

- Gravity **15.9 BLG**
- ABV **6.7 %**
- IBU **83**
- SRM **29.7**
- Style **Black IPA**

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 **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **19.8 liter(s)**
- Total mash volume **26.4 liter(s)**

Steps

- Temp **52 C**, Time **15 min**
- Temp **62 C**, Time **60 min**
- Temp **71 C**, Time **25 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **19.8 liter(s)** of strike water to **57.3C**
- Add grains
- Keep mash **15 min** at **52C**
- Keep mash **60 min** at **62C**
- Keep mash **25 min** at **71C**
- Keep mash **10 min** at **76C**
- Sparge using **12.1 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|--------------------------|---------------|-------|-----|
| Grain | Briess - Pale Ale Malt | 5 kg (75.8%) | 80 % | 7 |
| Grain | Karmelowy Jasny 30EBC | 0.4 kg (6.1%) | 75 % | 30 |
| Grain | Czekoladowy | 0.3 kg (4.5%) | 60 % | 788 |
| Grain | Carafa special I | 0.2 kg (3%) | 70 % | 900 |
| Grain | Płatki owsiane | 0.3 kg (4.5%) | 85 % | 3 |
| Grain | Jęczmień palony | 0.1 kg (1.5%) | 20 % | 985 |
| Grain | Strzegom Wiedeński | 0.3 kg (4.5%) | 79 % | 10 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|-----------|-----------------------|--------|----------|------------|
| Boil | Bravo | 25 g | 60 min | 15.5 % |
| Boil | Bravo | 25 g | 10 min | 15.5 % |
| Dry Hop | Cascade | 150 g | 5 day(s) | 6 % |
| Whirlpool | Cascade | 75 g | 30 min | 6 % |
| Whirlpool | Saaz (Czech Republic) | 25 g | 30 min | 4.5 % |

| | | | | |
|-----------|--------|------|--------|------|
| Whirlpool | Mosaic | 30 g | 30 min | 10 % |
|-----------|--------|------|--------|------|

Notes

- Słody Czekoladowy i Carafa specjal I dodać na mash out
Palony jęczmień zalać wodą w stosunku 3:1 na 24h i dodać przy wyładzaniu w stosunku
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