

## **Asia-Pacific Tunable Diode Laser Analyzer Market Forecast to 2028 - COVID-19 Impact and Regional Analysis**

Market Report | 2022-10-11 | 152 pages | The Insight Partners

### **AVAILABLE LICENSES:**

- Single User Price \$3000.00
- Site Price \$4000.00
- Enterprise Price \$5000.00

### **Report description:**

The APAC tunable diode laser analyzer market is expected to grow from US\$ 197.05 million in 2022 to US\$ 317.98 million by 2028; it is estimated to grow at a CAGR of 8.3% from 2022 to 2028.

Rising Demand in Municipal Waste Incinerators and Oil and Gas Applications

Mixed waste is incinerated in municipal waste incinerators (MWI), and the energy generated is used for district heating or power generation. As the humidity of the fuel burned varies, it is critical to keep track of the water vapor in the furnace in real-time. If the fuel is completely burned out, the combustion is efficient, and if too much air is fed into the combustion zone, unnecessary cooling occurs, resulting in lower power generation. Increased Nitrogen oxides (NOx) emissions are also linked to excess air. However, if the plant is operated in an oxygen-deficient environment, Carbon dioxide (CO2) emissions will increase. As a result, optimizing and continuously monitoring the amount of excess air is critical for maintaining an optimal combustion process. In situ oxygen concentration measurements have proven useful for optimizing the combustion process by using tunable diode laser analyzers in the hot combustion zone. Therefore, this is now one of the most common uses for tunable diode laser analyzers in the power industry. The technology rapidly replaces the older zirconia oxide (ZrO2) probes used earlier in the MWI plants.

De-nitrification reduction processes remove nitrogen oxides from flue gas and convert nitrogen oxides to nitrogen and water; ammonia or urea is used as a reducing agent. The amount of Ammonia (NH3) used must be sufficient to reduce NOx effectively. However, a large amount of unused NH3 or ammonia should not be allowed to leak downstream in the process. Therefore, the tunable diode laser analyzer in-situ monitoring capability resulted in more accurate and faster NH3 slip measurements. MWI plants have been forced to remove hydrogen chloride (HCl) from flue gases due to increased environmental concerns and regulatory demands. The flue gases are cleaned with hydrated lime in a baghouse filter to reduce HCl emissions. Tunable diode laser analyzers are used to monitor HCl concentrations before and after the baghouse filter. The concentration of HCl in the raw gas before the filter controls the injection of new or re-circulated lime, and the analyzer after the filter verifies the levels emitted from the plant. The removal process is made more efficient, and lime consumption is reduced by using in situ monitoring of the HCl concentration. Reliable process data is directly related to product quality, plant safety, and resource efficiency. As a result,

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process analytics is an essential component of any modern chemical plant. Process analytical systems are required to provide precise information about product streams' composition, concentration, and purity. Gas chromatographs, infrared gas analyzers, and oxygen paramagnetic measurement analyzers are the analytic tools used. Accurate measuring results are required in any environment, whether under corrosive operating conditions or hazardous areas. Tunable diode laser analyzer technology is still in its early stages of adoption in the chemical and oil & gas industries. However, the technology is quickly gaining traction in certain applications where the TDL's selectivity and quick response time are critical. In the chemical industry, oxygen monitoring is especially important. When oxygen is used in a chemical reaction, its concentration must be kept under control to avoid explosive atmospheres. Safety monitoring is also important in chemical storage facilities. Competing technologies, such as paramagnetic sensors or ZrO<sub>2</sub> sensors, face challenges because the environment can contain various gases, many of which are flammable, resulting in large measurement errors. The potential to increase the efficiency and reduce the maintenance of the plants will make tunable diode laser analyzer adoption necessary, thereby driving the market growth across the region.

## Market Overview

The APAC Trade Agreement (APTA), formerly known as the Bangkok Agreement, is a preferential regional trade agreement. The adoption of the APAC Trade Agreement (APTA) mutually beneficial trade liberalization measures the contribution to regional trade expansion, and economic cooperation aims to promote its members' economic development. It shifted its focus over time, from initial tariff concessions on merchandise trade to current negotiations on investment, services trade, and trade facilitation. India is part of these agreements; thus, there are opportunities for the vendors operating in the tunable diode laser analyzer market. In China, South Korea, and Japan, with the adoption of smart "Smart Manufacturing" or "Industry 4.0," a significant increase in flexibility in enhancing the manufacturing facility and the adoption of process automation technologies is further increasing the production. Emerging countries such as India and China are growing process automation in various industries and favorable government policies such as "Made in China 2025, Make in India, Production-linked incentive (PLI) scheme, and SAMARTH Udyog Bharat 4.0. In 2021, The Indian Ministry of Heavy Industries announced the launch of the Samarth Udyog Bharat 4.0 initiative, which aims to accelerate the adoption of process automation and innovative technologies in India's manufacturing sector by the end of 2025. These government initiatives are supporting the growth of the manufacturing production facilities, positively impacting the tunable diode laser analyzer market in the APAC. The demand for industrial robots in various process manufacturing facilities is increasing, and with the rising urbanization, many manufacturing production plants are planning to expand their footprints domestically and internationally. Thus, with the establishment of new manufacturing production plants, the demand for tunable diode laser analyzers is also increasing.

## APAC Tunable Diode Laser Analyzer Market Revenue and Forecast to 2028 (US\$ Million)

### APAC Tunable Diode Laser Analyzer Market Segmentation

The APAC tunable diode laser analyzer market is segmented based on measurement type, gas analyzer type, industry application, and country.

Based on measurement type, the APAC tunable diode laser analyzer market is bifurcated into in-situ and extractive. The in-situ segment held a larger market share in 2022.

Based on gas analyzer type, the APAC tunable diode laser analyzer market is segmented into oxygen analyzer, ammonia analyzer, CO<sub>x</sub> analyzer, moisture analyzer, H<sub>x</sub> analyzer, C<sub>x</sub>H<sub>x</sub> analyzer, and others. The oxygen analyzer segment dominated the market in 2022.

Based on industry application, the APAC tunable diode laser analyzer market is segmented into power, oil & gas, mining & metal, chemicals, fertilizers, cement, and others. The oil & gas segment dominated the market in 2022.

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Based on country, the APAC tunable diode laser analyzer market is segmented into China, India, Japan, South Korea, Australia, and rest of APAC. China dominated the market in 2022.

ABB Ltd, Axetris AG, Boreal Laser Inc, Emerson Electric Co., METTLER TOLEDO, NEO Monitors AS, Siemens AG, Teledyne Analytical Instruments, Unisearch Associates Inc, and Yokogawa Electric Corporation are among the leading companies in the APAC tunable diode laser analyzer market.

## **Table of Contents:**

### TABLE OF CONTENTS

1. Introduction
  - 1.1 Study Scope
  - 1.2 The Insight Partners Research Report Guidance
  - 1.3 Market Segmentation
2. Key Takeaways
3. Research Methodology
  - 3.1 Coverage
  - 3.2 Secondary Research
  - 3.3 Primary Research
4. APAC Tunable Diode Laser Analyzer Market Landscape
  - 4.1 Market Overview
  - 4.2 APAC PEST Analysis
  - 4.3 Ecosystem Analysis
  - 4.4 Expert Opinions
5. APAC Tunable Diode Laser Analyzer Market - Key Market Dynamics
  - 5.1 Market Drivers
    - 5.1.1 Rising Demand for Energy is Resulting in New Power Plants Setups
    - 5.1.2 Rising Awareness Regarding Green Sustainability Resulting in Increasing Government's Stringent Safety Standards
  - 5.2 Market Restraints
    - 5.2.1 Availability of Low-Price Competitive Technologies
  - 5.3 Market Opportunities
    - 5.3.1 Modernization and Migration Services of Upgrading Old Industries to Automate Process Industries
  - 5.4 Future Trends
    - 5.4.1 Rising Demand in Municipal Waste Incinerators and Oil and Gas Applications
  - 5.5 Impact Analysis of Drivers and Restraints
6. Tunable Diode Laser Analyzer Market - APAC Analysis
  - 6.1 APAC Tunable Diode Laser Analyzer Market Overview
  - 6.2 APAC Tunable Diode Laser Analyzer Market Revenue Forecast and Analysis
7. APAC Tunable Diode Laser Analyzer Market Analysis - By Measurement Type
  - 7.1 Overview
  - 7.2 APAC Tunable Diode Laser Analyzer Market, By Measurement Type (2021 and 2028)
  - 7.3 In-Situ
    - 7.3.1 Overview
    - 7.3.2 In-Situ: Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
  - 7.4 Extractive
    - 7.4.1 Overview

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- 7.4.2 Extractive: Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
- 8. APAC Tunable Diode Laser Analyzer Market Analysis - By Gas Analyzer Type
  - 8.1 Overview
  - 8.2 APAC Tunable Diode Laser Analyzer Market, By Gas Analyzer Type (2021 and 2028)
  - 8.3 Oxygen Analyzer
    - 8.3.1 Overview
    - 8.3.2 Oxygen Analyzer: Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
  - 8.4 Ammonia Analyzer
    - 8.4.1 Overview
    - 8.4.2 Ammonia Analyzer: Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
  - 8.5 COx Analyzer
    - 8.5.1 Overview
    - 8.5.2 COx Analyzer: Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
  - 8.6 Moisture Analyzer
    - 8.6.1 Overview
    - 8.6.2 Moisture Analyzer: Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
  - 8.7 Hx Analyzer
    - 8.7.1 Overview
    - 8.7.2 Hx Analyzer: Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
  - 8.8 CxHx Analyzer
    - 8.8.1 Overview
    - 8.8.2 CxHx Analyzer: Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
  - 8.9 Others Analyzer
    - 8.9.1 Overview
    - 8.9.2 Others Analyzer: Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
- 9. APAC Tunable Diode Laser Analyzer Market Analysis - By Industry Application
  - 9.1 Overview
  - 9.2 APAC Tunable Diode Laser Analyzer Market, By Industry Application (2021 and 2028)
  - 9.3 Power
    - 9.3.1 Overview
    - 9.3.2 Power: Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
  - 9.4 Oil and Gas
    - 9.4.1 Overview
    - 9.4.2 Oil and Gas: Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
  - 9.5 Mining & Metal
    - 9.5.1 Overview
    - 9.5.2 Mining & Metal: Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
  - 9.6 Chemicals
    - 9.6.1 Overview
    - 9.6.2 Chemicals: Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
  - 9.7 Fertilizers
    - 9.7.1 Overview
    - 9.7.2 Fertilizers: Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
  - 9.8 Cement
    - 9.8.1 Overview
    - 9.8.2 Cement: Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
  - 9.9 Others

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- 9.9.1 Overview
- 9.9.2 Others: Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
- 10. APAC Tunable Diode Laser Analyzer Market - Country Analysis
  - 10.1 Overview
    - 10.1.1 APAC Tunable Diode Laser Analyzer Market Breakdown, by Country
      - 10.1.1.1 Australia Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
        - 10.1.1.1.1 Australia Tunable Diode Laser Analyzer Market Breakdown, By Measurement Type
        - 10.1.1.1.2 Australia Tunable Diode Laser Analyzer Market Breakdown, By Gas Analyzer Type
        - 10.1.1.1.3 Australia Tunable Diode Laser Analyzer Market Breakdown, By Industry Application
      - 10.1.1.2 China Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
        - 10.1.1.2.1 China Tunable Diode Laser Analyzer Market Breakdown, By Measurement Type
        - 10.1.1.2.2 China Tunable Diode Laser Analyzer Market Breakdown, By Gas Analyzer Type
        - 10.1.1.2.3 China Tunable Diode Laser Analyzer Market Breakdown, By Industry Application
      - 10.1.1.3 India Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
        - 10.1.1.3.1 India Tunable Diode Laser Analyzer Market Breakdown, By Measurement Type
        - 10.1.1.3.2 India Tunable Diode Laser Analyzer Market Breakdown, By Gas Analyzer Type
        - 10.1.1.3.3 India Tunable Diode Laser Analyzer Market Breakdown, By Industry Application
      - 10.1.1.4 Japan Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
        - 10.1.1.4.1 Japan Tunable Diode Laser Analyzer Market Breakdown, By Measurement Type
        - 10.1.1.4.2 Japan Tunable Diode Laser Analyzer Market Breakdown, By Gas Analyzer Type
        - 10.1.1.4.3 Japan Tunable Diode Laser Analyzer Market Breakdown, By Industry Application
      - 10.1.1.5 South Korea Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
        - 10.1.1.5.1 South Korea Tunable Diode Laser Analyzer Market Breakdown, By Measurement Type
        - 10.1.1.5.2 South Korea Tunable Diode Laser Analyzer Market Breakdown, By Gas Analyzer Type
        - 10.1.1.5.3 South Korea Tunable Diode Laser Analyzer Market Breakdown, By Industry Application
      - 10.1.1.6 Rest of APAC Tunable Diode Laser Analyzer Market - Revenue and Forecast to 2028 (US\$ Million)
        - 10.1.1.6.1 Rest of APAC Tunable Diode Laser Analyzer Market Breakdown, By Measurement Type
        - 10.1.1.6.2 Rest of APAC Tunable Diode Laser Analyzer Market Breakdown, By Gas Analyzer Type
        - 10.1.1.6.3 Rest of APAC Tunable Diode Laser Analyzer Market Breakdown, By Industry Application
- 11. Industry Landscape
  - 11.1 Overview
  - 11.2 New Product launch
- 12. Company Profiles
  - 12.1 Emerson Electric Co.
    - 12.1.1 Key Facts
    - 12.1.2 Business Description
    - 12.1.3 Products and Services
    - 12.1.4 Financial Overview
    - 12.1.5 SWOT Analysis
    - 12.1.6 Key Developments
  - 12.2 Siemens AG
    - 12.2.1 Key Facts
    - 12.2.2 Business Description
    - 12.2.3 Products and Services
    - 12.2.4 Financial Overview
    - 12.2.5 SWOT Analysis
    - 12.2.6 Key Developments

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- 12.3 ABB Ltd
  - 12.3.1 Key Facts
  - 12.3.2 Business Description
  - 12.3.3 Products and Services
  - 12.3.4 Financial Overview
  - 12.3.5 SWOT Analysis
  - 12.3.6 Key Developments
- 12.4 METTLER TOLEDO
  - 12.4.1 Key Facts
  - 12.4.2 Business Description
  - 12.4.3 Products and Services
  - 12.4.4 Financial Overview
  - 12.4.5 SWOT Analysis
  - 12.4.6 Key Developments
- 12.5 Teledyne Analytical Instruments
  - 12.5.1 Key Facts
  - 12.5.2 Business Description
  - 12.5.3 Products and Services
  - 12.5.4 Financial Overview
  - 12.5.5 SWOT Analysis
  - 12.5.6 Key Developments
- 12.6 Yokogawa Electric Corporation
  - 12.6.1 Key Facts
  - 12.6.2 Business Description
  - 12.6.3 Products and Services
  - 12.6.4 Financial Overview
  - 12.6.5 SWOT Analysis
  - 12.6.6 Key Developments
- 12.7 Unisearch Associates Inc
  - 12.7.1 Key Facts
  - 12.7.2 Business Description
  - 12.7.3 Products and Services
  - 12.7.4 Financial Overview
  - 12.7.5 SWOT Analysis
  - 12.7.6 Key Developments
- 12.8 NEO Monitors AS
  - 12.8.1 Key Facts
  - 12.8.2 Business Description
  - 12.8.3 Products and Services
  - 12.8.4 Financial Overview
  - 12.8.5 SWOT Analysis
  - 12.8.6 Key Developments
- 12.9 Axetris AG
  - 12.9.1 Key Facts
  - 12.9.2 Business Description
  - 12.9.3 Products and Services
  - 12.9.4 Financial Overview

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- 12.9.5 SWOT Analysis
- 12.9.6 Key Developments
- 12.10 Boreal Laser Inc
  - 12.10.1 Key Facts
  - 12.10.2 Business Description
  - 12.10.3 Products and Services
  - 12.10.4 Financial Overview
  - 12.10.5 SWOT Analysis
  - 12.10.6 Key Developments
- 13. Appendix
  - 13.1 About The Insight Partners
  - 13.2 Word Index

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