

# Small Module Membrane

## OVERVIEW

Air Liquide Advanced Separations (ALaS) offers two small module configurations: **4241** and **4121**. These units are predominantly incorporated into laboratory generators, food and beverage systems, nitrox applications, and military equipment. The models are operationally similar but differ with respect to geometry and associated N<sub>2</sub> output. By manufacturing the modules in a skiving process, ALaS capitalizes on the available efficiencies and module longevity associated with this method. For small-flow applications, the **4241** and **4121** provide users an effective and reliable solution within an efficient, lightweight design.

## OPERATING CHARACTERISTICS

MAXIMUM OPERATING TEMPERATURE	60°C (140°F)
MAXIMUM OPERATING PRESSURE	15.2 barg (220 psig)
MAXIMUM FEED AIR OIL CONTENT	< 5 µg/Nm <sup>3</sup>
NITROGEN MOISTURE CONTENT	< -70°C (-95°F) Dew Point

## PERFORMANCE DATA

Temp 40oC	Purity (%)						
	95	96	97	98	99	99.5	99.9
	<b>4241 Nitrogen Flow (Nm3/hr) / Feed air Flow (Nm3/hr)</b>						
<b>5</b>	3.7/8.2	3.1/7.6	2.6/7	2/6.4	1.4/5.6	1/5.1	0.6/4.5
<b>7</b>	6/12.4	5/11.5	4.1/10.5	3.3/9.5	2.3/8.2	1.6/7.5	0.9/6.5
<b>9</b>	8.3/16.9	7/15.5	5.8/14.1	4.6/12.7	3.1/10.9	2.3/9.9	1.2/8.5
<b>11</b>	10.8/21.4	9.1/19.5	7.5/17.8	5.9/16	4/13.7	2.9/12.3	1.5/10.5
<b>13</b>	13.3/25.9	11.2/23.7	9.2/21.5	7.2/19.2	5/16.4	3.6/14.7	1.9/12.6
<b>15</b>	15.9/30.5	13.4/27.8	11/25.2	8.6/22.5	5.9/19.1	4.3/17.1	2.2/14.6
	<b>4121 Nitrogen Flow (Nm3/hr) / Feed air Flow (Nm3/hr)</b>						
<b>5</b>	1/2.1	0.8/1.9	0.6/1.7	0.5/1.5	0.3/1.3	0.2/1.2	0.1/1
<b>7</b>	1.5/3.1	1.3/2.8	1/2.5	0.8/2.3	0.5/1.9	0.4/1.7	0.2/1.5
<b>9</b>	2.1/4.2	1.8/3.8	1.4/3.4	1.1/3	0.7/2.5	0.5/2.3	0.2/1.9
<b>11</b>	2.7/5.3	2.3/4.8	1.8/4.3	1.4/3.8	0.9/3.2	0.6/2.8	0.3/2.3
<b>13</b>	3.4/6.4	2.8/5.8	2.3/5.2	1.7/4.6	1.1/3.8	0.8/3.3	0.3/2.8
<b>15</b>	4/7.5	3.3/6.8	2.7/6	2.1/5.3	1.3/4.4	0.9/3.9	0.4/3.2

All values are based on mid aged condition (10,000 to 15,000 operating hours)

## 4241 MODULE



**DIAMETER**  
2.5 inches

**TOTAL LENGTH**  
39 inches

**WEIGHT**  
2.7 kg (6 lbs)

**VESSEL MATERIAL**  
Aluminum 6061-T6

## 4121 MODULE



**DIAMETER**  
1.5 inches

**TOTAL LENGTH**  
24 inches

**WEIGHT**  
1.1 kg (2.5 lbs)

**VESSEL MATERIAL**  
Aluminum 6061-T6

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