Doppler

- Gravity **24.2 BLG**
- ABV **11.2 %**
- IBU **26**
- SRM **19.3**
- Style **Doppelbock**

Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **4 %**
- Size with trub loss **22.9 liter(s)**
- Boil time **120 min**
- Evaporation rate **10 %/h**
- Boil size **28.8 liter(s)**

Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **1.95 liter(s) / kg**
- Mash size **21.8 liter(s)**
- Total mash volume **33 liter(s)**

Steps

- Temp **63 C**, Time **60 min**
- Temp **72 C**, Time **20 min**

Mash step by step

- Heat up **21.8 liter(s)** of strike water to **74C**
- Add grains
- Keep mash **60 min** at **63C**
- Keep mash **20 min** at **72C**
- Sparge using **18.2 liter(s)** of **76C** water or to achieve **28.8 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale	9 kg *(80.4%)*	80 %	7
Grain	Żytni	1 kg *(8.9%)*	85 %	8
Grain	Abbey Castle	0.5 kg *(4.5%)*	80 %	45
Grain	słód specjal B 260-320EBC	0.7 kg *(6.3%)*	80 %	300

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Iunga	35 g	60 min	11 %

Yeasts

Name	Type	Form	Amount	Laboratory
munich lager	Lager	Slant	300 ml	---