

## Panorama - Full Aroma Hops

---

- Gravity **13.9 BLG**
- ABV ---
- IBU **66**
- SRM **4.4**

### Batch size

- Expected quantity of finished beer **18 liter(s)**
- Trub loss **15 %**
- Size with trub loss **20.7 liter(s)**
- Boil time **90 min**
- Evaporation rate **15 %/h**
- Boil size **25.4 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15 liter(s)**
- Total mash volume **20 liter(s)**

### Steps

- Temp **40 C**, Time **10 min**
- Temp **62 C**, Time **15 min**
- Temp **71 C**, Time **45 min**
- Temp **75 C**, Time **10 min**

### Mash step by step

- Heat up **15 liter(s)** of strike water to **43.3C**
- Add grains
- Keep mash **10 min** at **40C**
- Keep mash **15 min** at **62C**
- Keep mash **45 min** at **71C**
- Keep mash **10 min** at **75C**
- Sparge using **15.4 liter(s)** of **76C** water or to achieve **25.4 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	5 kg (100%)	80 %	4

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	27 g	90 min	11.5 %
Boil	Lublin (Lubelski)	66 g	45 min	4 %
Dry Hop	Lublin (Lubelski)	24 g	7 day(s)	4 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11 g	Safale