

Non-Dispersive Infrared (NDIR) Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Type (Fixed, Portable), By Application (Automotive & Transportation, Chemicals, Oil & Gas, Healthcare, Industrial & Manufacturing, Environmental, Food Processing & Storage, Other), By Gas Type (Carbon Dioxide, Hydrocarbons, Refrigerant Gases, Sulfur Hexafluoride, Carbon Monoxide, Anesthetic Gases, Other), By Region, By Competition, 2020-2030F

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Abstracts

Market Overview

The Global Non-Dispersive Infrared (NDIR) Market was valued at USD 650.9 million in 2024 and is projected to reach USD 969.2 million by 2030, expanding at a CAGR of 6.7% during the forecast period. This growth is primarily driven by heightened environmental awareness and the growing demand for accurate gas detection technologies across various sectors. Stringent government regulations aimed at controlling emissions and ensuring air quality have accelerated the adoption of NDIR sensors in applications such as HVAC systems, environmental monitoring, and smart building infrastructure. Additionally, the automotive sector utilizes NDIR sensors for air quality and exhaust monitoring, while the healthcare industry incorporates them into respiratory and anesthesia devices. Ongoing advancements in sensor miniaturization and cost reduction are fostering widespread use in consumer electronics and IoT devices. Furthermore, industries like food and beverage are increasingly relying on

NDIR for cold chain and quality control, underscoring the technology's expanding role in sustainable, efficient, and compliant operations.

Key Market Drivers

Rising Demand for Air Quality Monitoring and Environmental Regulations

The rising global demand for air quality monitoring is a major driver for the Non-Dispersive Infrared (NDIR) sensor market. With governments enforcing stricter emissions standards to combat pollution and climate change, industries are under pressure to deploy accurate and reliable gas detection systems. NDIR sensors, known for their precision, stability, and low maintenance requirements, are ideal for monitoring harmful gases such as CO₂, CH₄, NO_x, and CO in industrial, urban, and indoor environments. Their operational capability without oxygen makes them suitable for confined and harsh settings. Initiatives like smart cities in North America, Europe, and Asia-Pacific are incorporating NDIR sensors into infrastructure systems including transportation and commercial buildings, further boosting adoption.

Key Market Challenges

High Initial Cost and Integration Challenges in Cost-Sensitive Applications

A notable challenge for the global NDIR sensor market is the relatively high upfront cost compared to other gas sensing technologies like electrochemical or metal oxide sensors. Although NDIR offers long-term benefits including superior accuracy and durability, the initial investment can be a barrier, especially for cost-sensitive sectors and emerging economies. This is particularly relevant for large-scale deployments in consumer electronics, automotive applications, and budget-constrained environmental monitoring. Small and medium-sized enterprises may struggle with integration costs and lack the expertise required for complex sensor systems, particularly when miniaturization or low-power operation is necessary. These constraints slow market penetration, particularly in regions with limited access to advanced sensor technologies.

Key Market Trends

Integration of NDIR Sensors into Smart and IoT-Enabled Devices

A leading trend in the NDIR sensor market is their growing integration into smart and IoT-enabled devices. As adoption of smart technologies expands across residential,

commercial, and industrial settings, there is increased demand for compact and efficient gas detection systems. NDIR sensors are being incorporated into HVAC systems, smart thermostats, and air purifiers for real-time air quality control and energy optimization. The pandemic has heightened focus on indoor air quality, further accelerating this trend. In industrial environments, NDIR sensors play a vital role in emissions monitoring and predictive maintenance, aligning with Industry 4.0 initiatives. Integrated with edge devices and cloud platforms, these sensors enable remote analytics and contribute to safer, more efficient operational environments.

Key Market Players

Senseair AB

Yokogawa Electric Corporation

Amphenol Advanced Sensors

Dynament Ltd.

SGX Sensortech

Amphenol Corporation

Honeywell International Inc.

AMS AG

Report Scope:

In this report, the Global Non-Dispersive Infrared (NDIR) Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Non-Dispersive Infrared (NDIR) Market, By Type:

Fixed

Portable

Non-Dispersive Infrared (NDIR) Market, By Application:

Automotive & Transportation

Chemicals

Oil & Gas

Healthcare

Industrial & Manufacturing

Environmental

Food Processing & Storage

Other

Non-Dispersive Infrared (NDIR) Market, By Gas Type:

Carbon Dioxide

Hydrocarbons

Refrigerant Gases

Sulfur Hexafluoride

Carbon Monoxide

Anesthetic Gases

Other

Non-Dispersive Infrared (NDIR) Market, By Region:

North America

United States

Canada

Mexico

Europe

Germany

France

United Kingdom

Italy

Spain

Asia Pacific

China

India

Japan

South Korea

Australia

South America

Brazil

Colombia

Argentina

Middle East & Africa

Saudi Arabia

UAE

South Africa

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Non-Dispersive Infrared (NDIR) Market.

Available Customizations:

Global Non-Dispersive Infrared (NDIR) Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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