

Thomas

- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **64**
- SRM **26.9**

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 **25.3 liter(s)**

Mash information

- Mash efficiency **60 %**
- Liquor-to-grist ratio **3.8 liter(s) / kg**
- Mash size **22.2 liter(s)**
- Total mash volume **28.1 liter(s)**

Steps

- Temp **66 C**, Time **60 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **22.2 liter(s)** of strike water to **72.1C**
- Add grains
- Keep mash **60 min** at **66C**
- Keep mash **5 min** at **78C**
- Sparge using **9 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	5 kg (82%)	82 %	4
Grain	Strzegom Karmel 150	0.1 kg (1.6%)	75 %	150
Grain	Weyermann - Carafa II	0.5 kg (8.2%)	70 %	837
Grain	Biscuit Malt	0.25 kg (4.1%)	79 %	45
Sugar	Brown Sugar, Dark	0.25 kg (4.1%)	100 %	99

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	40 g	60 min	10 %
Boil	Cascade	25 g	45 min	6 %
Boil	Fuggles	25 g	15 min	4.5 %
Aroma (end of boil)	Cascade	25 g	0 min	6 %
Dry Hop	Cascade	50 g	4 day(s)	6 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	11.5 g	Fermentis