

# Black Bolt - Imperial Cascadian Pale Ale

- Gravity **22.7 BLG**
- ABV **10.3 %**
- IBU **115**
- SRM **60.2**
- Style **Black IPA**

## Batch size

- Expected quantity of finished beer **10 liter(s)**
- Trub loss **5 %**
- Size with trub loss **11 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **13.2 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **2.5 liter(s) / kg**
- Mash size **12 liter(s)**
- Total mash volume **16.8 liter(s)**

## Steps

- Temp **68 C**, Time **90 min**
- Temp **72 C**, Time **20 min**

## Mash step by step

- Heat up **12 liter(s)** of strike water to **77.6C**
- Add grains
- Keep mash **90 min** at **68C**
- Keep mash **20 min** at **72C**
- Sparge using **6 liter(s)** of **76C** water or to achieve **13.2 liter(s)** of wort

## Fermentables

| Type  | Name                            | Amount         | Yield | EBC  |
|-------|---------------------------------|----------------|-------|------|
| Grain | Weyermann - Pale Ale Malt       | 3.5 kg (72.9%) | 85 %  | 7    |
| Grain | Pszeniczny                      | 0.5 kg (10.4%) | 85 %  | 4    |
| Grain | Weyermann - Dehusked Carafa III | 0.5 kg (10.4%) | 70 %  | 1024 |
| Grain | Jęczmień palony                 | 0.3 kg (6.3%)  | 55 %  | 985  |

## Hops

| Use for             | Name    | Amount | Time     | Alpha acid |
|---------------------|---------|--------|----------|------------|
| Boil                | Citra   | 40 g   | 60 min   | 13.5 %     |
| Boil                | Citra   | 20 g   | 20 min   | 13.5 %     |
| Aroma (end of boil) | Cascade | 30 g   | 1 min    | 7.1 %      |
| Whirlpool           | Cascade | 30 g   | 45 min   | 7.1 %      |
| Dry Hop             | Citra   | 40 g   | 3 day(s) | 13.5 %     |
| Dry Hop             | Cascade | 40 g   | 3 day(s) | 7.1 %      |

## Yeasts

| Name  | Type | Form  | Amount | Laboratory |
|-------|------|-------|--------|------------|
| US-05 | Ale  | Slant | 200 ml | ---        |