



State-of-the-Art Innovators of Chemical Instrumentation
We Sell Solutions Not Boxes
ISO 9001:2008 Certified

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CICP Worksheet (To Be Completed When Requesting a Quotation)

Technical Information Required for CICP Long/Short Path Gas Cell and IRGAS System Applications (Section A only required for gas cells; all Sections required for IRGAS.)

Customer: _____ Location: _____

Date Quotation is required: _____

A. Long and Short Path Gas Cell Specifications

1. Estimated pathlength of gas cell: _____; how estimated: _____

2. Gases to be analyzed:

a. Carrier or dominant gas: _____

b. Known composition of gases: _____

c. Expected gas species in gas stream: _____

d. Impurities to be measured: _____

3. Concentration ranges and LODs for all gas species (in ppb to pph):

Species	Range	LOD	Species	Range	LOD
a.			f.		
b.			g.		
c.			h.		
d.			i.		
e.			j.		

4. If moisture to be measured, LOD required: _____

5. Operational temperatures of gas cell (deg C):

a. For purging/flushing: _____

b. For sample analysis: _____

6. Pressures and flowrates of gas stream:

	Pressure (torr)	Flowrate (liter/min)
a. At source of gas:		
b. At gas cell inlet		
c. At downstream exhaust:		

7. If gas flow is being pulled by a vacuum, at what level?: _____

8. Time response required per sample measurement (state min or sec): _____
9. Frequency of measurement (state min or hr):
- Samples from same gas stream: _____
 - Samples from two different gas streams: _____
 - Samples from multiple gas streams: No. of streams: _____ Frequency: _____
10. Which gas samples are of sufficient concentrations to be considered:
- Corrosive: _____
 - Toxic: _____
 - Non-corrosive or toxic: _____
11. Seals required for gas cell (check which type apply):
- Viton: _____
 - Kalrez: _____
 - Metal C-seals + Kalrez: _____
 - Buna-N: _____
 - Other (indicate): _____
12. Preferred windows for gas cell (check):
- KBr: _____
 - CaF₂: _____
 - BaF₂: _____
 - AgCl: _____
 - ZnSe: _____
 - AR-coated ZnSe: _____
 - IR-Quartz: _____
 - Sapphire: _____
13. Preferred gas cell body material (check):
- Glass: _____
 - Anodized Aluminum: _____
 - Electropolished stainless steel: 304 SS: _____ 316L SS: _____
 - Nickel-plated stainless steel: _____
 - Hastelloy: C22: _____ C276: _____
 - Monel: _____
14. Plumbing connectors preferred on gas source lines:
- Swagelok: _____ Size: _____
 - VCR: _____ Size: _____
 - Other (indicate): _____
15. Any entrained particles in gas stream that necessitate a particle filter;
 Yes: _____ No: _____ What size particles: _____
16. For "wet" gas streams, is a moisture drier required to remove it before analysis:
 Yes: _____ No: _____ Degree of wetness: _____
17. Is ultra dry nitrogen, argon, or air available as a purge gas; which: _____
18. FTIR or EP-IR spectrometer make and model to be used with gas cell:
- Make: _____
 - Model: _____ & Detector: _____
 - Maximum resolution (cm⁻¹) required for analyses: _____
 - Gas Purged: _____
 - Evacuated: _____
19. If not a FTIR, what type of Source: _____ Detector: _____

B. IRGAS (FTIR or EP-IR) System Architecture Specifications

1. Usage location (check): a. Indoor: _____ b. Outdoor: _____
c. Lab: _____ d. Production plant: _____ e. Field: _____
f. Distance from sampling point to analyzer (meters): _____
2. NEMA rating required: None: _____ NEMA 4: _____ NEMA 4X: _____
NEMA 12: _____ Other (indicate): _____
3. Fixed Installation: _____; Movable within facility: _____; Transportable: _____
4. If fixed within a facility (check):
a. Free standing floor mount: _____
b. Wall mount: _____
c. Rack mount (19"): _____
5. CPU and Monitor requirements (check):
a. Both integrated into enclosure: _____
b. CPU integrated; monitor separate: _____
c. Lap top provided with system: _____
d. To be supplied by user: _____
6. Environmental conditions surrounding IRGAS System at point of use:
a. Temperature range (deg C): _____
b. Air pressure (atm): _____
c. Toxic or gases: _____
d. Corrosive gases: _____
e. Explosion risks (indicate level): _____
7. Data output options required (check):
a. txt files: _____
b. 4 - 20 ma: _____
c. Serial port: _____
c. Other (indicate): _____
8. Communication protocols required (check):
a. Device Net: _____
b. SECS: _____
c. Ethernet: _____
d. Other (indicate): _____
e. None: _____
9. Data broadcast requirements (check):
a. Single viewer: _____
b. Multiple viewers: _____; how many: _____
10. Footprint and space constraints (indicate inches or cm):
Width: _____ Depth: _____ Height: _____ Volume: _____
11. Weight constraint (indicate kg or lbs): _____

12. Is system refrigeration required: Yes: _____ No: _____

C. Gas Sampling and Manifold Requirements

1. Number of gas streams to be sampled: _____

2. Sampled gas temperatures and pressures: Temp: _____ deg C; Press: _____ psig

3. Pressure regulators and reducers required (please specify): _____

4. Pressure and temperature sensors required:

a. Manual: _____ or Automatic: _____

b. Temperature range: _____

c. Pressure range: _____

5. Automatic or manual valve control (check): Automatic: _____ Manual: _____

6. Does gas manifold need to be heated: Yes: _____ No: _____

If yes, to what temperature range: _____

7. Requirement for purging and/or vacuum pumps, if any:

a. Purge only: _____

b. High vacuum turbo: _____

c. Low vacuum diaphragm: _____

d. Low vacuum Venturi: _____

e. Supplied by user: _____

8. Is ultradry nitrogen purge gas (99.999% or better) available: Yes: _____ No: _____

9. How will sampled gas stream be treated after IRGAS analysis:

a. Back to main stream: _____

b. Sent to scrubber: _____

c. Sent directly to house exhaust: _____

D. Software Specifications

1. Number of gas calibrations required: _____

2. For which gas species: _____

3. For non-HITRAN data base species, who is to provide the gas calibrations:

a. End user: _____

b. CIC Photonics: _____

4. Time response required for individual sample analyses (min or sec): _____

5. Frequency of sample measurements required (min or hr): _____

6. Temperature and pressure variations of sampled gases:

Temperature variation: _____

Pressure variation: _____

7. Is software operation of gas manifold valves required: Yes: _____ No: _____

8. Is a spectral library and search engine required: Yes: _____ No: _____

E. Other Considerations

1. If an order is anticipated, are replacement parts or spare components to be ordered with the IRGAS System? Please indicate which items would be needed as replacement or spare components:

- a. Windows: _____
- b. O-rings: _____
- c. Mirrors: _____
- d. IR Source: _____
- e. Nitrogen moisture purifier: _____
- f. Other: _____

2. Are installation and training for IRGAS System required if a decision is made to purchase an IRGAS system:

- a. At user site: _____
- b. At CICP factory: _____

3. Any other relevant information that you can provide:
