Full Aroma Hops

- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **65**
- SRM **4.1**

Batch size

- Expected quantity of finished beer **28 liter(s)**
- Trub loss **5 %**
- Size with trub loss **29.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **35.4 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **21 liter(s)**
- Total mash volume **28 liter(s)**

Steps

- Temp **40 C**, Time **0 min**
- Temp **61 C**, Time **10 min**
- Temp **71 C**, Time **45 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **21 liter(s)** of strike water to **43.3C**
- Add grains
- Keep mash **0 min** at **40C**
- Keep mash **10 min** at **61C**
- Keep mash **45 min** at **71C**
- Keep mash **10 min** at **76C**
- Sparge using **21.4 liter(s)** of **76C** water or to achieve **35.4 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	7 kg *(100%)*	80 %	5

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	40 g	90 min	13.5 %
Boil	Lublin (Lubelski)	60 g	45 min	4 %
Aroma (end of boil)	Lublin (Lubelski)	20 g	10 min	4 %
Dry Hop	Lublin (Lubelski)	20 g	10 day(s)	4 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Safale