ABB PUV3402 LED, PIR3502, PFO3372 process photometers provide on-line measurements of gas or liquid components, in simple or complex process streams for:
- Process Efficiency
- Catalyst Protection
- Product Quality
- Environmental Concerns
- Safety
- Process Control

ABB process photometers provide reliable performance in the petrochemical, chemical, refining, gas processing and product pipeline industries.

These lists provide a general reference for determining potential IR and UV applications. Other considerations will be the remaining stream matrix, stream temperature, stream pressure, and stream phase. The sample must be homogeneous, single phase in order to apply the method. Please provide the detailed information on your application to our ABB sales group so that application engineers can determine the feasibility of your application.
Field proven PUV3402 and PIR3502 applications

This chart is a partial listing of field-proven applications. These applications are grouped by process. Measured components and key benefits are indexed by each application.

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IR absorbing compounds (potential measurements) - partial list:
- Butadiene (1,3)
- Butane (n)
- Carbon dioxide
- Carbon monoxide
- Carbon tetrachloride
- Chloroform
- Cyanogen
- Cyclopropane
- Diazomethane
- Dichloroethane (1,1 and 1,2)
- Dichloromethane
- Dimethyl amine
- Dimethyl ether
- Dimethyl hydrazine
- Ethane
- Ethyl alcohol
- Ethyl chloride
- Freon-13B
- Freon-14
- Freon-C-318
- Hydrazine
- Hydrogen bromide
- Hydrogen chloride
- Hydrogen cyanide
- Hydrogen sulfide
- Isobutane
- Methane
- Methyl alcohol
- Methyl azide
- Methyl chloride
- Methyl mercaptan
- Nitric Acid
- Nitric oxide
- Nitroethane
- Nitrogen dioxide
- Nitrogen pentoxide
- Nitromethane
- Nitropropane (1,2)
- Nitrosyl chloride
- Nitrous Oxide
- Phosgene
- Propane
- Propylene
- Trimethylhydrazine
- Trimethylamine
- Vinyl chloride
- Water

UV absorbing compounds (potential measurements) - partial list:
- Acetic acid
- Acetone
- Ammonia
- Aniline
- Anthracene
- Benzene
- Bromine
- Carbon disulfide
- Carbon tetrachloride
- Chlorine
- Chlorine dioxide
- Chlorophenol (o,m,p)
- Dioxane
- Ethylbenzene
- Ferric chloride
- Fluorine
- Hydrogen sulfide
- Iodine
- Mercury
- Methyl mercaptan
- Naphthalene
- Nickel carbonyl
- Nitrobenzene
- Ozone
- Perchloroethane
- Phenol
- Phosgene
- Pyridine
- Sodium sulfide
- Styrene
- Sulphur
- Sulphur dioxide
- Furfural
- Toluene
- Hydrogen peroxide
- Xylene (o, m, p)
- Hydrogen sulfide
- Toluene
- Iodine
- Xylene (o, m, p)
Field-proven multicomponent applications

**Multicomponent measurements**

- 0–1.2% toluene; 0 –2% tetrahydrofuran and 0 –100% LEL of gas mix (3 components)
- 0–20% CO; 0 –20% CO2; and 0 –5% CH4 (3 components)
- 0–55% propane and 0 –20% propylene (2 components)
- 0–100 ppm CH4 and 0 –250 ppm ethane in ethylene @ 100 psig (2 components)
- 0–100 ppm CO and 0 –100 ppm CO2 in H2 @ 200 psig (2 components)
- 0–5% CO2; 0 –5% CO; 0 –1% toluene and 0 –1% benzene in air oxidation vent (4 components)
- 0–50 ppm acrylonitrile and 0 –50 ppm styrene in air (2 components)
- 0–50 ppm ethylene oxide and 0 –50 ppm propylene oxide in air (2 components) 0–70% methyl chloride and 30 –55% methylene chloride (2 components)
- 0–5000 ppm SO2; 0 –2000 ppm NO; 0 –2000 ppm NO2 and 0 –2000 ppm NOx (4 components)
- 0–5000 ppm ethane; 0 –5000 ppm ethylene and 0 –80% methane (3 components)
- 0–40% CO2; 0 – 40% CO and 0 –25% water vapor in air (3 components)
- 0–80% ethylene and 0 –15% CO2 in mixed HC stream as a vapor (2 components)
- 0–100% CO; 0 –60% ethylene; 0 –20% CO2; and 0 –5% ethyl chloride @ 70 psig (4 components)
- 0–1000 ppm water and 0 –5% DMSO in monochlorobenzene (2 components)
- 0–100% ethylene; 0 –10% EDC; 0 –50% HCl; and 0 –20% ethyl chloride (4 components)
- 0–20% propadiene; 0 –40% methyl acetylene and 0 –60% MAPD (3 components)

**Water measurements**

- 0–2% water in phenol
- 0–500 ppm water in monochlorobenzene
- 0–50 ppm water in ethylene dichloride
- 0–250 ppm water in chlorine @ 75psig (vapor)
- 0–0.5% water in ethylene diamine
- 0–100 ppm water in vinylidene chloride
- 0–500 ppm water in propylene glycol
- 0–200 ppm water in methyl ethyl ketone (MEK)
- 0–500 ppm water in dimethylacetamide
- 0–200 ppm water in allyl chloride
- 0–0.5% water in acetone
- 0–1500 ppm water in methanol
- 0–100 ppm water in benzene
- 0–300 ppm water in toluene diamine
- 0–1000 ppm water in MEK & alcohols

**Various single component measurements**

- 1,3 butadiene 0 – 50%; in isobutene
- 1,3 butadiene 0 –70%
- acetic acid 0 –2%; in acetic anhydride
- acetylene 0 –1%; in methane; ethane and ethylene acetylene 0 –1.5%
- ammonia 0 –250 ppm; in air
- cis-2-butene 0 –10%; in butadiene
- CO2 0–1%; in CH4 and C2H6
- CO2 0–1%; in ethane
- CO2 0–5000 ppm; in ethane
- CO2 0–5000 ppm; in propane
- cyclohexane 0 –30%; in cyclohexanol
- cyclohexanone 0 – 500 ppm; in cyclohexane
- ethane 0 –10%; in methane and propane
- ethylene 0 –2%; in ethane
- H2S 0 –15%; in sour fuel gas
- hexamethylene imine 0 – 400 ppm
- hydrogen cyanide 0 –1%
- MEOH 0–20%; in MTBE/TAME
- methane 0–6%; in H2 and water vapor
- methanol 0 – 40%; in MTBE
- methyl bromide 0 –100 ppm in air
- total hydrocarbons 0 –10%; in propylene
- total hydrocarbons 0 –300 ppm; as butene-1 vinyl acetate 0 –10%; in ethylene
- vinyl acetate 0 –10%; in ethylene
- vinyl acetate 0 –20%; in ethylene

**UV field-proven applications**

- APHA color 0 – 50
- ASTM color 0 – 8 ASTM units benzene 0 –100 ppm; in water
- Bisphenol A 0 –25 ppm and 0 - 100 ppm; in water
- chlorine 0 –30%; in propane
- chlorine 0 –10%; in NaOH+H2O
- chlorine 0 –2%; in HCl
- chlorine 0 –200 ppm; SO2 0–200 ppm; in vent gas (2 components)
- chlorine 0 –30%; in propylene
- dimethyl aniline 0–2000 ppm; in N2 saturated with water
- DMAC 0–1000 ppm; in water
- H2S 0 –10%; in H2
- H2S 0 – 4%; in N2
- Saybolt color -30 to +15
- SO2 0–500 ppm
- SO2 0–5000 ppm; in stack gas
- styrene 0 –20 ppm; butadiene in water total aminobenzenes as aniline 0 – 50 ppm
- total phenols as 2-chlorophenol 0 –25 ppm; in 33% HCl in H20