

# AURA

Advanced Use Robotic Arm



COMAU



# AURA

## Soft as a Human Touch



# The Culture of Automation

Designing advanced automation solutions means thinking about the industry in a new way, developing new scenarios, designing innovative products and creating new ways to streamline production processes.

It requires more than technical competence; it requires a team of professionals whose vision is rooted in a culture of excellence. It also requires a combination of talent, passion and experience that unite to define new trends in automation.

**Here at Comau, our passion for our work reflects who we are.**

## Comau HUMANufacturing

Industry 4.0. The factory is changing to become a network of flexible, modular and scalable automation systems that are capable of operating autonomously or in a secure synergistic way with operators, always connected and under control.

With AURA automation is no longer confined within fences, but it collaborates with human beings: this is what we like to call Comau HUMANufacturing.



## Discover AURA: almost human

The skin which covers this Comau robot recalls human skin sensitivity.

AURA supports humans as they perform manual operations by optimizing the work process.

Speed is tuned, depending on the device signals, which makes it possible for the robot to move in open space or in contact operations by following programmed trajectories or learning from the operator via manual guidance.

### Why AURA is unique:

- highest payload and reach than any collaborative robot on the market;
- high speed mode is dynamically managed, when collaboration mode is not required;
- collision avoidance solution applied to robot and tools;



# Safe and Sensitive

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# The Challenge of Collaborative Robotics

**To build a flexible production environment, it is necessary to:**

- remove fences or other obstacles to a barrier-free floor;
- allow humans and robots to work side-by-side, complementing each other's particular skills;
- allow operators to interact easily with robots, correcting their behavior, as needed, and quickly teaching them new tasks.

**Comau AURA technology is flexible enough  
to be compliant with all types of collaborative operations**

| TYPE OF COLLABORATIVE OPERATION                        | MAIN MEANS OF RISK REDUCTION                                                  |
|--------------------------------------------------------|-------------------------------------------------------------------------------|
| Safety-rated monitored stop                            | No robot motion when operator is in collaborative work space                  |
| Hand guiding                                           | Robot motion only through direct input of operator                            |
| Speed and separation monitoring                        | Robots motion only when separation distance above minimum separation distance |
| Power and force limiting by inherent design or control | In contact events robot can only impart limited static and dynamic forces     |

**AURA technology certified by TÜV SÜD according to EN ISO 13849-12015**

## 6 safety layers for a modular approach

|                           |                          |
|---------------------------|--------------------------|
| STANDARD<br>CONFIGURATION | Foam                     |
|                           | Contact sensor           |
|                           | Proximity sensor         |
| OPTIONS                   | Manual guidance          |
|                           | Laser scanner management |
|                           | Force control            |

### Features

- High payload and reach collaborative robot (170 kg, 2.8 m reach)
- Collision avoidance system
- Automatic switch between collaborative/high speed modes
- Mode identification based on led color
- Fully collaborative robotic systems (including gripper)
- Hollow Wrist robot

### Benefits

- Optimized working process even in heavy payload collaborative application
- Floor space optimization
- Reduction of yellow components (e.g. fences)
- Easy re-programming by non-experts due to Manual Guidance

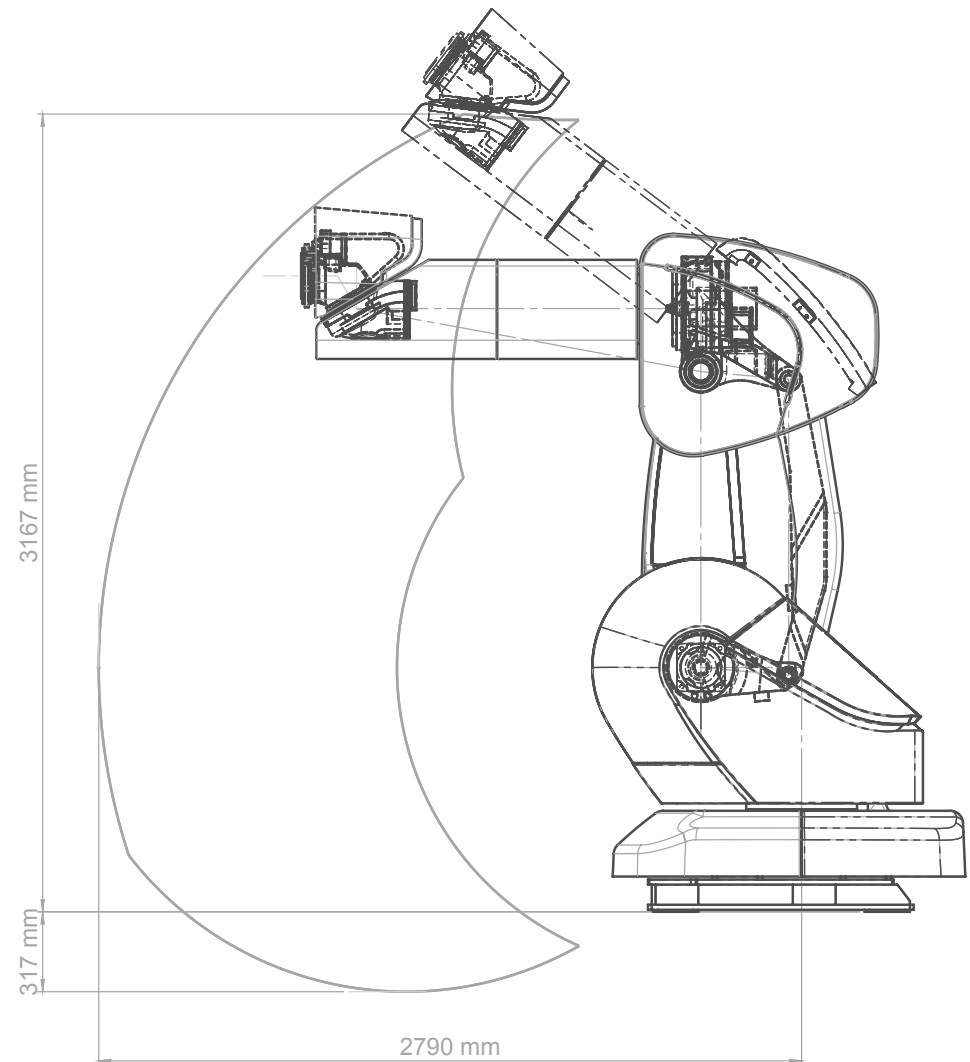
With AURA we transform  
a standard Comau Hollow Wrist robot  
into a collaborative solution.





# Technical specifications

| VERSION                            |        | AURA-170-2.8                                 |
|------------------------------------|--------|----------------------------------------------|
| Structure / n° axes                |        | anthropomorphous / 6 axes                    |
| Max load at wrist                  |        | 170 kg (375 lbs)                             |
| Torque on axis 4                   |        | 1010 Nm                                      |
| Torque on axis 5                   |        | 804 Nm                                       |
| Torque on axis 6                   |        | 412 Nm                                       |
| Stroke / (Speed)                   | Axis 1 | +/- 180° (100 °/s)*                          |
|                                    | Axis 2 | +85° / - 20° (85 °/s)*                       |
|                                    | Axis 3 | -50° / -220° (100 °/s)*                      |
|                                    | Axis 4 | +/- 180° (130 °/s)*                          |
|                                    | Axis 5 | +/- 180° (140 °/s)*                          |
|                                    | Axis 6 | +/- 180° (190 °/s)*                          |
| Maximum horizontal reach           |        | 2790 mm (109.8 in)                           |
| Repeatability                      |        | +/-0,1 mm                                    |
| Robot weight                       |        | 1615 kg (3560 lbs)                           |
| Tool coupling flange               |        | ISO 9409 - 1 - A 125<br>ISO 9409 - 1 - A 160 |
| Motors                             |        | AC brushless                                 |
| Position measurement system        |        | encoders                                     |
| Total power installed              |        | 8 kVA                                        |
| Working temperature                |        | 0 / +45 °C                                   |
| Storage temperature                |        | -25 °C / + 55 °C                             |
| Robot color                        |        | blue and grey                                |
| Assembly position                  |        | floor                                        |
| Maximum linear speed               |        | up to 2000 mm/s*                             |
| Maximum collaborative linear speed |        | up to 500 mm/s                               |
| Maximum proximity detection        |        | up to 200 mm                                 |



\* Maximum speed not collaborative mode (with additional safety device)



### COLLISION AVOIDANCE SYSTEM

- Proximity sensor integrated in the skin to detect the operator in advance, thereby avoiding a collision
- Skin system is also applicable for the end-effector, providing a fully collaborative application

**GREEN:** collaborative mode

**Blinking GREEN:** manual guidance mode or programming mode



**BLUE:** hard touch (manual restart)

**Blinking BLUE:** soft touch (automatic restart)



**RED:** alarm or fault



**No LED:** high speed mode, not collaborative (laser scanner installed)



### COLLABORATIVE/NON-COLLABORATIVE MODE SWITCH

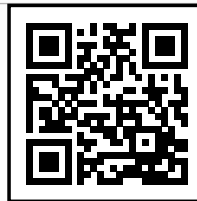
- Laser scanner option allows to switch from high performance mode to collaborative mode



## Ease of use

- Intuitive interface inspired by smartphones and tablets
- Program in as little as 15 minutes without having to learn a programming language
- Wireless communication
- No need to have a dedicated device for each robot (the tablet can be shared among multiple robots and viceversa)
- Manual Guidance mode to move/program the robot without writing SW code

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