

czarne

- Gravity **15 BLG**
- ABV **6.2 %**
- IBU **33**
- SRM **25.8**
- Style **Dry Stout**

Batch size

- Expected quantity of finished beer **19.2 liter(s)**
- Trub loss **5 %**
- Size with trub loss **20.2 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **24.7 liter(s)**

Mash information

- Mash efficiency **68 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **22.8 liter(s)**
- Total mash volume **29.3 liter(s)**

Steps

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

Mash step by step

- Heat up **22.8 liter(s)** of strike water to **69.1C**
- Add grains
- Keep mash **60 min** at **63C**
- Sparge using **8.4 liter(s)** of **76C** water or to achieve **24.7 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|--------------------------------|----------------|-------|------|
| Grain | Briess - Pale Ale Malt | 6 kg (92.3%) | 80 % | 7 |
| Grain | Strzegom Czekoladowy ciemny | 0.25 kg (3.8%) | 68 % | 1200 |
| Grain | Strzegom Czekoladowy jasny | 0.25 kg (3.8%) | 68 % | 400 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|---------|--------|--------|------------|
| Boil | Marynka | 30 g | 60 min | 7.1 % |
| Aroma (end of boil) | Magnum | 25 g | 5 min | 12 % |
| Boil | Magnum | 5 g | 30 min | 12 % |