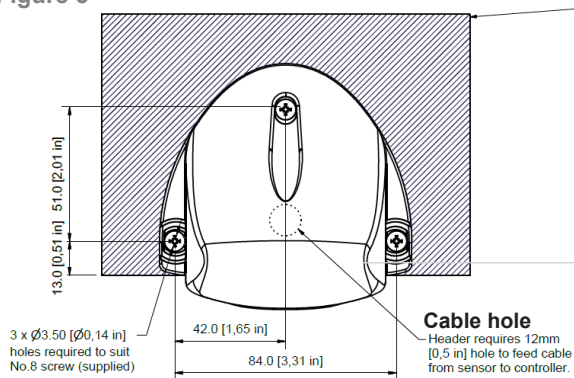
PANACHROME EDGES

Figure 4

3.2 Position the Smart 3D sensor on the header of the elevator as shown in Fig. 4. This must be within 19.69"/500mm from the front of the elevator doors.

3.3 Mark off and drill fixing and cable holes as per Fig. 5 on the header of the car.

Figure 5

13.0 [0,51 in]   51.0 [2,01 in]

3 x Ø3.50 [Ø0,14 in] holes required to suit No.8 screw (supplied)

42.0 [1,65 in]

84.0 [3,31 in]

Cable hole
Header requires 12mm [0,5 in] hole to feed cable from sensor to controller.

Please note that dimensions are shown in metric and imperial
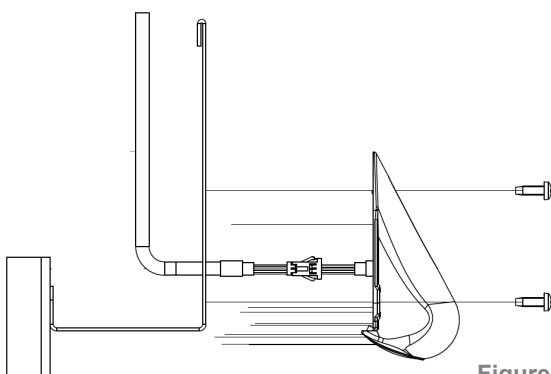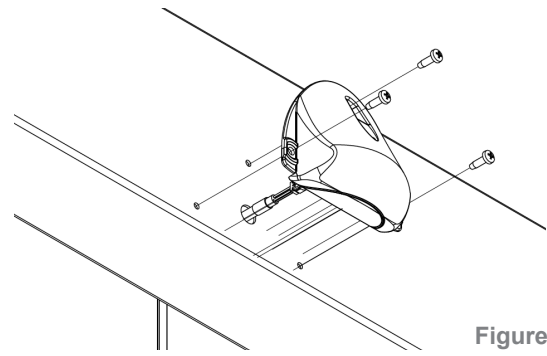

Figure 6

Figure 7

3.4 Connect the extension cable to the connection wire on the Smart 3D sensor.

3.5 Feed the extension cable and Smart 3D cable through the cable hole drilled in **3.3** and mount the Smart 3D (figure 4 and 5) using the screws provided.

4. Smart 3D processing Box

The Smart 3D processing box is recommended to be mounted on top of the elevator car and near to the Panachrome+ controller.

4.1 Lower the elevator car so that it is accessible from the landing and safe to operate on.

4.2 Gather the extension cable that is connected to the Smart 3D sensor (**3.4**) and connect it to the processing box.

4.3 Find a suitable place to mount the processing box using either the adhesive tape on the bottom of the box or use the mounting holes to fix the box to the top of the car.

5. Panachrome+ Controller

5.1 Assuming the Panachrome+ controller has already been installed, connect the Smart 3D processing box using the 1.9m /6.23ftcable provided (use figure 8 as reference).

107 250 - P+ CONTROLLER

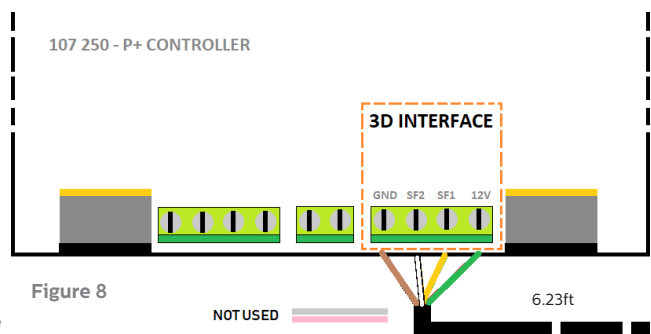**3D INTERFACE**

GND SF2 SF1 12V

Figure 8

NOT USED

6.23ft

Color	Function
Green	+12VDC
Yellow	Output signal for wide lobe (SF1)
White	Output signal for close in lobe (SF2)
Brown	Ground (0VDC)

5. Menu Navigation

Panachrome$^+$ settings can be changed by using the 4-button keypad and screen.

Key	Function
↰	Go back/cancel
▼	Menu and value down
▲	Menu and value up
✓	Menu item select and confirm

To enter the settings menu first press ▼.

Press ▼ and ▲ to go to the desired function then use ✓ to select. Some functions have multiple choices so use ▼ and ▲ to view. An active function is indicated by a * symbol.

Note: the bottom line on the display is the active function or menu item. The top row displays 'Panachrome$^+$' when the first level is selected then changes when sub-menus are accessed.

For example:

First Level   **Second Level**

Panachrome$^+$ Visible Diodes

Visible Diodes ▼ Mode

There are 3 types of tones when navigating through the menus:

1. Single short high pitched – menu navigation

2. Single low pitch tone – incorrect selection

3. Three short tones – settings change confirmation

Smart 3D Configuration Options

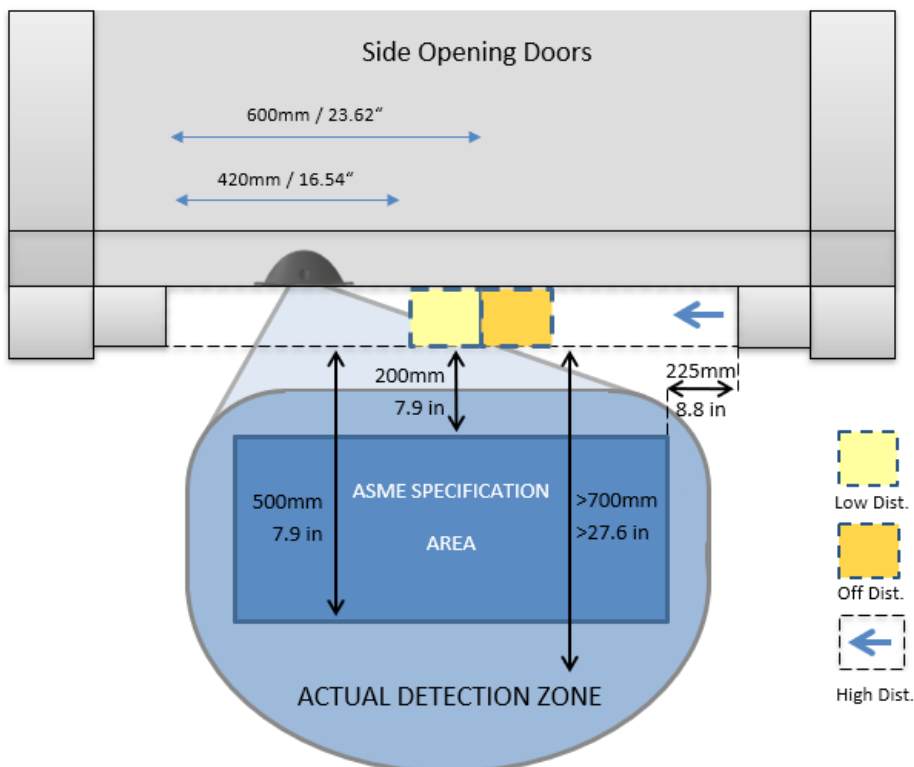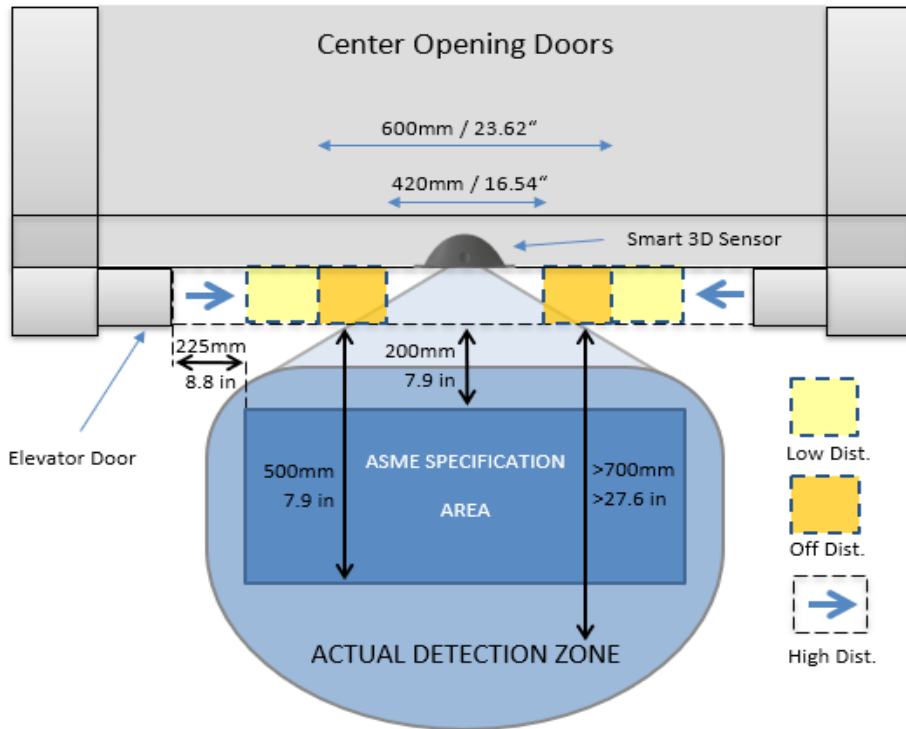| 3D				
	3D Radar enable			Radar Settings
		Off	Turns Off Smart 3D sensor	
		On	Turns On Smart 3D sensor	
	3D Rdr Low Dist		Sets the door separation distance (in) at which the Radar detection area is switched from high to low. The default is set to 600mm/23.62". Each increment change is 10mm/0.4"	
		+0 (default)		
	3D Rdr Off Dist		Sets the door separation distance (in) at which the Radar detection is turned off. The default is set to 420mm/ 16.54". Each increment change is 10mm/0.4"	
		+0 (default)		
	3D IR Enabled		** Only Available with 3D light curtains. Enable/ disable 3D Infra-red detection. Advise to switch to off when using Smart 3D	IR Settings
		Off		
		On		
	IR Sensitivity			
		High	** Only Available with 3D light curtains. Sensitivity settings to be changed if IR is enabled and you are getting false triggers from the device.	
		Intermediate		
		Low		
	3D Mode			Common
		On at closing	3D activates when the doors are closing	
		On at 800mm/31.5"	3D activates when the doors are approx 800mm apart	
		On always	3D always with no 3D time-out	
		On (10s)	3D always with 10s 3D time-out	
		On (20s)	3D always with 20s 3D time-out	
	Time-out Count		Counts the 3D triggers (2 to 10) and disables 3D once this count is reached. Note: resets with a 2D trigger or doors fully closed	
		1-10		

Smart 3D RADAR Settings

The Smart 3D system is designed to change its field of view based on how close the doors are from shutting. The Smart 3D Radar recognizes the doors going through three zones; *High distance, Low Distance* and *Off distance.* As the doors pass through each zone the detection zone *is altered (made narrower and shorter) so that as the doors shut and the sensor is not triggered by the movement of the doors. The point at which these zones are entered can be configured.*

+ 3D Rdr Low Dist (SF1)

Sets the door separation distance (in) at which the Smart 3D detection area is switched from high to low. The default is set to 600mm / 23.62".

+ 3D Rdr Off Dist (SF2)

Sets the door separation distance (in) at which the Smart 3D detection is turned off. The default is set to 420 mm / 16.54".

Center Opening Doors

600mm / 23.62"

420mm / 16.54"

Smart 3D Sensor

Elevator Door

225mm
8.8 in

200mm
7.9 in

500mm
7.9 in

ASME SPECIFICATION

AREA

>700mm
>27.6 in

Low Dist.

Off Dist.

High Dist.

ACTUAL DETECTION ZONE

Side Opening Doors

600mm / 23.62"

420mm / 16.54"

200mm
7.9 in

225mm
8.8 in

500mm
7.9 in

ASME SPECIFICATION

AREA

>700mm
>27.6 in

Low Dist.

Off Dist.

High Dist.

ACTUAL DETECTION ZONE

Some of the highlights of the 3D system are described below:

+ 3D Method

3D detection can be active for Smart 3D Radar or InfraRed (IR)(3D light curtains required), or both.

+ 3D Mode

Irrespective of the active 3D detection system, IR and/or Smart 3D, both follow the selected 3D mode (3D light curtains needed for IR detection). If "On at Closing" is selected, then it will not be active until the doors start to close. "On Always", "10 seconds time-out" and "20 seconds time-out" means it will be active when the doors are fully open/static as well as closing. *Note to be ASME 17.1 2019 compliant the "On Always" or "20 seconds time-out" function should be selected.

+ 3D Time-out Count

As with the IR sensors, after 3 consecutive 3D triggers (without 2D triggers or fully close) the Smart 3D triggers will be ignored.

+ 3D Shut off

Both 3D detection systems will shut off when the doors get to a certain distance.

+ LCD Trigger Information

The LCD display on the Panachrome+ controller depending on the trigger status i.e. Triggered or Un-Triggered. When Un-Triggered, the Display will show the distance at which the last trigger occurred and the nature of the trigger (Low dist or off dist), and whether it was a 2D, IR or a Smart 3D trigger.

Note that the distance is only an estimation by the detectors and may not be accurate. It is shown on the LCD when Un-Triggered and the display status is active.

Troubleshooting

+ Panachrome+ Controller:

a. Ensure Panachrome+ controller is installed correctly as per the relevant installation guide.

b. For any Smart 3D fault finding, the Panachrome+ 3D controller settings must first be changed in '3D' - '3D Mode' to 'On Always' and also 'Visible Diodes' - 'Mode' to 'Trigger'. Refer to for Panachrome+ menu description. Those settings mean that LED's on the light curtains will turn red for any trigger, making it easier to test the 3D detection.

+ 2D Detection fault finding:

a. Refer to Panachrome+ controller installation guide

+ No 3D Detection triggers:

a. Break 2D detection plane and retest 3D – doing this will reset the '3D Time-out Count'.

b. Ensure '3D Radar' is set to 'On' in '3D' settings menu of the Panachrome+ controller.

c. Check wiring and connections between sensor, processing unit, and Panachrome+ controller to ensure continuity.

d. Is the Panachrome+ controller correctly installed? If the display is showing either of the following text strings, then this confirms that the controller is receiving triggers from the Smart 3D sensor:

'Un-Triggered   'Triggered

Smart 3D@XXX   XXXX'   Smart 3D@XXX   XXXX'

+ 3D False Triggers:

a. Check that '3D' - '3D IR Enabled' is set to 'Off' on the Panachrome+ controller.

b. Check whether the recommended plastic insert is fitted as per Section 2.

c. Detection range can be reduced by fitting either the Grey 67 (smaller detection range) insert or the White 70 (minimum detection range) insert.

+ 3D False Triggers - Doors Closing

In the event of a 3D false trigger on door closing, it is possible that this is simply the sensor picking up the movement of the doors and seeing it as an approaching object. Immunity to door triggers can be increased by adjusting the 3D radar low distance and 3D radar off distance (see 'Smart 3D configuration Options').

Door Immunity	3D Rdr Off Distance	3D Rdr Low Distance
Low Immunity	-10	-10
Medium Immunity (Default)	0	0
High Immunity	+10	+10

It is recommended that in the event of false triggers on door closing that the high immunity values are used.

Alternatively, to increase detection sensitivity on door closing, please use the Low Immunity values shown above (please note that this will increase the risk of false triggers). Refer to Section 5. (G3851 controller settings) for further detail.

+ Door triggering wider apart

If the doors trigger above 600mm/23.62", increase the 3D Rdr Low Dist.

+ Door triggering near to close

If the doors are triggering between 420mm/16.54" and 600mm/23.62", increase the 3D Rdr Off distance.