EXHIBIT 16

Quotation and Scope Of Work

3041 South Orange Avenue, Santa Ana, CA 92707 888-400-0200
2849 Sterling Drive, Hatfield, PA 19440 800-582-1670
Houston, TX 281-729-8228

For Questions contact Michelle Nelson at mnelson@cemteks.com or 714-904-9087
or Gary Cacciatore at GCacciatore@cemteks.com or 714-904-0767

Date: March 17, 2026
Quote No: CCC220407-1 **Rev3**

To: Carson Hybrid Energy
Attn: Albert Dietz
Re: Budgetary CEMS Upgrade Quote Hybrid Energy Storage Facility. Project located in Carson, CA.

Item #	Qty	Quotation Description	Price
1	-	**- Two (2) LaserCEM for stack and inlet, mounted in existing enclosure, for monitoring NOx, CO, O_2, H2O for compliance.** **- One (1) Data Acquisition and Handling Systems (DAHS) for regulatory reporting per USEPA 40 CFR Part 75, and SCAQMD;**	
1-A	-	**Stack CEMS:**	
1-A-1	-	**Sample system:**	
	1	Multipoint Probe, includes two (2) probe tubes with eight (8) points on each probe, 3" ANSI flange with each axis offset by 6-8" in vertical plane, fused silica coating on sample tubes, fast loop educator, heated jumper lines, and manifold system	
	90	Ft, four (4) tube heated sample line, cut to length in field, (2) 3/8" 316SS line for sample and spare, (1) 3/8" PFA for purge, and (1) 1/4" 316SS for cal gas. Self-regulated heat trace with maintenance temperature of 80 degC, PT1000 temperature sensor - Power and signal wires included in bundle. **- 90 feet long per sample line** **- Pre-terminated sample line ends, both probe and CEMS finished ends. The customer is responsible for confirming sample line length.**	
	1	Kit Circuit Fabrication	
	1	Termination Seal Kit	
	2	Bulkhead Entry Kit	
	1	Lot, GFEP circuit breakers for heated probe filter and sample line - NEC requires GFEP (Ground fault equipment protection) circuit breakers for heat tracing.	
	1	Temperature controller and solid state relays for probe filter	
	1	Flow panels, Includes: - Air pressure and vacuum gauges	

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Item #	Qty	Quotation Description	Price
1-A-2	-	**Analyzer for Stack CEMS:**	
	1	**LaserCEM® Analyzer for measurement of NO, NO2, (NOx), CO, O2, and H2O (Configuration D)** - Low pressure sampling - External variable speed vacuum pump - Ethernet Modbus TCP/IP comm port - USB comm port for data recovery - (4) 4-20mA analog outputs and (5) alarm relays - Large pump module <u>Measurement Ranges</u>: - NO: 0-10ppm, 0-200ppm - NO2: 0-10ppm, 0-200ppm - CO: 0-10ppm, 0-200 ppm - O2: 0-25% - H2O: 0-25%	
	1	Stack flow by calculation, utilizing certified fuel flow meters and fuel factors.	
1-B	-	**Inlet CEMS:**	
1-B-1	-	**Sample system:**	
	1	Sample probe, heated filter housing, 2 micron filter, T/C type K for remote temperature control, calibration gas injection, blowback with 2 litter accumulator, sample gas return port through flange, bypass eductor with pre-heat, fabricated to close couple with probe head, 4" ANSI 150lb flange with 5ft 316 SST probe tube for maximum temperature of 1000degF, NEMA4X fiberglass enclosure, M&C SP2020-H/C/I/BB-F	

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	95	Ft, four (4) tube heated sample line, cut to length in field, (2) 3/8" 316SS line for sample and spare, (1) 3/8" PFA for purge, and (1) 1/4" 316SS for cal gas. Self-regulated heat trace with maintenance temperature of 80 degC, PT1000 temperature sensor - Power and signal wires included in bundle. **- 95 feet long per sample line** **- Pre-terminated sample line ends, both probe and CEMS finished ends. The customer is responsible for confirming sample line length.**	
	1	Kit Circuit Fabrication	
	1	Termination Seal Kit	
	2	Bulkhead Entry Kit	
	1	Lot, GFEP circuit breakers for heated probe filter and sample line - NEC requires GFEP (Ground fault equipment protection) circuit breakers for heat tracing.	
	1	Temperature controller and solid state relays for probe filter	
	1	Flow panels, Includes: - Air pressure and vacuum gauges	
1-B-2	-	**Analyzer for Inlet CEMS:**	
	1	**LaserCEM® Analyzer for measurement of NO, NO2, (NOx), and H2O (Configuration A)** - Low pressure sampling - External variable speed vacuum pump - Ethernet Modbus TCP/IP comm port - USB comm port for data recovery - (4) 4-20mA analog outputs and (5) alarm relays - Large pump module <u>Measurement Ranges</u>: - NO: 0-10ppm, 0-200ppm - NO2: 0-10ppm, 0-200ppm - H2O: 0-25%	

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Item #	Qty	Quotation Description	Price
1-C	-	**Enclosure:**	
	1	NEMA 4, Steel, Powder Coated Light Gray, dual bay cabinet 60" W x 36" D x 72" H, with 10,000 BTU AC - Includes a General Purpose load center	
	2	Electrical panel, includes 24VDC power supply, push button and selector switches, enclosure temperature monitor, relays, terminal blocks, wireway	
	1	NetGear Ethernet switches	
	1	Rack mounted UPS for system controllers and analyzers, 3,000 VA with 5 minute battery run-time.	
	2	Lot, tags	
1-D		**Calibration system**	
	1	Calibration gas manifold with solenoid valves for daily & quarterly audits	
	2	Two Stage Stainless Steel cal gas regulator, with a check valve, for NOx daily cal gas cylinders	
	2	Two Stage Brass cal gas regulator for CO, O2, N2 daily cal gas cylinders	
	-	**Reuse existing quarterly regulator and cylinder racks.**	
1-E	-	**System Controller**	
	1	Cemtek/KVB-Enertec SEAL controller, 7-inch custom-driven touch screen interface HMI, Intel Processor, Windows 11 LTSC, 8AI (Isolated), 8AI (non-isolated), 32DI, 32DO, 16AO, Modbus TCP/IP interface, Ethernet communication	
	1	LED Monitor for SEAL controller, 15.6" LCD Screen, 1280x800 HD resolution, includes mounting bracket, keyboard, and a sliding shelf	
	1	SEAL Barcode Cylinder Scanner for Management of Calibration Gas Cylinders	

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Item #	Qty	Quotation Description	Price
1-F	-	**Data Acquisition and Handling System (DAHS):**	
		- CEMS to utilize existing DAHS	
	1	Update existing NetDAHS software on existing NetDAHS Server: Cemtek/KVB-Enertec NetDAHS, Data Acquisition and Handling System for USEPA 40CFR75/60, and local regulatory reporting - Includes configuration of part 75 Monitoring Plan and EDR - Include Web server interface for remote access, with custom setup security user administration	
1-G	-	**Documentation:**	
	1	USEPA 40CFR 75 Monitoring Plan preparation and evaluation through ECMPS/Client Tool. - The plant owner must add a Cemtek Environmental Manager with "Preparer" rights in the ECMPS 2.0 system. This will require the facility's Designated Representative (DR) or Alternate DR to grant this permission to Cemtek personnel. Obtaining Preparer rights to the facility will allow us to be able to view, create, and edit the facility's electronic monitoring plan.	
	1	USEPA 40CFR75/60 Quality Assurance Plan Documentation	
	1	SCAQMD ST220, CEMS application preparation for customer to submit.	
	1	CEMS O&M manual hard copy & electronic copy	
	2	Days, Factory Acceptance Test at Cemtek facility	
	1	Lot, packing	
		Equipment subtotal:	**$** [redacted]

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Item #	Qty	Quotation Description	Price
2		**Field Services (Estimated, to be billed at actual Time & Materials per rate sheet)**	
2-A	-	**Start-up, Commissioning, and Training:**	
	1	Installation, scope of work includes: Cabinet: - Removal and disposal of existing CEMS cabinet and internal equipment unless otherwise specified. - Identify and label all existing power, IO and support conductors prior to disconnecting. - Install new 30” X 60” CEMS cabinet and anchor to existing concrete slab - Reroute existing conduit and power, IO and support conductors as needed and terminate connections inside CEMS cabinet. - Reconnect Calgas bottles and leak check. Stack: - Removal and disposal of existing sample line, probe box’s and probes - Install new sample line from cabinet to probe. - Install new multi point probe and jumpers. - Terminate and test sample line at probe and shelter end. Inlet: - Removal and disposal of existing inlet sample line, probe box and probe. - Install new sample line from cabinet to inlet probe. - Install new probe and probe box - Terminate and test sample line at probe and cabinet end.	
	2	Days, Installation Supervision (8-hour days)	
	7	Days, CEMS and NetDAHS Start-Up (8-hour days)	
	1	Day, CEMS training (8-hour day)	
	1	NetDAHS training (8-hour section)	

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Item #	Qty	Quotation Description	Price
2-B	-	**Certification support**	
	2	Days, linearity, response time, collection of 7-day drift data and RATA supervision	
	1	Lot, certification test protocol and reports for the above tests	
	-	**Supplied by Customer**, Subcontractor for a RATA test protocol, and gas RATA for NOx, CO, O2 - RATA test protocol and RATA test report are supplied by a RATA subcontractor	
	-	**Supplied by Customer**, onsite calibration gases for linearity, response time, and 7-day drifts	
		Field Services Subtotal (Included travel time and expenses):	**$** [redacted]
		Total Project:	**$** [redacted]
		Options: - To be added to the Purchase Order if needed - Option prices are valid only with Original PO. Option prices could be impacted after work has started for drawings and documentation	
3	1	Ft, additional sample line for LaserCEM	**$** [redacted]
4	1	Adder for NH3 slip monitoring, for process control	**$** [redacted]
	1	Calibration gas manifold with solenoid valves for daily calibration	
	1	Two Stage Stainless steel Regulator, Silco-coated, CGA705, for daily NH3 cal gas cylinder	
	1	NetDAHS software upate for NH3 process control, monitoring, and reporting	
	1	Installation of regulator and tubing for NH3 cal gas bottle to the cabinet	
	1	Day, NH3 CEMS Start-Up (8-hour days)	
5	1	Yearly 24/7 Hardware phone support contract: - Free for the first year after start-up; - $4,920 renewal annual contract	**$** [redacted]

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Item #	Qty	Quotation Description	Price
6	-	Annual NetDAHS Software support - First Year Premium Software Support Agreement, Complimentary During the First 12 Month Warranty Period	**No Charge**
7	1	Annual NetDAHS Software support for Part 75 - Premium Level DAHS Support	**$** [redacted]
		Technical Exceptions and Notes: - Customer to supply utilities, and operating calibration gases. - Customer to receive equipment delivery and store equipment in warehouse. CEMTEK will be responsible for moving equipment to instsallation location. - Customer to provide dumpsters for proper disposal and recycling of used equipment and general refuse. **- Customer to provide secured storage for tools, equipment and work trailer/vehicle if needed for duration of project.** - Customer to provide a remote access connection to the NetDAHS for remote support. This is required for software warranty, maintenance, and support. - Site permit, completed Application Data Sheet, and detailed specifications needed to confirm engineering design & pricing. - Start-up time based on completed install checklist being signed off before or upon arrival. Site delays will be billed at rate sheet.	

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Item #	Qty	Quotation Description	Price
		Commercial Notes: - Cemtek standard Terms and Conditions apply. - Delivery schedule: Equipment 20 - 24 weeks ARO, Drawings 10 - 12 weeks ARO. - Ex Works (EXW), Cemtek Factory, Freight & Loading prepay and add. - Hardware Warranty: Twelve (12) months from start-up, eighteen (18) months from shipment, whichever occurs first. - Software or Firmware Warranty: ninety (90) days from shipment - Applicable sales tax was not included on the total price. - Bid Validity: **Budgetary**	
		Payment Terms: Net 30 - 10% due upon award of contract - 25% due upon transmittal of engineering drawings - 35% Upon receipt of major material at CEMTEK factory - 30% due upon shipment - Field Services to be billed upon completion of each service	

CEMTEK
KVB-Enertec

Emissions Monitoring for Compliance and Process Improvement

CEM Systems, CEM Service, Opacity, Flow and CEMS Parts

888-400-0200 **www.cemteks.com**

West Coast Office
3041 S Orange Ave.
Santa Ana, CA 92707
714-437-7100 phone
714-904-4404 Emergency/After Hours
888-400-0200 Parts/Service
support@cemteks.com

East Coast Office
2849 Sterling Drive
Hatfield, PA 19440
215-996-9200 phone
800-582-1670 Tech support

Service Rate Sheet – Effective January 1, 2026

Service Description	Regular Rate*	Overtime Rate	Premium Rate
CEMS Service Technician	$ 230/hr	$ 350/hr	$ 465/hr
CEMS Service Technician – International Rate	$ 300/hr	$ 475/hr	$ 630/hr
In-House Bench Repair (Analyzers)	$ 230/hr	$ 350/hr	$ 465/hr
CEMS/NetDAHS Edge Engineer/Programmer	$ 300/hr	$ 475/hr	$ 630/hr
Mercury, Ammonia, TDL, FTIR, PM, HCl & HF Monitors Service Technician	$ 300/hr	$ 475/hr	$ 630/hr
Software Service or EDR Support	$300/hr	$475/hr	$630/hr
Training Services – CEMS Hardware Training	$ 2,600/day		
Training Services – Software, TDL, FTIR or Hg Training	$ 3,200/day		

Regular Rate:	First 8 hours worked between 7am and 5pm Mon – Fri
Overtime Rate:	>8hrs <12hrs worked per day Mon – Fri and all-day Sat
Premium Rate:	>12hrs worked per day and all-day Sunday & Holidays

* Regular rates apply to North America including Alaska & Hawaii but excludes all off-shore US territories & possessions (Guam, Puerto Rico, American Samoa, USVI & CNMI)

Hourly rates are charged based on the Technicians labor hours. This includes both travel time and onsite time. Travel and Living Expenses will be billed separately at cost plus 15%. Mileage is charged at $1.10 per mile. Eight-hour minimum charge on all services.

Per diem will be charged at $170 per day.

Insurance Certificate sent upon receipt of PO

GENERAL CONDITIONS OF SALE - CEMS EQUIPMENT

GENERAL: The following Terms and Conditions form part of this Proposal submitted by CEMTEK Environmental, Inc. DBA CEMTEK KVB-Enertec herein after called "**CEMTEK**" for the sale of Goods and/or Services to a Client/Customer/Owner herein after called "**Purchaser**". CEMTEK and Purchaser are each sometimes herein referred to individually as a "**Party**" and collectively as the "**Parties**". Therefore, any Contract made by and between the Parties shall constitute Purchaser's acceptance of these Terms and Conditions in its entirety. These Terms and Conditions shall supersede any preprinted terms on any of Purchaser's documents and may not be amended or modified without prior written consent of CEMTEK.

VALIDITY: Unless otherwise stated in this Proposal, this quotation is valid for thirty (30) days from the date issued by CEMTEK.

ACCEPTANCE: This Proposal is subject to acceptance by Purchaser within ninety (90) days from quotation date and shall constitute a binding agreement with CEMTEK only when thereafter approved by and signed by an authorized CEMTEK officer.

PRICING: Unless otherwise noted in CEMTEK's Proposal, equipment and material prices set forth in the Proposal are firm for delivery in accordance with the schedule therein. In the event the schedule is modified due to acts of Purchaser or conditions beyond CEMTEK's control and Contract costs escalate, an equitable adjustment to the Contract price shall be granted to CEMTEK.

TAXES: Sales tax, personal property tax, use tax, excise tax, or other taxes imposed by federal, state or municipal authority and incurred by CEMTEK through performance on the Contract shall be to Purchaser's account and are in addition to the prices quoted in the Proposal. CEMTEK shall not be responsible for any additional costs associated with Purchasers tax exemption certificate and the governing body's acceptance of same.

TARIFFS: Tariff surcharges are not included in the Proposal pricing. However, in the event tariff surcharges are/or become applicable, such tariff surcharges will be passed down and invoiced to Purchaser at actual costs

PAYMENT: Purchaser unconditionally warrants that it owes CEMTEK the monies agreed upon for all work performed and for all Contractual obligations met. Progress billings issued during the course of the job will be due and payable in accordance with the terms of this agreement.

TERMS OF PAYMENT: Payments are due net thirty (30) days from the invoice date. Payments not received by CEMTEK by the due date shall be subject to an interest charge at the rate of .07% per day overdue or the maximum allowed by law, whichever is less, until such payment is received.

PAYMENT SCHEDULE FOR ORIGINAL EQUIPMENT: Progress payments as a percentage of the total Contract price shall be as follows unless otherwise stated in quotation:

10% Upon award of Contract
25% Upon transmittal of engineering drawings
35% Upon receipt of major materials at CEMTEK facilities
30% Upon shipment of equipment
Field Services to be invoiced upon completion of each service

DEFAULT IN PAYMENT: If any payment due to CEMTEK is more than thirty (30) days past the due date, CEMTEK shall have the right, at its sole option, to accelerate the payment of all outstanding amounts owed, including, but not limited to, previously retained amounts, if any, pursuant to the agreement, by notifying Purchaser in writing that all outstanding amounts owed are immediately due and payable and presenting Purchaser with an invoice for said amount. CEMTEK shall also have the right in such event to discontinue all work on the project without incurring any liability to Purchaser for such action.

The foregoing remedies of CEMTEK are in addition to all other remedies CEMTEK may have at law or in equity, including but not limited to the right to obtain liens on Purchaser's assets through legal or equitable proceedings.

SECURITY AGREEMENTS: Purchaser hereby grants to CEMTEK a security interest in the equipment and/or materials sold here under to secure the purchase price of same. Purchaser shall execute any financing or other statements or filings which in CEMTEK's sole judgment are necessary or appropriate to evidence or perfect such security interest, which shall thereafter be filed by Purchaser with the appropriate recording officer. This Contract shall constitute the security agreement between the parties and is intended to and shall afford to CEMTEK all rights of a secured party under Article 9 of the *Uniform Commercial Code*.

Until Purchaser has paid the full amount due and owing for any equipment or materials purchased hereunder, Purchaser shall be prohibited from transferring such equipment or materials to any creditor of Purchaser other than CEMTEK unless CEMTEK provides its prior written consent to such transfer, such consent not to be unreasonably withheld.

In the event Purchaser becomes insolvent, files for bankruptcy or goes into receivership or liquidation, Purchaser agrees to use its best efforts and to provide all assistance requested by CEMTEK in order to secure CEMTEK's position as a preferred creditor with respect to all amounts due to CEMTEK.

SHIPPING: Unless otherwise specified, all shipments within the U.S. shall be Prepay & Add in accordance with Incoterms 2020.

TITLE: Title to all equipment shall pass to Purchaser at the FOB point or points of shipment and risk of loss will thereafter be borne by Purchaser.

STORAGE: If Purchaser declines or is unable to take delivery at the time(s) specified in the Proposal or Contract, CEMTEK will have the equipment stored at Purchaser's risk and account, and the materials shall be considered "shipped-in-place." CEMTEK shall offer thirty (30) days of complimentary storage once, after thirty (30) days, storage charges will apply and shall be invoiced to Purchaser.

EARLY DELIVERY: CEMTEK shall not be subject to penalties for early shipment if such shipment is accepted by Purchaser, such acceptance not to be unreasonably withheld.

FORCE MAJEURE: In the event of delays or damages due to conditions beyond CEMTEK's reasonable control, including, but not limited to, acts of God, acts of Purchaser or Purchaser's customer or of other Contractor's engaged by Purchaser, Acts of Civil or Military Authority, priorities, fire, strikes, earthquakes, floods, epidemics, quarantine restrictions, government actions, war, riot, delays in transportation, car shortages, and CEMTEK's inability to obtain necessary labor, materials or manufacturing facilities, the Contract dates shall be extended by an equitable period of time and CEMTEK shall be entitled to an equitable adjustment in the Contract price.

MATERIAL WARRANTY: CEMTEK warrants that all Goods and Services: (i) conform to the kind, quality and capability designated or described by the Agreement and/or any associated Purchase Order or Contract; (ii) are free from latent and patent defects in design, materials, and workmanship; (iii) are suitable and adequate for the purposes for which they were designed and for other purposes, if any, specified in the Purchase Order or Contract; and Services shall be performed with due care, skill and diligence, in accordance with Applicable Law and applicable professional standards, industry and construction practices. CEMTEK warrants the Work and all Goods, including parts, equipment, materials and labor furnished under the Agreement to be as specified herein for the shorter period of twelve (12) months after any acceptance, startup, or productive use, or eighteen (18) months after shipment or the period of any original equipment manufacturer's warranty. Any and all original equipment manufacturer's warranties shall be and hereby are transferred to Company pursuant to the provisions and operation of the Agreement to the extent that original manufacturer permits such transfer. Any repairs or replacements furnished under this warranty shall be warranted for the longer of the original warranty period specified herein or ninety (90) days from such repair or replacement.

SOFTWARE/FIRMWARE WARRANTY: CEMTEK warrants that all CEMTEK software/firmware will meet the specifications as designated or described by the Agreement and/or any associated Purchase Order or Contract in effect on the date of shipment. CEMTEK warrants the CEMTEK software/firmware for a period of ninety (90) days from Shipment. All updates and upgrades will be supported for ninety (90) days after delivery, unless stated otherwise in a previously written Agreement.

Should any CEMTEK software/firmware not be in accordance with this warranty, then CEMTEK will repair, replace or modify the nonconforming CEMTEK software/firmware at CEMTEK's expense. CEMTEK must be notified within thirty (30) days of discovery of any observed defects. Upon evaluation, CEMTEK will in its sole discretion determine if the alleged defects are within the original scope of the Contract and correct the defects as appropriate.

Since software provided is complex and may exhibit defects under unusual circumstances, CEMTEK does not warrant the software shall be free from defects under all possible operating conditions.

Purchaser shall provide CEMTEK secure, remote access connection, including access to the operating and network environment, for all software support, maintenance, and/or warranty obligations free of charge. In the event Purchaser is unable or unwilling to provide CEMTEK secure, remote access connection for software support, maintenance and/or warranty obligations, then additional charges may be incurred and response time may be delayed. Furthermore, Purchaser shall be responsible for any additional costs resulting from the absence of a remote connection necessary for CEMTEK to perform the Work.

Purchaser agrees that any issues related to Purchaser's network shall be addressed directly with Purchaser's network provider. CEMTEK shall not be held liable for any downtime, interruptions, or failures related to the performance or non-performance of Purchaser's network. Purchaser shall indemnify and hold harmless CEMTEK from any claims, damages, or losses arising from or related to the performance or non-performance of Purchaser's network.

This warranty does not cover other warranted products, including but not limited to the computer operating system, the application enabler or the hardware and components comprising the operational base system.

CEMTEK reserves the right to make changes in the software in order to overcome unforeseen problems that may take place in the application to specified hardware and software or to meet basic performance objectives. The software is not warranted to run concurrently with other application programs.

CEMTEK software/firmware warranty is contingent upon the accuracy and complete disclosure of information known by Purchaser and will not apply if Purchaser's organization failed to provide or gave CEMTEK incorrect information which CEMTEK deems necessary for appropriate design or installation of the software.

SPARE PARTS WARRANTY: CEMTEK warrants that all spare parts will give satisfactory service for a period of ninety (90) days from shipment. CEMTEK shall, at its sole option, repair or replace any parts found to be defective within the warranty period. FOB point shall be at CEMTEK factory. Any replaced parts shall be warranted for ninety (90) days from repair or replacement. CEMTEK warrants that all consumable parts including but not limited to gaskets, seals and filters, are free from defects in materials and workmanship at the time of delivery and are adequate for the intended purpose for which they are supplied. No service life is warranted for consumable parts.

WARRANTY PROVISIONS: This warranty covers the cost of factory and on-site labor and replacement materials or components. Specifically excluded from the warranty is the price of travel labor and travel and per diem costs to or at Purchaser site from CEMTEK's factory which shall be billed at CEMTEK's current rate sheet as to labor prices and cost plus 10% as to travel and per diem costs.

Any warranty claim is contingent on the return of any defective materials or components requested by CEMTEK FOB CEMTEK's facility. Replacement materials or components supplied under any warranty claim shall be delivered freight prepaid by CEMTEK.

This warranty is contingent on the proper operation and maintenance of the equipment in accordance with CEMTEK's Operation & Maintenance Manuals which includes the keeping of maintenance and repair logs. CEMTEK shall have the right to inspect such logs pursuant to any warranty claim. This warranty is also contingent upon the timely reporting of a claim by Purchaser or successor owner/operator.

CEMTEK shall be released from obligations under this warranty as the result of any unauthorized repairs or modifications made by Purchaser or third parties without the express written permission of CEMTEK. Further, CEMTEK shall not be responsible for the cost of any diagnosis or repair labor undertaken by Purchaser, third parties or successor owner/operator.

This warranty does not apply to damage caused by ordinary wear and tear, nor does it apply to damage caused by misuse, abuse, vandalism, acts of God, or improper handling, storage, operation, or maintenance of the product.

This warranty is limited to original products supplied by CEMTEK and shall not be construed to apply to the simultaneous and/or interdependent operation of the CEMTEK equipment with devices (hardware and/or software) supplied by others.

In no event shall any warranty extend beyond ninety (90) days from the expiration of the original warranty period.

Implied warranties disclaimer: the warranties and guaranties furnished by CEMTEK as expressly included herein constitute CEMTEK's sole obligation hereunder and are in lieu of any other warranties or guaranties, express or implied, and including the warranties of merchantability and fitness for a particular purpose.

PATENT INDEMNIFICATION: CEMTEK shall defend at its expense any suit or proceeding brought against Purchaser based on any claim that the equipment covered herein, except for equipment manufactured and/or designed to Purchaser's specifications, infringes any United States patent issued as of the date of this Proposal and pay any court imposed damages and costs finally awarded against Purchaser, but not to exceed the amount theretofore paid to CEMTEK by Purchaser hereunder provided: a) CEMTEK is promptly notified by Purchaser in writing of such claim, and b) CEMTEK is given full authority, information, and assistance by Purchaser which CEMTEK deems necessary for the conduct of such defense. CEMTEK shall have the right and option at any time in order to avoid such claims or actions and minimize potential ability to: a) procure for Purchaser the right to use the equipment; or b) modify the equipment so that it no longer infringes; or c) replace the equipment with non-infringing equipment.

DISCLAIMER OF CONSEQUENTIAL DAMAGES: CEMTEK shall not be liable to Purchaser for indirect, incidental or consequential damages including, but not limited to, loss of profits or revenue, loss of use of equipment, costs of sale, replacement power, or product, additional expenses incurred in the use of equipment or facilities, fines or penalties assessed or levied against Purchaser by any governmental agency based on operation, non-operation, use of Work or the claims of third parties. This disclaimer shall apply to consequential damages based upon any cause of action whatsoever asserted against CEMTEK, including one arising out of any Breach of Warranty or Guaranty, Products Liability, Negligence, Tort, or any other cause of action.

LIMITATION OF LIABILITY: Neither Party shall be liable to the other Party for damages that exceed the Order price. This limitation of liability does not apply to damages due to: (i) Claims based upon infringement of patents, copyrights, intellectual property and trade secrets; and (ii) Claims by third parties for loss or damage to property or personal injuries including death.

Application - Limitations and waivers of liability shall be valid and enforceable irrespective of whether any claim or liability is based on breach of Contract, breach of warranty, indemnity, tort (including negligence) or any other legal theory, and benefits thereof shall extend to each Party and its members, officers, directors, affiliates, and personnel.

HEALTH AND SAFETY: CEMTEK agrees to comply with the Federal OSHA requirements in effect as of the date of this Proposal relative to the design of the equipment furnished within its scope of supply as defined in this Proposal. Where state or local safety and health requirements differ from the Federal OSHA requirements, modifications or changes in design to meet state or local safety and health requirements will be incorporated at Purchaser's request. Additional costs arising from such requests and from erection procedures required by state or local safety and health regulations which deviate from Federal OSHA requirements will be for Purchaser's account. Anything to the contrary notwithstanding, CEMTEK shall not be responsible for health or safety programs or other precautions related to Purchaser's activities or operations, Purchaser's or other Contractors, the work of any other person or entity or Purchaser's site conditions. CEMTEK shall not be responsible for inspecting, observing, reporting or correcting any health or safety conditions or deficiencies of Purchaser or others at Purchaser's site. Purchaser agrees to indemnify, hold harmless and defend CEMTEK against any and all claims arising out of such conditions or deficiencies or the actions or failure to act of others. So as not to discourage CEMTEK from voluntarily addressing health or safety issues while at Purchaser's site, in the event CEMTEK does address health or safety issues by making observations, reports, suggestions or otherwise, CEMTEK shall nevertheless have no liability or responsibility arising on account thereof, and Purchaser's indemnity set forth above shall apply to any claims arising there from.

HAZARDOUS MATERIALS: Purchaser's facilities may contain hazardous materials, including asbestos bearing materials. If any such materials are encountered, CEMTEK shall have no obligation to remove or remediate them in the absence of a separate agreement which includes separate consideration to CEMTEK for such work. If CEMTEK or any of its subContractors is required to perform work within or immediately adjacent to any facilities that are determined to contain hazardous materials and/or asbestos, and the said work must be interrupted to allow for the remediation or removal of such materials by others, CEMTEK shall be entitled to any and all costs and other expenses associated with such interruption in work. Purchaser shall fully defend, hold harmless and indemnify CEMTEK and its agents from and against any claims arising out of exposure to such hazardous and/or asbestos bearing materials.

PERSONNEL PROTECTION
CEMTEK employees represent a significant investment to the company; therefore, Purchaser agrees not to recruit, attempt to recruit, hire as an employee, or hire as a consultant any CEMTEK employee who has provided services to Client on behalf of CEMTEK without prior consent the company.

If, during the term of this Agreement or for twelve months thereafter, Purchaser directly or indirectly retains the services of any employee of CEMTEK who has provided services to Purchaser on behalf of CEMTEK, without prior consent, Purchaser agrees to pay CEMTEK consideration within sixty (60) of occurrence twenty-five thousand dollars ($25,000) as liquidated damages.

Notwithstanding the foregoing, for the purposes of this section, "employee of CEMTEK" shall include only employees of CEMTEK who provide services to CEMTEK customers and shall not include accountants, attorneys or other independent Contractors of CEMTEK who provide services to CEMTEK itself.

PROPRIETARY AND CONFIDENTIAL: Each Party shall retain ownership of all proprietary and confidential information it had prior to the Agreement. Any drawings, patterns, specifications and information included in CEMTEK's Proposal or Contract and all other information otherwise supplied by CEMTEK's as to design, manufacture, erection, operation and maintenance of the equipment, shall be the proprietary and confidential property of CEMTEK and shall be returned to CEMTEK at its request. All intellectual property conceived or created by CEMTEK during the Agreement, will be owned exclusively by CEMTEK, including but not limited to, ideas, inventions, strategies, plans, data, techniques and any other intellectual property. Purchaser shall have no rights in CEMTEK's proprietary and confidential property and shall not disclose such proprietary and confidential property to others or allow others to use such property, except as required for Purchaser to obtain service, maintenance, and installation for the equipment purchased from the CEMTEK.

This clause shall survive the termination of this Contract and shall be in effect as long as Purchaser has possession of any of the CEMTEK's proprietary or confidential property.

INDEMNIFICATION: To the fullest extent permitted by Applicable Law, CEMTEK agrees to defend, indemnify and hold harmless Purchaser and its shareholders, members, partners, affiliates, employees, representatives and agents from and against liability arising from third party claims, including costs (including reasonable attorneys fees), expenses, damages, and judgments (collectively "Claims") in the event that, and to the extent that, such Claims arise from CEMTEK's willful or negligent acts or omissions or those of CEMTEK's officers, employees, agents, or affiliates. CEMTEK shall have the authority to direct the defense or settle any Claim indemnified by CEMTEK, to the extent that it's interests are affected; provided, that Purchaser or Agent may monitor such matters through counsel of its choice and at its own cost; and provided, further, that CEMTEK may not settle any indemnified Claim unless such settlement includes a release of, and the consent of (not to be unreasonably withheld) Purchaser. CEMTEK's

indemnification is conditioned on Purchaser (A) promptly notifying CEMTEK of any indemnified Claim such that CEMTEK's defense is not materially prejudiced by delay in the notification by Purchaser, and (B) providing reasonable cooperation in the defense of any indemnified Claim.

Purchaser, likewise, agrees to defend, indemnify and hold harmless CEMTEK and its shareholders, members, partners, affiliates, employees, representatives and agents from and against liability arising from third party Claims in the event that, and to the extent that, such Claims arise from Purchaser's willful or negligent acts or omissions or those of Purchaser's officers, employees, agents or affiliates. Purchaser shall have the authority to direct the defense or settle any Claim indemnified by Purchaser, to the extent its interests are affected; provided, that CEMTEK may monitor such matters through counsel of its choice and at its own cost; and provided, further, that Purchaser may not settle any indemnified Claim unless such settlement includes a release of, and the consent of (not to be unreasonably withheld) CEMTEK. Purchaser's indemnification is conditioned on CEMTEK (A) promptly notifying Purchaser of any indemnified Claim such that Purchaser's defense is not materially prejudiced by delay in the notification by CEMTEK, and (B) providing reasonable cooperation in the defense of any indemnified Claim.

ASSIGNMENT: CEMTEK retains the right to assign this Contract to any subsidiary or affiliated company of CEMTEK without Purchaser's prior approval. All other assignments by either CEMTEK or Purchaser require the prior written consent of the other party.

CHANGES/ADDITIONAL WORK: CEMTEK is not obligated to incur any expense or do any work in excess of that reasonably anticipated unless Purchaser issues a Change Order for such expense or work with mutually acceptable prices, Terms and Conditions.

CANCELLATION: Purchaser's cancellation charge of the Contract shall be in accordance to the Order Cancellation Schedule provided with the Proposal, or if none is provided, shall be subject to a cancellation charge of 10% of the total price of the Contract, plus CEMTEK's actual and committed cost, expenses, overhead, margin and profit for fulfillment of the Contract before notice of cancellation is received.

SUSPENSION: In the event Purchaser suspends the execution of work on this Contract, Purchaser shall reimburse CEMTEK for all costs incurred by CEMTEK as a result of such suspension, including, without limitation, all borrowing and opportunity costs. In the event the suspension exceeds one hundred and eighty (180) days total in duration, in addition to being entitled to full reimbursement of costs as aforesaid, CEMTEK shall have the unqualified right to cancel the unfinished portion of the Contract without liability to Purchaser of any kind. Should the Contract be canceled, the provisions of the section titled CANCELLATION shall apply.

CONTRACT INTERPRETATION: If any of the provisions of these Conditions (including statements made in the Proposal) conflict with any provisions in Purchaser's documents, the former shall govern unless CEMTEK expressly agrees to the contrary in writing. Any Contract resulting from this Proposal shall be construed, and the legal regulations of the CEMTEK and Purchaser shall be determined in accordance with the laws of the State of California, USA

All communications, written and verbal, between the parties hereto with reference to the subject of this Proposal prior to the date of its acceptance are merged herein and this Proposal, when duly accepted and approved, shall constitute the sale and entire agreement and Contract between the parties as to the subject matter thereof. No changes in or modifications of said agreement shall be binding upon the parties of either of them, unless they shall be in writing duly accepted by Purchaser and approved in writing by CEMTEK.

DISPUTES: In the event of a dispute arising hereunder, the parties will attempt to amicably resolve the dispute. If after good faith negotiations, the parties cannot reach agreement, then the matter shall be resolved in a court having competent jurisdiction.

SEVERABILITY: Should any part of this Agreement be declared invalid or unenforceable, such decision shall not affect the validity of any remaining portion, which remaining portion, shall remain in full force and effect, and CEMTEK shall have the right to replace the part declared invalid or unenforceable with a provision which serves as much as validly possible the same commercial purpose as the part determined to be invalid or unenforceable.

ATTACHMENTS:

A. CERTIFICATION TERMS AND CONDITIONS (IF APPLICABLE)

ATTACHMENT "A"
CERTIFICATION TERMS & CONDITIONS:

Prices and schedule for certification, field supervision of testing are based and conditioned upon the following:

1. NORMAL WORKING DAY - A normal working day consists of eight (8) hours. Overtime rates shall be applied after the first eight (8) hours worked. It is at CEMTEK's discretion to invoice extra for overtime.
2. INCLEMENT WEATHER -Inclement weather is defined as lightning, thunderstorms, strong winds, icing, or any ether severe atmospheric conditions which may endanger CEMTEK's personnel and/or equipment, or otherwise have detrimental effect to the test results. The decision regarding whether sampling operations will be conducted or continued, will be at the discretion of CEMTEK. If CEMTEK is unable to conduct testing because weather conditions render such testing unsafe or inaccurate, thereby preventing testing during the scheduled hours of the scheduled days, Purchaser agrees to pay the standby rate.
3. UTILITIES AND FACILITIES - In order to avoid delays and standby fees, Purchaser will provide (1): Safe access to the test ports/testing location via ladders, elevators, etc., (2): Protection from hazardous environmental or plant conditions including thunderstorms, toxic gases, etc., and (3): Power requirements. Loss of any utility during any part of the certification program will constitute a four (4) hour delay after the utility has been restored.
4. PROCESS INFORMATION - Process data shall be provided by Purchaser in a format suitable for direct inclusion in the final report. If data manipulation or interpretation is required, Purchaser will be billed at the current rate in effect.
5. UNSUCCESSFUL TEST – CEMTEK shall not be held responsible for any unsuccessful test due to failure, malfunction, or improper operation of Purchaser's process or control equipment. It is Purchaser's responsibility to have the process, control equipment, and monitoring system operated in a representative manner. CEMTEK may recommend adjustments to the operations, but such action will be at the discretion of Purchaser and in no way render CEMTEK liable.
6. FACILITY CONDITIONS
    a. The combustion source under test must remain on-line and stable during the RA Test Program.
    b. All constituents must stay below full-scale for the duration of the RA Test Program. If an off scale condition does occur, the test will be aborted and will have to be repeated.
    c. If the combustion source under test trips, the delay charge will be one hour - plus the time lost by the outage.
    d. If a combustion source change is required due to a problem, delay charges will be assessed for the actual time required to make the move.
    e. If Purchaser is responsible for supply of calibration gases and CEMTEK runs out of the calibration gases required to perform the calibration drift test or the cal error test, delay charges win be assessed for the time lost. If the-time lost is expected to exceed three (3) days, CEMTEK may remove (at CEMTEK's option) the manpower on site. When calibration gases are again available, CEMTEK will schedule the manpower to finish the remainder of the test.

If calibration gases provided by Purchaser are exhausted during the RA Test Program, delay cost will be incurred. If, at the end of the current week CEMTEK and the testing firm must pull offsite, demobilization and remobilization charges will result.

FLOW GUARANTY: CEMTEK guarantees for availability and certification will extend to flow measurement only if the following conditions are met

a. The flow measurement system is supplied through CEMTEK.
b. A flow profile test is run by a qualified firm to determine and/or verify flow conditions at the proposed point of measurement. In addition, a CEMTEK Field Representative must be included to witness the tests.
c. CEMTEK approves the final selection of flow technology and the flow instrument location for each measurement point.
d. The flow equipment is installed according to CEMTEK's and the flow manufacturer's installation instructions.

Any costs associated with redesign, modification or additions to any ductwork, stack, or vaning required to resolve any flow problems shall be borne by Purchaser.

PERFORMANCE GUARANTEE: CEMTEK guarantees to Purchaser that the original CEMTEK supplied CEM system equipment, subject to the requirements set forth below and upon Notification (CEMTEK notification to Purchaser) that the Startup Inspection is complete and the system is ready for testing:

a. Shall meet the certification requirements of 40 CFR 60; and
b. For the first year period ending twelve months after Notification or 18 months after shipment, whichever is earlier, the instrument systems supplied by CEMTEK shall achieve 95% quality-assured data availability as defined in 40 CFR 75. For purposes of this calculation (except for the first 4 hours grace period after a system failure) all system downtime prior to notification to CEMTEK shall be excluded).

The Startup Inspection shall include:

a. Proof of completion of electrical continuity test. This test shall be performed at the factory for equipment wiring and at the site for wiring completed in the field.
b. Proof of completion of a piping test. This test shall be performed at the factory for equipment piping and at the site for piping completed in the field.
c. Proof of completion of a calibration gas audit for each measured component. This test shall be performed at the factory and at the site installed conditions.
d. Performance of an automatic calibration cycle upon completion of startup.

These guarantees will be deemed satisfied by successful completion of the Performance Tests in accordance with applicable CEMTEK standard procedures in effect on the date of the Proposal. Performance Tests shall be witnessed by CEMTEK within ninety (90) days of the date of Notification. In the event such tests are not conducted within ninety (90) days of this notice or within six (6) months of shipment, whichever is earlier, and through no fault of CEMTEK the equipment shall be deemed accepted by Purchaser and in compliance with all requirements.

If the equipment fails to meet the performance guarantees as verified by certified test results, CEMTEK will supply, at its option, repaired or replacement parts pursuant to the delivery terms of the Proposal.

The applicability of this guarantee is limited to laws, regulations and interpretations of those laws and regulations (Governing Law) in effect on the date the Contract is executed by CEMTEK unless CEMTEK agrees differently in writing. It does not cover any subsequent changes in Governing Law.

CEMTEK's sole guarantees are limited to those contained herein. This guarantee is contingent upon the correctness and accuracy of information provided by Purchaser. It is based upon operating conditions specified in CEMTEK's Proposal and upon Purchaser storing, installing, operating and maintaining the equipment in accordance with CEMTEK's written instructions. This guarantee is not applicable to circumstances relating to force majeure. It is also not applicable unless CEMTEK is notified in writing within fifteen (15) days of a documented failure.

CEMTEK shall not be liable to Purchaser for special, indirect, incidental or consequential damages, including, but not limited to, loss of profits or revenue, loss of use of equipment, costs of replacement power or product, additional expenses incurred in the use of equipment or facilities, or the claims of third parties. This disclaimer shall apply to consequential damages based upon any cause of action whatsoever asserted against CEMTEK, including one arising out of any breach of warranty or guaranty, products liability, negligence, tort, or any other cause of action.

In no event will CEMTEK's aggregate liability for any and all claims, including property damage and personal injury claims, allegedly resulting from breach of Contract, tort, or any other theory of liability exceed the total compensation received by CEMTEK from Purchaser under this Contract.

The warranties furnished by CEMTEK as expressly included herein constitute CEMTEK's sole obligation hereunder and are in lieu of any other warranties or guaranties, express or implied, including the warranties of merchantability and/or fitness for a particular purpose.

CEMTEK
KVB-Enertec

ATTACHMENT "C"

ORDER CANCELLATION SCHEDULE

# OF DAYS AFTER RECEIPT OF ORDER (ARO)	ACCUMULATIVE % OF TOTAL PRICE
Within 30 DAYS ARO	10%
31-45 DAYS ARO	25%
46-60 DAYS ARO	40%
61-75 DAYS ARO	65%
76-100 DAYS ARO	80%
101-130 DAYS ARO	95%
131+ DAYS ARO	100%
IF EQUIPMENT HAS SHIPPED	100%

Accurate. Reliable. Cost Effective.

Emissions Monitoring for Compliance & Process Improvement

CEMTEK KVB-Enertec

LaserCEM®

LaserCEM® For Part 75: Innovation That Fits, Not Disrupts

Being a CEMS Integrator allows us to service your CEMS needs by customizing CEMS systems that are of the utmost benefit to your specific application. With over 50 years of experience, we understand that not all CEMS systems are created equal and work for all applications. Therefore, CEMTEK KVB-Enertec has proudly partnered with Durag and their LaserCEMS®, a laser-based extractive CEMS requiring no sample conditioning, offering the same level of simplicity and low operational cost than an IPCEMS (but without its limitations), and being field-proven meeting US EPA 40CFR Part 75 requirements.

In response to environmental challenges and given ongoing technological development, many industries are confronted with more and more stringent regulations governing emission limit values. This is where the LaserCEM® from AP2E, a 20-year specialist in industrial gas analysis systems and member of DURAG GROUP, comes into play.

The LaserCEM® is a laser-based analyzer using the patented OFCEAS® (optical feedback cavity enhanced absorption spectroscopy) to improve upon standard TDLAS and other laser-based technologies performances. It is an industry breakthrough. It offers a more accurate, efficient and sustainable solutions for continuous monitoring of gaseous pollutant emissions.

YOUR SOLUTION TO REGULATORY AND ENVIRONMENTAL CHALLENGES

Air quality and the monitoring of industrial emissions play a major role in public health. Industrial stacks, for example, are subject to new regulations requiring continuous monitoring of pollutants at ever lower concentrations.

The problem: conventional technologies for this type of measurement (NDIR, FTIR, etc.- even traditional TDLAS and other laser-based analyzer solutions) are reaching their detection limits for many pollutants. This is exactly where LaserCEM® comes into play.

The LaserCEM® utilizes the patented OFCEAS® technology, a high resolution absorption spectroscopy technique engineered to improve on existing laser-based spectrometer solutions. As a multi-gas analysis system, this laser-based technology enables unrivaled measurement quality in terms of accuracy and resolution, allowing measurement of gases in concentration ranges from percent to ppb.

OFCEAS® TECHNOLOGY: UNRIVALED ACCURACY, MINIMIZED MAINTENANCE + LOW OWNERSHIP COSTS

LaserCEM® operates with LPS® (low-pressure gas sampling) and a heat-traced sampling line, only maintained at maximum 80 °C in order to avoid condensation and guarantee accurate, consistent measurements. In addition, this technology reduces total sample mass flow, and therefore the amount of impurities. As a result, maintenance is minimized and sample transfer at 180 °C is avoided, considerably reducing the energy consumption of the analysis system. The very short response time and low sample volume required by the use of LPS®technology enable longer sample line lengths than conventional heated lines, and therefore greater ease of installation of the analysis system at lower cost.

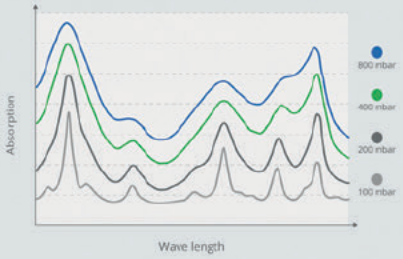
The combination of OFCEAS® and LPS® technologies enables fast, highly precise and interference-free spectral analysis, whatever the gas matrix to be analyzed. Thanks to its LPS®, LaserCEM® can be adapted to a wide range of applications without the need to heat or dry the sample prior to analysis, which greatly reduces installation, operating and maintenance costs.

KEY FEATURES

UNIQUE SELECTIVITY AND PRECISION

LaserCEM® OFCEAS® technology generates a high resolution absorption spectrum in the picometer range, always in combination with the zero signal. This unique capability minimizes or eliminates interferences, ensuring accurate and reliable measurements of various gases. Thanks to its exceptional selectivity, the system can clearly distinguish gases in complex matrices, offering unrivaled accuracy in pollutant detection. With LPS® technology, absorption spectra are so well defined that cross-sensitivity phenomena are virtually non-existent, enabling measurement of pollutants even in matrices containing over 60% water.

Because the system enables direct measurement without sample modification, it ensures maximum representativeness, guaranteeing measurement of peripheral parameters (water, oxygen) with the same analyzer.



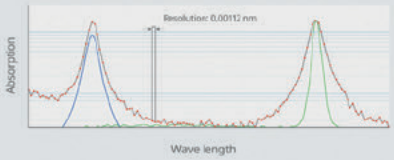
The graph shows how the absorption peaks varies at different pressures (100, 200, 400, and 800 mbar). Lower pressure increases peak sharpness, making the absorption ranges more distinct and reducing interference between different measuring components, resulting in more precise measurements.

DIRECT MEASUREMENT, EXCEPTIONAL SENSITIVITY

Thanks to an optical path of up to 10 km, signal intensity is multiplied by 1,000 compared with conventional technologies. This enhanced sensitivity enables the detection of extremely low concentrations of pollutants with exceptional accuracy, down to parts per billion (ppb).

The system provides direct measurement without sample modification, with unrivaled response times ensuring maximum integrity of the data collected. It is delivered fully precalibrated, eliminating the need for daily zero and span calibrations.

LaserCEM® requires no nitrogen, zero air, dilution air or other carrier gases, simplifying operation and reducing operating costs.

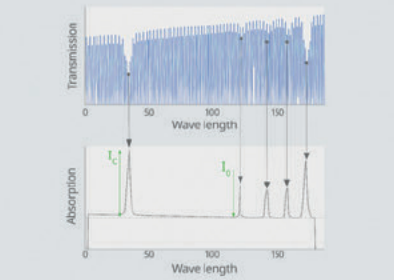


The graph shows the absorption of two gases (blue and green curves). Each gas absorbs specific wavelengths, creating a unique spectrum like a fingerprint. By analyzing the absorption (black line with red dots), the presence and concentration of gases can be accurately detected. AP2E devices excel at measuring gas mixtures, even when components vary greatly in concentration – from percentages down to parts per billion (ppb) or parts per trillion (ppt).

DOUBLE QAL1 CERTIFICATION FOR MEASUREMENTS THAT ARE ALWAYS ACCURATE

The LaserCEM® is a turnkey multi-gas analysis system for continuous, simultaneous measurement of multiple gases such as HF, HCl, NH_3, CH_4, SO_2, CO, CO_2, NO, NO_2, O_2, N_2O, H_2S, CHOH, H_2O, etc. It benefits from double QAL1 certification (by TÜV and MCERTs) in accordance with EN 15267 and EN 14181 and incorporates the QAL3 functionalities defined by EN 14181.

Only two reference gas cylinders need to be connected to the QAL3 module. It manages the injection of standard gases at the head of the sampling system, enabling the entire measurement system to be checked. Very low reference gas consumption ensures an extended gas cylinder change interval of up to one year, reducing costs for gases and labor.



The transmission spectrum (blue graph) shows wave-length changes during measurement, which reveal the absorption spectrum (black graph). Each gas component absorbs specific wavelengths, creating unique peaks in the absorption spectrum.

MODULARITY AND LOW ENERGY CONSUMPTION: ASSETS FOR A SUSTAINABLE FUTURE

LaserCEM® is designed and certified as a modular system, making different configurations and the addition of new gases or measuring ranges possible. This flexibility supports users in bringing their installations up to standard. Companies can easily adapt to new regulatory requirements with no need to invest in a completely new system, reducing costs and wasted resources.

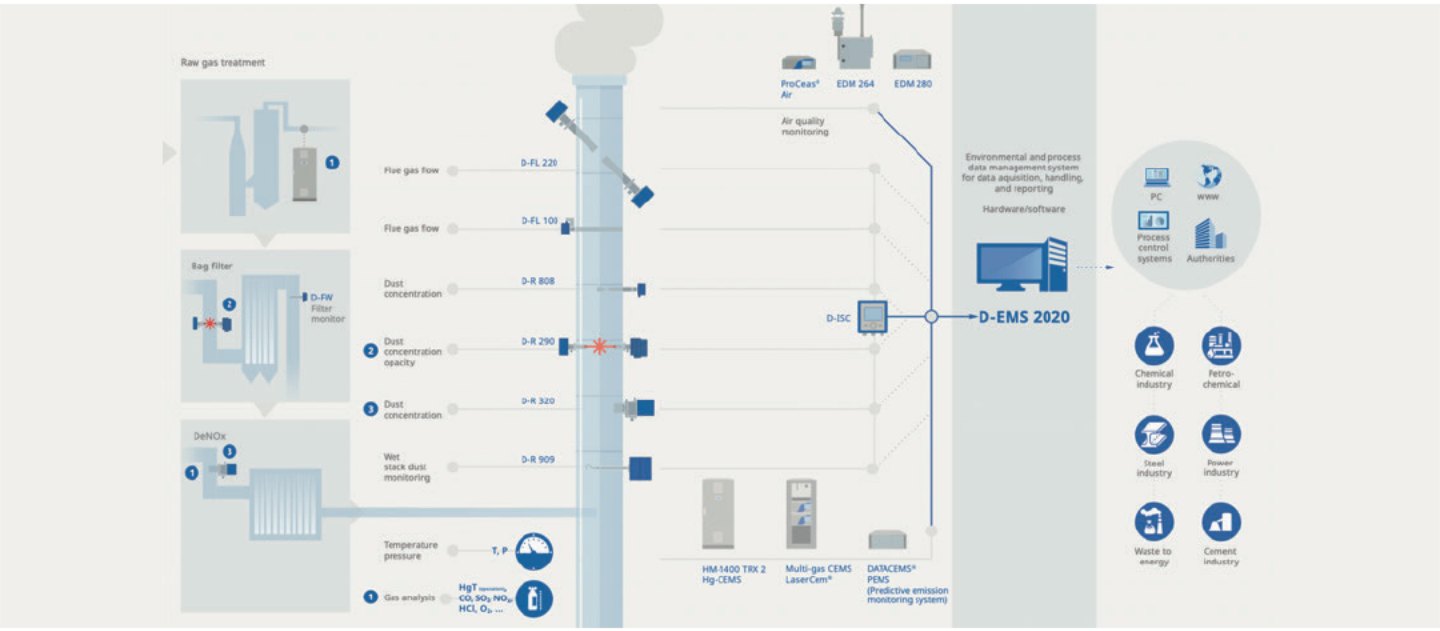
The technology is used in marine applications, guaranteeing the availability of spare parts or upgrades for over 25 years.

LaserCEM® also features much less energy consumption than other current analyzers. In fact, the system achieves energy savings of 50 to 80%, depending on the length of the sampling line. This energy efficiency helps to reduce the carbon footprint of emission monitoring operations, bringing industrial practices in line with sustainable development objectives.

GROWING ADOPTION BY INDUSTRY

Many industries are gradually adopting this technology. Interest is greatest in the energy production, chemical, metallurgy and waste-to-energy sectors, where pollutant emissions are particularly tightly controlled.

With its growing adoption (several hundred installations are already in service), LaserCEM® promises to become an essential tool for monitoring emissions into the atmosphere, paving the way for a cleaner, more sustainable future.



A COMPLETE, TURNKEY SOLUTION FOR REGULATORY COMPLIANCE OF INDUSTRIAL EMISSIONS

DURAG GROUP offers its customers a complete solution for monitoring stack emissions. In addition to LaserCEM® and mercury (Hg-CEMS) analyzers, DURAG offers continuous dust measurement analyzers, flue gas flow meters and the environmental and process data acquisition, handling, and reporting system needed to effectively monitor and report regulated pollutants. This comprehensive, integrated solution ensures full compliance with local regulatory requirements and offers optimized emission management for industries. DURAG's global reach, combined with local support, ensures efficient service and maintenance, enhancing plant operational performance.

TECHNICAL DATA

EN 15267-3 & QAL1 CERTIFIED RANGES (CERTIFICATION BY TÜV + MCERTS)

LaserCEM(R) actual ranges compliant with Part 60 and Part 75 applications, including low NOx and low CO

EU

Parameter**	Certified Measuring Range*		Typical Maximum Range	
CO (mg/m³)	0 0	75 1,249	0	3,000
CO low (mg/m³)	0 0	30 250	--	--
CO2 (% vol)	--	--	0	20
NO (mg/m³)	0 0 0	78 150 2,008	0	3,000
NO_2 (mg/m³)	0 0	40 100	0	2,000
N_2O (mg/m³)	0	500	0	500
HF (mg/m³)	0 0	2 10	0	100
SO_2 (mg/m³)	0 0	75 2,858	0	5,000
HCl (mg/m³)	0 0	15 98	0	150
NH^3 (mg/m³)	0 0 0	15 45 76	0	500
CH_4 (mg/m³)	0 0	5 20	0	500
O_2 (% vol)	0	21	0	25
H_2O (% vol)	0 0	30 40	0	60
H_2S (mg/m³)	0	100	0	7,500
CHOH (mg/m³)	0	5	0	30
TOCs by FID – on request				

US

Parameter**	Certified Measuring Range*		Typical Maximum Range	
CO (ppmv)	0 0	65 1,090	0	2,619
CO low (ppmv)	0 0	26 218	--	--
CO2 (% vol)	--	--	0	11
NO (ppmv)	0 0 0	64 122 1,636	0	2,444
NO_2 (ppmv)	0 0	21 53	0	1,063
N_2O (ppmv)	0	278	--	--
HF (ppmv)	0 0	2 12	0	122
SO_2 (ppmv)	0 0	29 1,091	0	1,908
HCl (mg/m³)	0 0	10 66	0	101
NH^3 (ppmv)	0 0 0	22 65 109	0	717
CH_4 (ppmv)	0 0	8 30	0	762
O_2 (% vol)	0	21	0	25
H_2O (% vol)	0 0	30 40	0	60
H_2S (ppmv)	0	72	0	5,380
CHOH (ppmv)	0	3	0	16
TOCs by FID – on request				

Linearity	< 2% range
Repeatability	< 1% range
Response Time	< 200 s all gases
Drift zero/span	< 3.0% all gases; O2 < 0.2 vol-%

* Certification in accordance with EN 15267-3, QAL1 by TÜV + MCERTs

** Concentrations based on standard conditions 1,013.25 hPa and 0 °C

TECHNICAL DATA

Analyzer	
Power Supply	110 … 230 VAC, 50 … 60 Hz, 150 VA + 10 to 45 VA/m of sampling line (consumption)
Compressed Air Supply	Dust free, oil free, dry, at ambient temperature 3 barg pressure at max 5.5 l/min flow, required only in maintenance mode
Ambient Conditions	• Temperature: +5 … +40 °C • Humidity: 10 … 90% relative humidity, non-condensing
Communication Interfaces	• USB ports, modbus TCP, • RS232, RS485 (RJ45), VGA, 4 … 20 mA • Remote access via Ethernet

Turnkey LaserCEM® Cabinet	
Dimensions (H x W x D)	• 24U: 134 x 60 x 91 cm • 38U: 183 x 60 x 80 cm

Sampling System	
Technology	Low pressure sampling (LPS®)
Sampling Line	Function of the ambient temperature, unheated sampling line or traced line temperature maintained at max 80 °C; maximum length 150 m
Sampling Probe	• Includes filter + sonic nozzle • Material: Inconel 600, other materials on request • Length: variable, tailor-made
Process Connection	DN65 PN16 flange, stainless steel (316L)
Sampling Box	• Dimensions (H x W x D): 44 x 40 x 18 cm • Degree of protection: IP65
Flue Gas	Temperature: +5 … +600 °C Absolute humidity: 0 … 80% vol., higher water content on request

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** Concentrations based on standard conditions 1,013.25 hPa and 0 °C

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