Full Aroma Hops

- Gravity **11.9 BLG**
- ABV **---**
- IBU **37**
- SRM **3.8**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **23.1 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **14 liter(s)**
- Total mash volume **18 liter(s)**

Steps

- Temp **62 C**, Time **10 min**
- Temp **72 C**, Time **45 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **14 liter(s)** of strike water to **68C**
- Add grains
- Keep mash **10 min** at **62C**
- Keep mash **45 min** at **72C**
- Keep mash **10 min** at **76C**
- Sparge using **13.1 liter(s)** of **76C** water or to achieve **23.1 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	4 kg *(100%)*	81 %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	25 g	60 min	9.5 %
Boil	Lublin (Lubelski)	30 g	15 min	3.6 %
Boil	Marynka	5 g	5 min	9.5 %

Yeasts

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