



## InP-based layers specifications

### InP layer on 2-inch InP substrate

Thickness uniformity <sup>(1)</sup>	Unintentional carrier concentr. (cm <sup>-3</sup> )	n- doping limit (cm <sup>-3</sup> )	p-doping limit (cm <sup>-3</sup> )	Carrier mobility at n=2*10 <sup>17</sup> (cm <sup>2</sup> /V*s)	Carrier conc. uniformity <sup>(1)</sup>
±1.0%	n-type 10 <sup>15</sup>	7*10 <sup>18</sup>	3*10 <sup>18</sup>	2900	±10%

<sup>(1)</sup> within 90% of the wafer radius

### InGaAs/InP lattice-matched layer on 2-inch InP substrate

In<sub>0.53</sub>Ga<sub>0.47</sub>As layer on 2-inch InP substrate

Thickness uniformity <sup>(1)</sup>	Composition uniformity <sup>(1)</sup>	Unintentional carrier concentr. (cm <sup>-3</sup> )	p-doping limit (cm <sup>-3</sup> )	Carrier mobility at n=10 <sup>15</sup> cm <sup>-3</sup> (cm <sup>2</sup> /V*s)	Carrier conc. uniformity <sup>(1)</sup>
±1.0%	x=0.529-0.536 (Δa/a=±240 ppm)	n-type 10 <sup>15</sup>	4*10 <sup>19</sup>	>9000	±10%

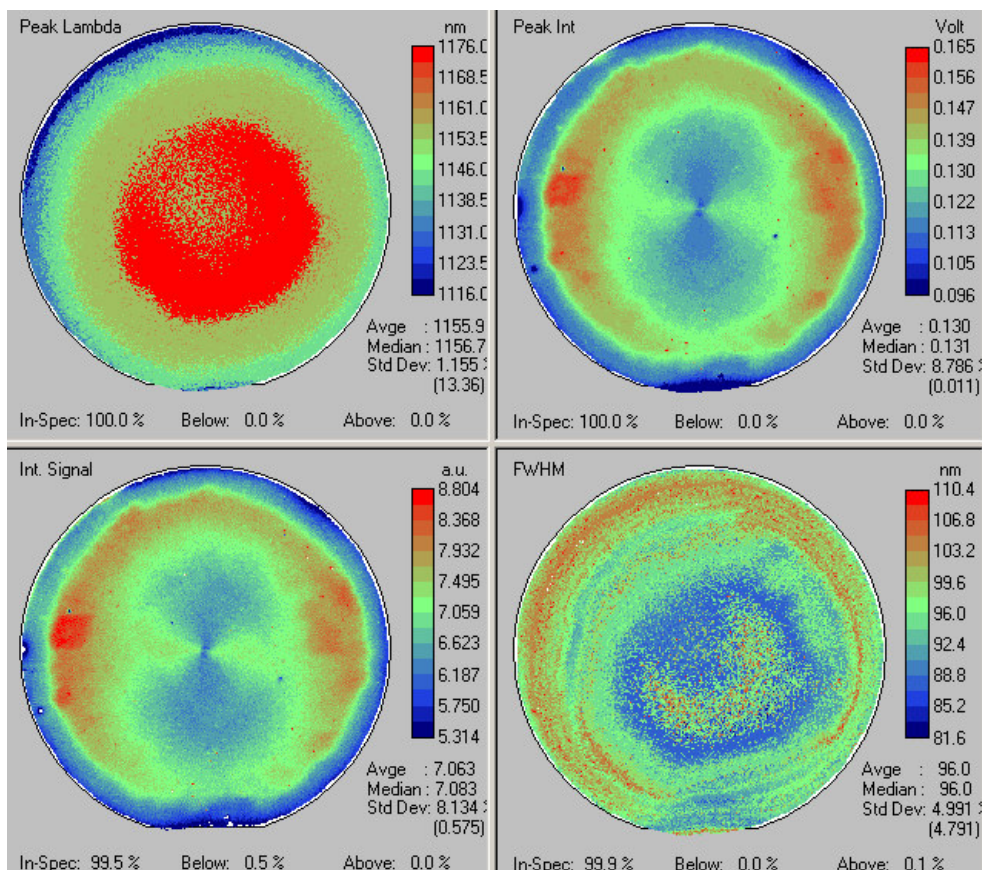
<sup>(1)</sup> within 90% of the wafer radius

## InGaAsP/InP layer on 2-inch InP substrate

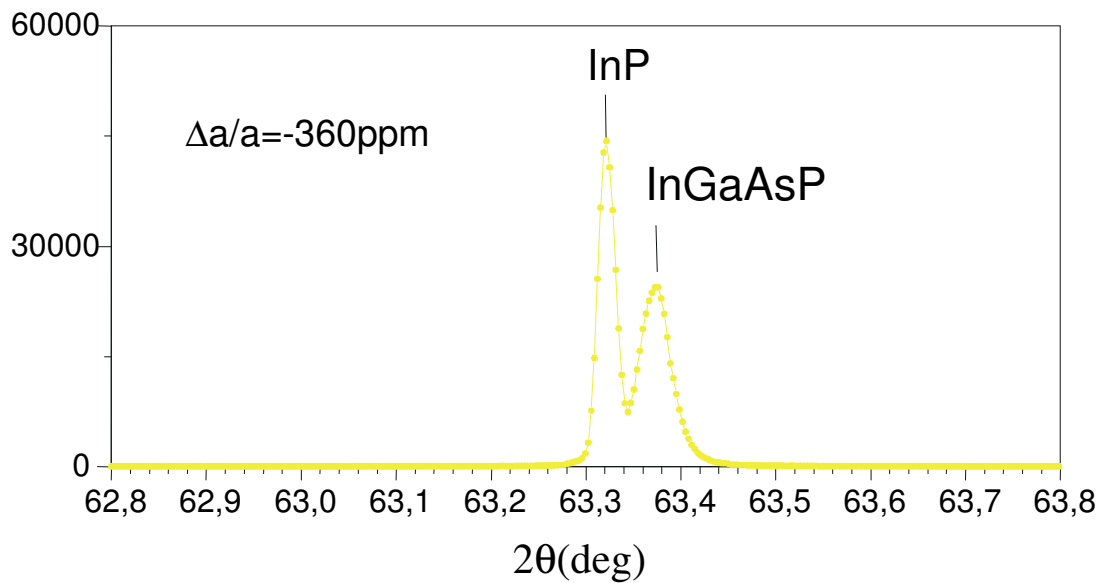
$\text{In}_{0.58}\text{Ga}_{0.42}\text{As}_{0.90}\text{P}_{0.10}/\text{InP}$  ( $\lambda=1.55\mu\text{m}$ ) lattice-matched layer on 2-inch InP substrate

Thickness uniformity <sup>(1)</sup>	Composition uniformity <sup>(1)</sup>	Photolumuminescence maximum uniformity <sup>(1)</sup>
±1.3%	x=0.578-0.583 y=0.897-0.903 ( $\Delta a/a=\pm 150\text{ppm}$ )	±3nm (1.547-1.5603 $\mu\text{m}$ )

<sup>(1)</sup> within 90% of the wafer radius



Photoluminescence map of  $\text{In}_{0.82}\text{Ga}_{0.18}\text{As}_{0.40}\text{P}_{0.60}/\text{InP}$  ( $\lambda=1.15\mu\text{m}$ ) lattice-matched layer on 2-inch InP substrate.



XRD rocking curve of InGaAsP/InP layer.

### Other InP-based layers:

- InAlAs/InP (typically lattice-matched)
- InAlGaAs/InP (typically lattice-matched)

**Epi-Lab.com**  
**[www.Epi-Lab.com](http://www.Epi-Lab.com)**

**Wolczynska Str. 133**  
**01-919 Warsaw, Poland**  
**Tel: (+48) 22 8353041 ext.465**  
**Fax: (+48) 22 8645496**  
**E-mail: [Epi-Lab@Epi-Lab.com](mailto:Epi-Lab@Epi-Lab.com)**