

## ciemno to widze

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- Gravity **16.6 BLG**
- ABV **7 %**
- IBU **64**
- SRM **30.9**

### Batch size

- Expected quantity of finished beer **11 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **14.5 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **11.4 liter(s)**
- Total mash volume **15.2 liter(s)**

### Steps

- Temp **62 C**, Time **45 min**
- Temp **68 C**, Time **30 min**
- Temp **55 C**, Time **10 min**

### Mash step by step

- Heat up **11.4 liter(s)** of strike water to **60.8C**
- Add grains
- Keep mash **10 min** at **55C**
- Keep mash **45 min** at **62C**
- Keep mash **30 min** at **68C**
- Sparge using **6.9 liter(s)** of **76C** water or to achieve **14.5 liter(s)** of wort

### Fermentables

| Type  | Name                          | Amount         | Yield  | EBC  |
|-------|-------------------------------|----------------|--------|------|
| Grain | Weyermann - Pale Ale Malt     | 1.7 kg (44.9%) | 85 %   | 7    |
| Grain | Weyermann - Pilsner Malt      | 1.2 kg (31.7%) | 81 %   | 5    |
| Grain | Carafa III                    | 0.07 kg (1.8%) | 70 %   | 1034 |
| Grain | Weyermann - Carafa I          | 0.07 kg (1.8%) | 70 %   | 690  |
| Grain | castlemelting black           | 0.15 kg (4%)   | 72 %   | 1350 |
| Grain | viking malt honing/crystal10l | 0.1 kg (2.6%)  | 78.5 % | 20   |
| Grain | Rye, Flaked                   | 0.5 kg (13.2%) | 78.3 % | 4    |

### Hops

| Use for | Name    | Amount | Time   | Alpha acid |
|---------|---------|--------|--------|------------|
| Boil    | Chinook | 5 g    | 45 min | 12.8 %     |
| Boil    | Crystal | 10 g   | 45 min | 4.5 %      |
| Boil    | Apollo  | 10 g   | 60 min | 17 %       |
| Boil    | Apollo  | 10 g   | 15 min | 17 %       |
| Boil    | Crystal | 10 g   | 5 min  | 4.5 %      |

|         |         |      |          |        |
|---------|---------|------|----------|--------|
| Boil    | Chinook | 10 g | 5 min    | 12.8 % |
| Dry Hop | Chinook | 35 g | 7 day(s) | 12.8 % |
| Dry Hop | Crystal | 20 g | 7 day(s) | 4.5 %  |

## Yeasts

| Name             | Type | Form | Amount | Laboratory   |
|------------------|------|------|--------|--------------|
| librty balle ale | Ale  | Dry  | 5 g    | mogrove jack |