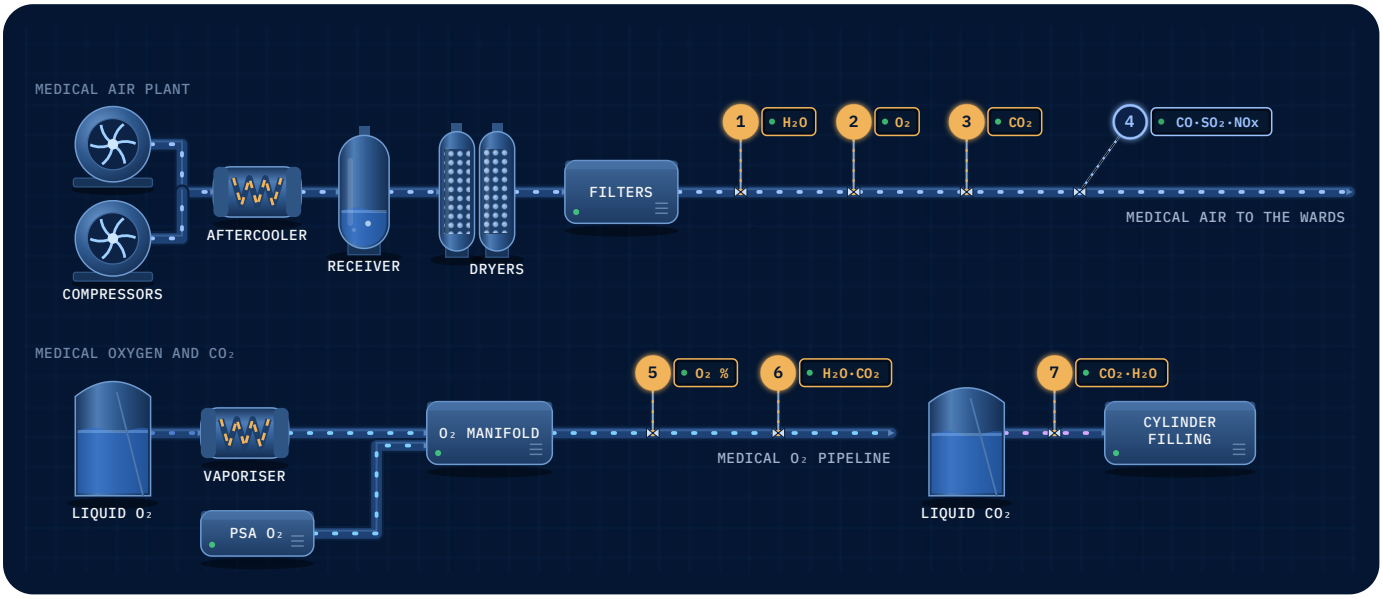
Medical gases: where to measure moisture, O_2 and CO_2

Follow medical air from the compressors to the wards, and medical oxygen and CO_2 from storage to the pipeline and cylinders. Each point shows the pharmacopoeia limit and the analyzer that fits.



● YORK instrument ○ Integrated system (supplied through YORK)

How the process works

Hospitals make medical air on site and receive oxygen and CO_2 as liquid or produce oxygen with PSA units. Pharmacopoeia monographs set the limits that each gas must meet before it reaches patients.

1. **Compression.** Duty and standby compressors draw in air from a clean intake.
2. **Drying and filtration.** Aftercoolers, desiccant dryers and filters remove water, oil and particles.
3. **Oxygen supply.** Liquid oxygen is vaporised, or PSA units concentrate oxygen from air, and a manifold feeds the pipeline.
4. **Cylinders.** Medical oxygen and CO_2 are filled into cylinders and released after testing.

Interactive version with animation:
https://www.yorkinstrument.ae/guides/medical-gas-measurement-points/

Measurement points

#	POINT	MEASURES	TYPICAL VALUE / LIMIT	RECOMMENDED SOLUTION
1	Medical air plant outlet	Water	≤ 67 ppm (≈ −46 °C dew point at atmospheric pressure) in pharmacopoeia monographs	DPT810, DM9600
2	Medical air plant outlet	Oxygen	19.5–23.5 %	POA3500, POA300
3	Medical air plant outlet	Carbon dioxide	≤ 500 ppm	PGA520
4	Medical air plant outlet	CO, SO_2, NO + NO_2, oil	CO ≤ 5 ppm; SO_2 ≤ 1 ppm; NO + NO_2 ≤ 2 ppm; oil ≤ 0.1 ppm	Integrated system: electrochemical or NDIR CO, chemiluminescence NOx and oil-vapour monitoring
5	Medical oxygen manifold	Oxygen assay	≥ 99.0 % for medical oxygen	POA3500
6	Medical oxygen manifold / cylinder filling	Water and CO_2	H_2O ≤ 67 ppm; CO_2 ≤ 300 ppm	DPT830, DPT-600 Plus, PGA520
7	Medical CO_2 cylinder filling	CO_2 purity and water	≥ 99.0 %; H_2O ≤ 67 ppm	DPT830; Integrated system: CO_2 assay analyzer (NDIR or GC) for the ≥ 99.0 % purity test

Typical values from published standards, regulations and technical literature. Your contract, licensor or plant specification always governs. Integrated systems are supplied by YORK through its partner integration factory.

Key references

1. Farmacopeia Brasileira, 7th edition, Vol. II: Medical Gases — ANVISA