

# ASD25-N

## Single Channel NIR Absorption Probe



- Inline real-time process monitoring
- Concentration measurement insensitive to color changes
- Superior sapphire window with no seals, gaps or crevices
- Extremely low maintenance
- CIP/SIP-compatible
- Conforms to FDA requirements

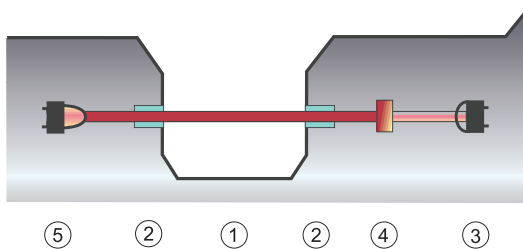
The ASD25-N is a high-precision, single channel absorption probe. This stainless steel probe is engineered for use in pilot- or production scale fermenters or bioreactors. It precisely measures the growth of microbial or cell cultures as a function of NIR absorption. The extremely durable ASD25-N probe is designed for sanitary bioprocess environments and can be used in CIP/SIP processes. The ASD25-N uses the light in the Near Infrared range (NIR) from 840 to 910 nm.

A precisely defined and constant LED light beam penetrates the process medium. The attenuation of the light intensity, caused by absorption and/or scattering by dissolved and undissolved substances, is detected by a hermetically sealed photodiode.

The ASD25-N probe is available with optical path lengths (OPL) of 1 mm, 5 mm, 10 mm or 20 mm. Shorter OPLs are typically used for dense cell cultures such as bacterial and yeast cultures.

Longer OPLs are used for lower absorbing mammalian cell cultures. The probe performs concentration measurements insensitive to color changes, since an optical filter adapts the wavelength range.

The seal-less, sapphire optical window design eliminates crevices and gaps to assure the highest level of sterility, cleanability and sensor integrity. The surface of the wetted parts is electro-polished and may optionally comply with BN2. The probe mounts conveniently through a standard 25 mm Ingold-type port.



### Type ASD25-N

- 1 Optical path length (OPL)
- 2 Sapphire windows
- 3 Detector
- 4 Day-light filter
- 5 LED-light source

# Technical Data

## ASD25-N Probe



### Material:

Wetted parts: stainless steel 1.4435 (SS 316 L),  
Surface: electro-polished  $Ra < 0.8 \mu m$  (standard)  
Windows: sapphire (without gasket)  
Housing: stainless steel 1.4571 (SS 316 Ti)

### Port gasket:

O-ring  $\varnothing$  18.64 x 3.53 mm

### Gasket material:

application specific, selection by end user

### Permitted:

EPDM (FDA), Silicone (FDA), Kalrez 6375,  
Chemraz (FDA), others on request

### Port connection:

for ports OSP25-GS60 (Ingold-type ports),  
Diameter: 25 mm ( $\varnothing$  25 H7)  
Nominal length: 60 and 30 mm  
Thread: G11/4" ISO 228/1

### Insertion depth maximal:

• OPL + 35 mm with port length 60 mm

### Optical path length (OPL):

1, 5, 10 or 20 mm

### Pressure rating:

PN10 (Test pressure PT 15 bar)

### Permitted pressure PS:

10 mbar - 10 bar with TS 0 °C / +100 °C

### Permitted pressure at elevated temperature:

TS [°C]	< 100	125	150
PS [bar]	10	8	6

### Permitted process temperature TS:

- permanent: +5 °C to +65 °C, (+41 °F to +149 °F)
  - peak (60 min/day): +5 °C to +135 °C, (+41 °F to +275 °F)
  - peak (30 min/day): +5 °C to +145 °C, (+41 °F to +293 °F)
- autoclaving is not possible, short term values are only valid if the LED is switched off

### Ambient temperature:

- operation: 0 °C to +40 °C, (+32 °F to +104 °F)
- transportation: -20 °C to +70 °C, (-4 °F to +158 °F)

### Air purge:

connections M5 available as standard

### Light source:

Hybrid LED, hermetically sealed

### Wavelength range:

840 - 910 nm

### Detector:

silicon photodiode, hermetically sealed

### Measuring range:

any measuring range between  
0 - 4 CU

### Cable connection:

probe cable ASD-CC, pluggable both sides  
2, 3, 5 or 10 m, (7, 10, 16 or 33 ft.)

### Weight:

- Probe: approx. 2.0 kg

### Type of protection:

IP65

### Certificates:

ISO 9001:2000, PED, CE, HPO

**Use with Fermenter Control converter!**

## Options



### ASD25-N-SR

wetted parts with surface electro-polished  
 $Ra < 0.4 \mu m$ ,  $dF < 1\%$  (BN2)

- Weld-in safety port AS25 installation angle 0° or 15°
- Sealing flange AS25
- Adapter-Varivent 50/0.0 AS25-G60
- Adapter-Clamp 2.0" AS25-G60
- T-pieces with port AS25-G60 for tube ends DIN: DN50 – DN150
- T-pieces with port AS25-G60 for tube ends OD, 2.0" – 6.0"