

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 | lunga | 35 g | 60 min | 11 % |

Yeasts

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