Sensor Critical Ranges Table

Sensor	Range	Classification	Remarks
Soil pH	< 5.5	Low (Strongly Acidic)	Poor nutrient availability
Soil pH	5.5 - 7.5	Normal (Ideal)	Ideal for most crops
Soil pH	> 7.5	High (Alkaline)	Nutrients locked out
Nitrogen (N)	0 - 50 ppm	Low	Deficiency in leafy growth
Nitrogen (N)	51 - 200 ppm	Normal	Ideal N supply
Nitrogen (N)	> 200 ppm	High	May cause excessive vegetative growth
Phosphorus (P)	0 - 20 ppm	Low	Weak root & flower dev.
Phosphorus (P)	21 - 60 ppm	Normal	Ideal P levels
Phosphorus (P)	> 60 ppm	High	Possible nutrient lockout
Potassium (K)	0 - 100 ppm	Low	Weak stress resistance
Potassium (K)	101 - 250 ppm	Normal	Balanced K level
Potassium (K)	> 250 ppm	High	Over-fertilization risk
Soil Moisture	0 - 30%	Low (Dry)	Needs watering
Soil Moisture	31 - 55%	Normal (Moist)	Ideal moisture
Soil Moisture	> 55%	High (Wet)	Risk of root rot
Temperature (°C)	< 18°C	Low (Cold)	Slows crop growth
Temperature (°C)	18 - 30°C	Normal (Ideal)	Optimal for most crops
Temperature (°C)	> 30°C	High (Hot)	May damage plants
Humidity (%)	< 40%	Low (Dry air)	Wilting risk
Humidity (%)	40 - 70%	Normal (Ideal)	Ideal air humidity
Humidity (%)	> 70%	High (Too moist)	Fungal disease risk