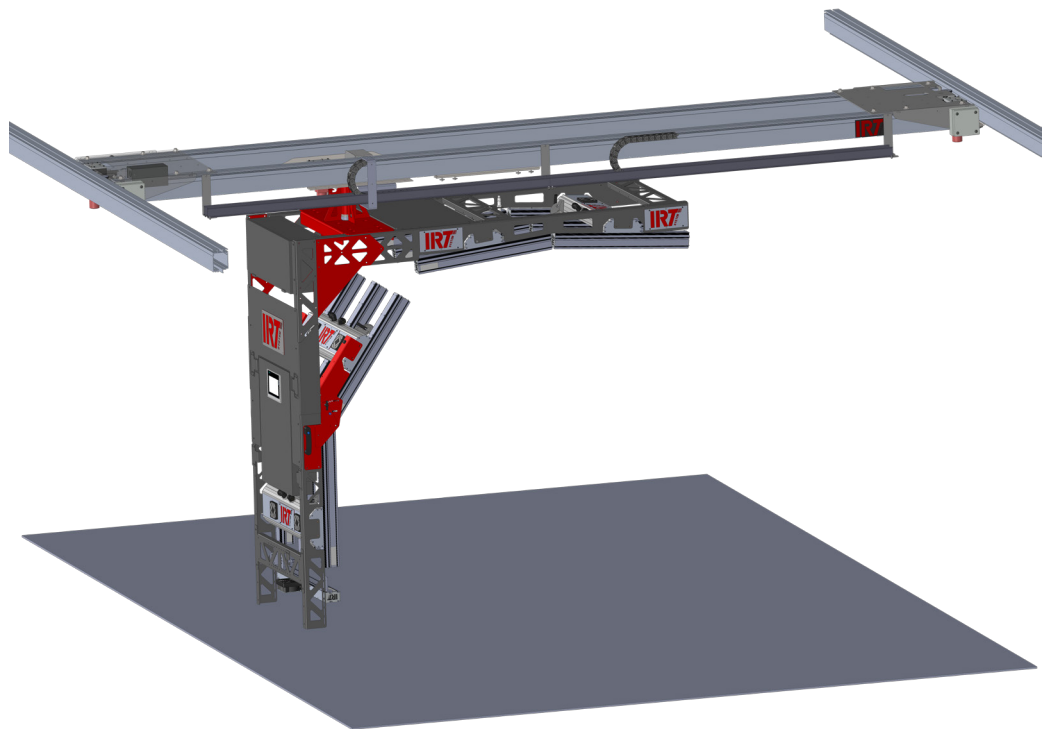


EN Instruction Manual (original language)

IRT FLEXICURE



IRT
SYSTEM

HEDSON

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1. Safety instructions

Read all instructions before using the IRT FlexiCure.

Use only as described in this manual.

Use only manufacturer's recommended attachments.

The IRT FlexiCure is equipped with an Emergency Stop (location on the operator panel), which will disconnect the power to the arch.



WARNING!

To reduce the risk of fire, electric shock or injury:

- The facility works with 120-480 V which constitutes a **lethal voltage!** Contact and changes to the electrical equipment must only be performed by electrically qualified persons.
- The IRT FlexiCure must **not be exposed to paint fog, sanding dust or solvents** due to fire and explosion risk. Furthermore, this will reduce the lifetime of the arch.
- The booth must have **technical ventilation** (booth aspiration) during the drying process. The air volume flow has to be sufficient to avoid solvent concentrations above 25% of the lower explosion limit (LEL).
- Do not store, prepare or use materials containing **solvent** within the hazardous area.
- Keep all **flammable materials** in a sufficient distance from a drying device in use.
- **Do not allow as a toy!** Close attention is necessary when used by or near children.
- The system should not be used for transportation or lifting purposes.
- **Crushing hazard!** Before starting the process the operator must make sure that there is no other person in the booth.
- **Risk of slipping, tripping or falling!** It is the responsibility of the owner to identify the risk of slipping, tripping and falling.
- Do not use running water or flammable liquids for **cleaning**. Cleaning of the sensor may be performed with a damp cloth.
- **Intensive heat radiation!** Hand, face and other parts of the body should be as little exposed as possible to the heat radiation.
- Do not look directly at the light source.
- **Hot surface!** The part in front of the lamps can become very hot.
- No person may be in the area when the arch is in use. The operator must make sure the area is cleared before starting the machine.
- If a person is caught in the equipment, press the **Emergency stop** button and push the equipment manually to release the person.

Save these instructions!

2. Intended use of the product

This product serves exclusively to accelerate the drying/curing of base and clear coats. This applies to both water-borne and solvent-based products. Its site of use is the finishing area. Within the automotive industry and vehicle repair sectors, it is used to cure full panels before polishing. The product must not be used for other purposes than the described drying processes. The maximum ambient temperature during operation should not exceed 40°C. The IRT FlexiCure must not be used within an unsafe distance from spraying activities to avoid explosion risk. The device may be operated only with a fully functional original control system. Only original spare parts shall be used to maintain this product's high safety.

3. Product description

The IRT FlexiCure comprises a number of IRT heaters arranged as a half arch. The heaters are equipped with short-wave infrared lamps and gold-coated freeform reflectors. The IR lamps are easily exchangeable and the reflectors are protected against mechanical damage by a mesh.

Both automatic and manual curing is possible. Place the IRT FlexiCure in front of the panel to be cured, press start and the arch moves over the panel and cures it fully automatically. Manual static drying is also possible.

By means of movable side panels, all exterior surfaces on a vehicle can be cured. A uniform heat distribution is ensured due to the design and an individually pyrometer controlled heater output.

The possibility for programmed radiation exposure of only the necessary surfaces of the vehicle leads to time and energy savings. Thereby, it contributes to a cost-effective and environmental friendly process.

3.1 Particular advantages

The short-wave IR heating enables the coating to be cured from the inside outwards. This prevents solvents to be trapped inside the coating and ensures a fast and high quality curing.

By using short-wave technology and gold-coated reflectors with a high tech shape, important advantages are achieved. Firstly, by radiating only the needed areas and not heating any air, a lower energy consumption is achieved. Secondly, a more uniform surface temperature is obtained by distributing the energy evenly. Thirdly, a larger drying surface is achieved. Fourthly, less radiation outside the curing area.

3.2 Technical data

The IRT FlexiCure emits short-wave IR radiation with a peak at 1120 nm.

Power	38 kW
Rated voltage	400-480 V ~3Ph/PE ± 5%
Nominal frequency	50-60 Hz
Full load current	55 A
Main disconnect fuse	50-63 A
Curing temperature (curing surface)	Max. 170°C
Ambient temperature (during operation)	Max. 40°C
Sound pressure level	<70 dB (A) at 1 m
Sound power level	<70 dB (A) at 1 m
Weight IRT FlexiCure	150 kg
Weight side rails	100 kg
Weight cross rail	200 kg

Dimensions on last page.

4. Instructions to the owner

The owner of the arch must produce clear operating instructions, adapted to local site conditions, and make these available to all users who have to observe these operating instructions.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

Dispose of used items at the nearest environmental protection facility for recycling.

5. Assembly instructions

See separate document for detailed instructions:

Rail system

713683 Rail System Assembly Instruction

6. Operation

6.1 Introduction

No person may be in the area when the IRT FlexiCure is in use. The operator must make sure the area is cleared and no flammable material gets in contact with the IRT heaters before starting the machine.

Switch on the arch via the main switch. The arch is controlled from the control panel which is designed to help you operate the curing process in a simple and convenient way.

Emergency stop next to the operation panel.

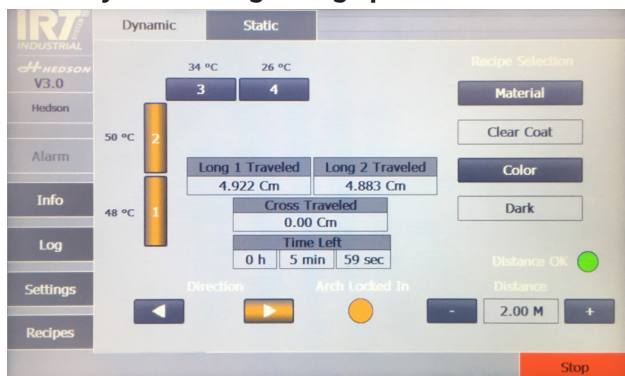
6.2 Dynamic curing



Start a new curing:

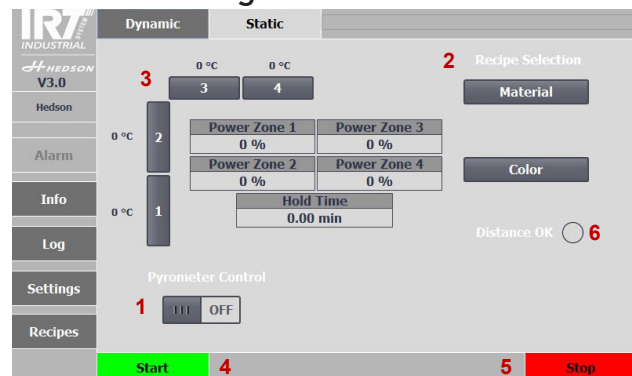
1. **Recipe Selection (1)** - select **Material** and **Color** to be cured. View loaded recipe values (2).
2. **Zones (3)** - select which zones to be cured.
3. **Distance (4)** - select distance for the operation movement. Press the -/+ buttons to decrease/increase the distance.
4. **Direction (5)** - select direction of arch movement.
5. **Start (6)** - press to start curing process.
6. **Stop (7)** - press to stop an ongoing curing process. Process stops immediately (movement and lamps).
7. **Distance OK (8)** - turns green when distance between car and side curing is OK.

6.2.1 Dynamic curing during operation



During operation, it is possible to view how far the casettes has been moving since start.

6.3 Static curing

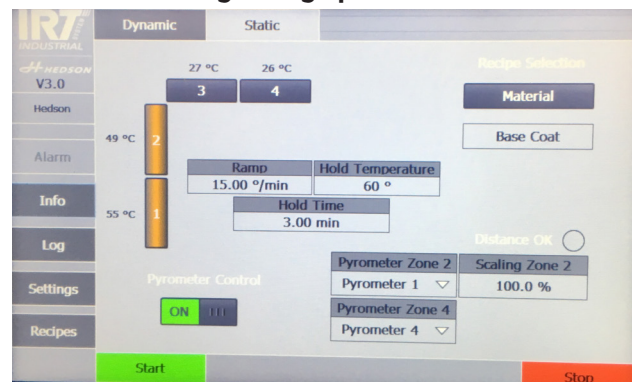


Start a new curing:

1. **Pyrometer Control (1)** - select if pyrometer will be activated or deactivated (ON/OFF).
2. **Recipe Selection (2)** - select **Material** and **Color** (can only be selected when pyrometer is OFF) to be cured.
3. **Zones (3)** - select which zones to be cured.
4. **Start (4)** - press to start curing process.
5. **Stop (5)** - press to stop an ongoing curing process. Process stops immediately (movement and lamps).
6. **Distance OK (6)** - turns green when distance between car and side curing is OK.

Also, use this page to activate/deactivate pyrometer 2 and 4.

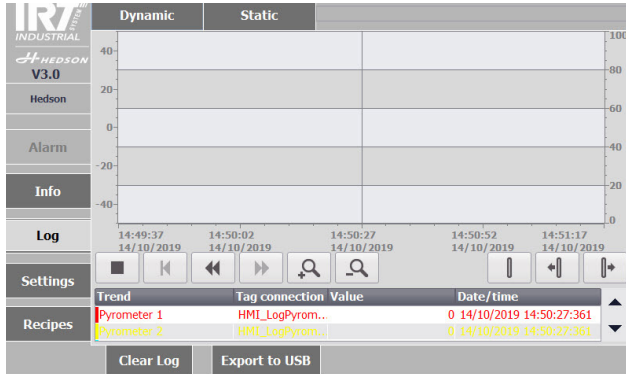
6.3.1 Static curing during operation



During operation, it is possible to view how much time is left of ramp time and hold time.

6.4 Log

6.4.1 Pyrometer log



This page displays the logged pyrometer activity during operation.

6.4.2 Alarm

The screenshot shows the 'Alarm' page in the IRT V3.0 interface. It displays a table with columns: Time, Date, and Text. Two active alarms are listed: 'Time Out Drive Long 1' at 15:14:09 and 'Processalarm Pyrometer 4' at 15:14:09. Navigation buttons 'Back', 'Logg', and 'Reset Alarm' are at the bottom.

This page displays active alarms. Press **Reset alarm** to reset.

6.4.3 Alarm log

The screenshot shows the 'Alarm log' page in the IRT V3.0 interface. It displays a table with columns: Time, Date, and Text. It lists several previous alarms, including 'Time Out Drive Long 1' and 'Processalarm Pyrometer 4' at various times on 14/10/2019. Navigation buttons 'Logg', 'Back', 'Reset Alarm', and 'Clear' are at the bottom.

This page displays previous alarms. Press **Clear** to clear log

7. Settings

The screenshot shows the 'Settings' page in the IRT V3.0 interface. It is divided into 'Dynamic' and 'Static' sections. The 'Dynamic' section includes a 'Names' table with columns for Material 1-5, Material 6-10, and Color 1-4. The 'Static' section includes 'System' settings like Language (English (UK)), Units (Metric / °C), Distance Comp (Deactivated), and Distance parameters (ASP (mm) = 300, AEP (mm) = 500). Navigation buttons like 'Machine Settings' are at the bottom.

Use **Settings** to

- change material and color names
- switch language
- switch units
- deactivate the distance compensation
- set distance parameters, see Distance OK in chapters 6.2 and 6.3.
ASP = analog start point, AEP = analog end point

7.1 Machine Settings

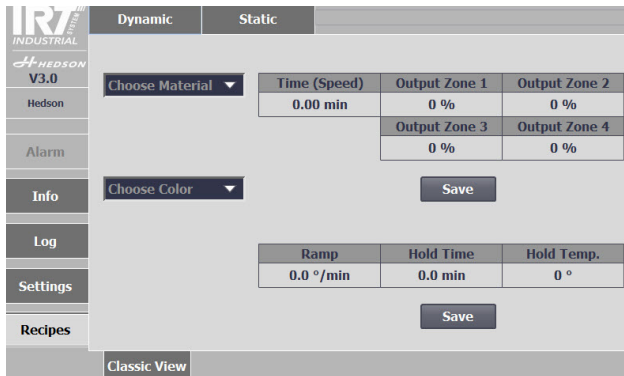
The screenshot shows the 'Machine Settings' page in the IRT V3.0 interface. It is divided into 'Dynamic' and 'Static' sections. The 'Dynamic' section includes a table with columns for Reg P Zone 1 & 2, Reg I Zone 1 & 2, Reg D Zone 1 & 2, Reg P Zone 3 & 4, Reg I Zone 3 & 4, and Reg D Zone 3 & 4. The 'Static' section includes Offset Pyrometer 1-4, Distance Factor (0.000), Norm Distance (0.000 M), Process Alarm Limit (0 °C), Main Supply (400 Volt), Fan Time (0.0 Sec), and Cut Off/Cut On Offsets (0 °C). A 'Date/Time' button is at the bottom right.

Use **Machine Settings** to set the machine.

This is set in the factory. Should not be changed without consulting a by Hedson authorized service technician.

8. Recipe settings

8.1 Custom view



In the Custom view you can load and change the recipe values following the steps in 8.1.1-8.1.3.

8.1.1 Paint material

1. Choose **Material**.
2. Choose **Color** for the chosen paint material.
3. Continue with 8.1.2.

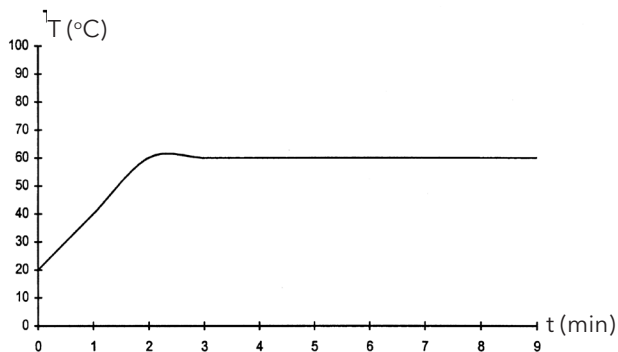
8.1.2 Time (Speed) and Output

1. Set **Time (Speed)** according to below table.
2. Chose **Output** for the 4 different zones 0-100%.
3. Press **Save** to save changes and continue with 8.1.3.

SPEED	TIME (SPEED)
20 cm/min	4.5 min
30 cm/min	3 min
40 cm/min	2.25 min
50 cm/min	1.8 min
60 cm/min	1.5 min
70 cm/min	1.29 min
80 cm/min	1.12 min
90 cm/min	1 min
100 cm/min	0.9 min

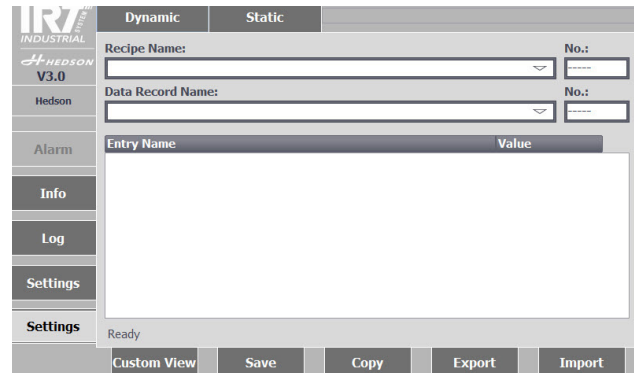
8.1.3 Temperature curve

1. Set the temperature ramp in °C/mm.
2. Set the hold temperature in °C.
3. Set the hold time in minutes and seconds.
4. Press **Save** to save changes.



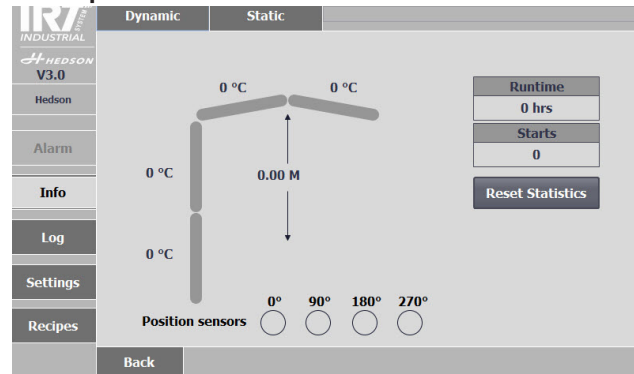
Programming example:
 Temp ramp 20°C/min
 Hold temp 60°C
 Hold time 7 min

8.2 Classic view



In the **Classic view** you can edit recipe, copy values in **Data records** and import/export recipes.

8.3 Pictures of lamp and pyrometer placements



The **Info** page displays pyrometer values (temperature and height), runtime, number of starts and position sensor indication.

9. Maintenance and Service

9.1 General

Note! All maintenance and repairs should only be performed by trained and qualified personnel and only when the machine is in a non-energized state. Switch off power supply and lock the main switch.

Use a four-legged ladder / platform at the service of the parts situated in the top section of the arch. It is the responsibility of the user to ensure this.

Maintenance work is only to be carried out at the stipulated intervals by suitably trained personnel. Do not use running water or flammable liquids. Abide by the following points to ensure a long service life and continuous operation of the IRT FlexiCure:

- Only original spare parts may be used.
- Adhere to the maintenance intervals.
- Contact the manufacturer's customer service department regarding any maintenance work that is not listed or shown in this manual.

9.2 Maintenance schedule

Quarterly OR after 800 curings, whichever comes first

- Check that all IR lamps light up during operation. Defect IR lamps can cause uneven heat distribution over the surface.
- Check the gold foil of the reflectors. Damaged or extremely dirty gold foil can over-heat the reflector body and is replaced to maintain proper heat distribution. In case of doubt, please contact the customer service in order to clarify if the gold coated reflector needs to be changed.

Yearly OR after 2500 curings, whichever comes first

- Check that all IR lamps light up during operation. Defect IR lamps can cause uneven heat distribution over the surface.
- Check the gold foil of the reflectors. Damaged or extremely dirty gold foil can over-heat the reflector body and is replaced to maintain proper heat distribution. In case of doubt, please contact the customer service in order to clarify if the gold coated reflector needs to be changed.
- Check the filters and replace if needed.
- Check the tension of the drive belt and adjust if needed.

9.3 IRT lamp replacement

Attention!

Do not touch either the gold coated reflector or the new IR lamp with your fingers. Only remove the protective paper on the IR lamp after you have installed it.

1. Disconnect power supply.
2. Loosen the screws at both end covers and remove the end covers.
3. Remove the net and unscrew the lamp from the two ends.
4. Gently push the metal lid out of the lamp holder and lift the lamp out of the reflector.
5. Secure the new lamp in one of the lamp holders. Make sure the metal lid on the lamp is inserted as far as possible into the clip on the lamp holder. Tighten the screw.
6. Gently bend the metal lid on the other side of the lamp so it can slide into the other lamp holder clamp. Tighten the screw.
7. Center the IRT lamp both sideways and lengthwise in the reflector body.
8. Remove the protective cover from the lamp glass.
9. Refit the protective net.

10. Trouble shooting

Drying does not start

Check that the start requirements are fulfilled.

Check alarms and reset if necessary.

No power supply - turn on the main switch and check the fuses.

Check the fuses in both electrical cabinet and arch.

Note! This may only be performed by qualified personnel.

11. Spare parts

The following spare parts are the most common ones.

Part	Part nr.
Lamp 1124, 4 kW	716207
Lamp 790, 3 kW	102701
Lamp 230, 1 kW	195516
Lampholder	109790
Gold foil 1124	716211
Gold foil 790	102155
Fan	195497
Filter	180006
Pyrometer 15:1	195361
Solid state relay	193942
Actuator	196321
Handle	195612
Magnetic brake	734204
Inductive sensor	122437
Driving wheel	714081
Driving engine	123749
Coupling	123777
Pulse sensor	750429

12. Electrical diagrams

See separate document.

13. EC Declaration of conformity

In accordance with 2006/42/EC

We, Hedson Technologies AB
Box 1530
SE-462 28 Vänersborg
Sweden

declare under our sole responsibility that the product
IRT FlexiCure

to which this declaration relates, is in conformity with the following standards;

EN 60204-1	Safety of machinery, Electrical equipment of machines
EN 61000-6-3	Electro-magnetic Compatibility, Generic Emission Standard
EN 61000-6-2	Electro-magnetic Compatibility, Generic Immunity Standard
EN ISO 12100	Safety of Machinery, General principles for design
EN ISO 9001	Quality Management System
EN ISO 13849-1	Safety of Machinery, Safety-related parts of control systems, General principles for design
EN ISO 13849-2	Safety of Machinery, Safety-related parts of control systems, Validation

in accordance with the provisions of the following directives in their most current version

2006/42/EC	Machinery Directive
2014/35/EU	Low Voltage Directive
2014/30/EU	Electromagnetic Compatibility Directive
2011/65/EU	Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Arlöv, Sweden, August 24th 2018

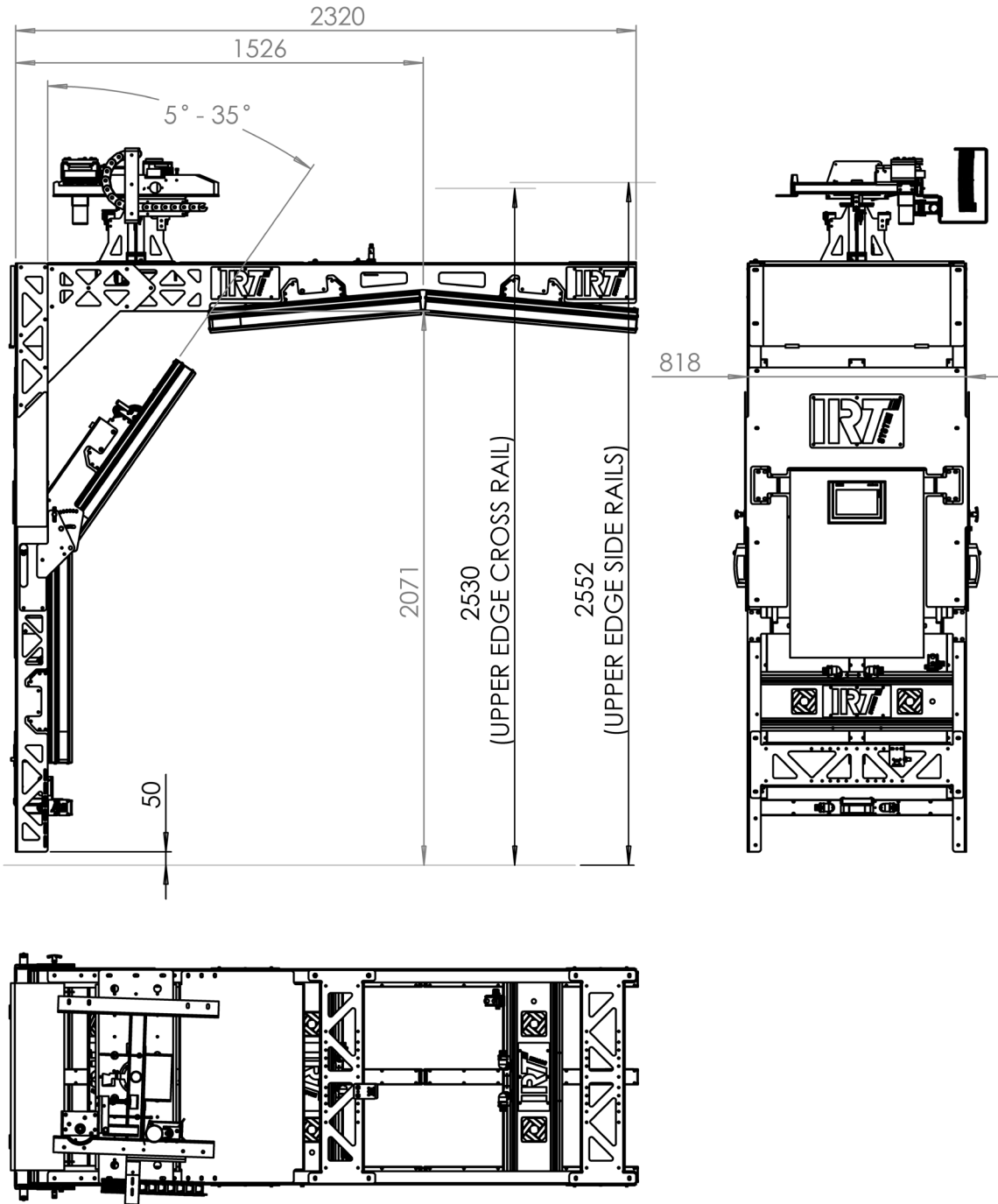
HEDSON TECHNOLOGIES AB
Technology Division



Magnus Björnström

CEO

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