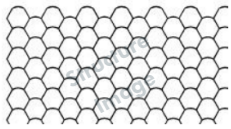
# ORALITE® 5900

**High Intensity Prismatic Grade**



## Reflective Properties

Cell structure:



Reflective Technology: Prismatic , Reflectivity classes: RA2, Reflective film structure: C, Reflection norm: ORALITE® 5900 - Tabelle 1 (DIN 67520:2013-10 RA2), ORALITE® 5900 - Tabelle 2 (ASTM D4956 (Typ IV)), ORALITE® 5900 - Tabelle 3 (DIN 6171: 2003-08), ORALITE® 5900 - Tabelle 4 (ASTM D4956 (Typ IV))

## Areas of Application

- Traffic signs
- Construction sites
- Advertising & signage
- Traffic & transportation

## Colours

ORALITE® 5900 is available in the following colours: White (F010), Yellow (F020), Red (F030), Orange (F035), Blue (F050), Green (F060), Brown (F080), Yellow-Green fluorescent (F029), Yellow fluorescent (F037)

## Total thickness

- 0.23 mm (Average value, without protective liner and adhesive)

## Front material

Acrylic film

## Liner

One-sided silicon-coated PP film, 0.075 mm

## Adhesive

Solvent-polyacrylate, White

**ORAFOL Europe GmbH**
Orafolstrasse 1
D-16515 Oranienburg
Germany

Tel: +49 (0)3301 864-0
reflective.solutions@orafol.de
www.orafol.com

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## Technical properties

### RESISTANCE

| | | |
|---|---|---|
| Resistance to cleaning agents | No change | adhered on aluminium \| 0.5 % household cleaning agent) at room temperature and 65 °C |
| Durability | 10 Year(s) | unprinted, with professional processing, with vertical outdoor weathering, central European normal climate |
| Shelf Life | 1 Year(s) | in original packaging, at 20 °C and 50 % relative humidity |
| Temperature resistance | Minimum temperature -56 °C<br>Maximum temperature 82 °C | adhered on aluminium |

### ADHESIVE PROPERTIES

| | | |
|---|---|---|
| Adhesive power | 15 N/25 mm | after 24 h, on stainless steel \| Average value, FINAT TM 1 |

### PROCESSING

| | | |
|---|---|---|
| Recommended printing procedure | Screen printing, Digital print with UV-curing inks | |
| Suitable substrate | Aluminium, Galvanised sheet steel | |
| Application temperature | Minimum temperature 10 °C | |

### Table 1 - Specific coefficient of retroreflection R' in cd / (lx m²) (New condition; DIN 67520:2013-10 RA2)

| Observation Angle | 0.20° | | | 0.33° | | | 2.00° | | |
|---|---|---|---|---|---|---|---|---|---|
| **Entrance angle** | **5°** | **30°** | **40°** | **5°** | **30°** | **40°** | **5°** | **30°** | **40°** |
| **White** | 250 | 150 | 110 | 180 | 100 | 95 | 5 | 2.5 | 1.5 |
| **Yellow** | 170 | 100 | 70 | 122 | 70 | 64 | 3 | 1.5 | 1 |
| **Orange** | 100 | 60 | 29 | 65 | 40 | 20 | 1.5 | 1.0 | # |
| **Red** | 45 | 25 | 15 | 25 | 14 | 13 | 1.0 | 0.4 | 0.3 |
| **Green** | 45 | 25 | 12 | 21 | 12 | 11 | 0.5 | 0.3 | 0.2 |

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| Observation Angle | 0.20° | | | 0.33° | | | 2.00° | | |
|---|---|---|---|---|---|---|---|---|---|
| **Entrance angle** | **5°** | **30°** | **40°** | **5°** | **30°** | **40°** | **5°** | **30°** | **40°** |
| **Blue** | 20 | 11 | 8 | 14 | 8 | 7 | 0.2 | # | # |
| **Brown** | 12 | 8.5 | 5 | 8 | 5 | 3 | 0.2 | # | # |

**Table 2 - Specific coefficient of retroreflection R' in cd / (lx m²) (New condition; ASTM D4956 (type IV))**

| Observation Angle | 0.10° | | 0.20° | | 0.50° | |
|---|---|---|---|---|---|---|
| **Entrance angle** | **-4°** | **30°** | **-4°** | **30°** | **-4°** | **30°** |
| **White** | 500 | 240 | 360 | 170 | 150 | 72 |
| **Yellow** | 380 | 175 | 270 | 135 | 110 | 54 |
| **Orange** | 200 | 94 | 145 | 68 | 60 | 28 |
| **Red** | 90 | 42 | 65 | 30 | 27 | 13 |
| **Green** | 70 | 32 | 50 | 25 | 21 | 10 |
| **Blue** | 42 | 20 | 30 | 14 | 13 | 6 |
| **Brown** | 25 | 12 | 18 | 8.5 | 7.5 | 3.5 |
| **fl. yellow-green** | 400 | 185 | 290 | 135 | 120 | 55 |
| **fl. yellow** | 300 | 140 | 220 | 100 | 90 | 40 |

**Table 3 - Chromaticity coordinates (Colour specification limits at daylight; New condition; DIN 6171: 2003-08)**

| Colours | 1 | | 2 | | 3 | | 4 | | Luminance factor β |
|---|---|---|---|---|---|---|---|---|---|
| | **x** | **y** | **x** | **y** | **x** | **y** | **x** | **y** | |
| **White** | 0.305 | 0.315 | 0.335 | 0.345 | 0.325 | 0.355 | 0.295 | 0.325 | □ 0.27 |
| **Yellow** | 0.494 | 0.505 | 0.470 | 0.480 | 0.513 | 0.437 | 0.545 | 0.454 | > 0.16 |
| **Orange** | 0.610 | 0.390 | 0.535 | 0.375 | 0.506 | 0.404 | 0.570 | 0.429 | □ 0.14 |
| **Red** | 0.735 | 0.265 | 0.700 | 0.250 | 0.610 | 0.340 | 0.660 | 0.340 | □ 0.03 |

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| Colours | 1 | | 2 | | 3 | | 4 | | Luminance factor β |
|---|---|---|---|---|---|---|---|---|---|
| | x | y | x | y | x | y | x | y | |
| **Green** | 0.110 | 0.415 | 0.170 | 0.415 | 0.170 | 0.500 | 0.110 | 0.500 | □ 0.03 |
| **Blue** | 0.130 | 0.090 | 0.160 | 0.090 | 0.160 | 0.140 | 0.130 | 0.140 | □ 0.01 |
| **Brown** | 0.455 | 0.397 | 0.523 | 0.429 | 0.479 | 0.373 | 0.558 | 0.394 | 0.03 – 0.09 |

**Table 4 - Chromaticity coordinates (Colour specification limits at daylight; New condition; ASTM D4956 (type IV))**

| Colours | 1 | | 2 | | 3 | | 4 | | Luminance factor (Y %) |
|---|---|---|---|---|---|---|---|---|---|
| | x | y | x | y | x | y | x | y | |
| **White** | 0.303 | 0.300 | 0.368 | 0.366 | 0.340 | 0.393 | 0.274 | 0.329 | □ 27 |
| **Yellow** | 0.498 | 0.412 | 0.557 | 0.442 | 0.479 | 0.520 | 0.438 | 0.472 | 15 □ Y □ 45 |
| **Orange** | 0.558 | 0.352 | 0.636 | 0.364 | 0.570 | 0.429 | 0.506 | 0.404 | 10 □ Y □ 30 |
| **Red** | 0.648 | 0.351 | 0.735 | 0.265 | 0.629 | 0.281 | 0.565 | 0.346 | 2.5 □ Y □ 15 |
| **Green** | 0.026 | 0.399 | 0.166 | 0.364 | 0.286 | 0.446 | 0.207 | 0.771 | 3 □ Y □ 12 |
| **Blue** | 0.140 | 0.035 | 0.244 | 0.210 | 0.190 | 0.255 | 0.065 | 0.216 | 1 □ Y □ 10 |
| **Brown** | 0.430 | 0.340 | 0.610 | 0.390 | 0.550 | 0.450 | 0.430 | 0.390 | 1 □ Y □ 9 |
| **fl. yellow-green** | 0.387 | 0.610 | 0.369 | 0.546 | 0.428 | 0.496 | 0.460 | 0.540 | □ 60 |
| **fl. yellow** | 0.479 | 0.520 | 0.446 | 0.483 | 0.512 | 0.421 | 0.557 | 0.442 | □ 40 |

## PRODUCT NOTE

The substrate to be bonded must be free of dust, grease or other contamination, which can affect the adhesive strength of the material. Re-coatings must be completely cured. Application tests with the planned coatings have to be performed in advance to determine the compatibility. For other application areas the user is responsible for testing and assessing whether the product is suitable and whether risks may arise from its use. ORALITE® 5900 white can be printed by means of digital or screen printing or laminated with overlay films The printed or laminated material still fulfils the specifications for reflectance values of this colour if the ORAFOL processing instructions are observed. The recommended overlay films are ORALITE® 5061 Transparent Film, ORALITE® 5090 Anti-Dew Film and ORALITE® 5095 Anti-Graffiti Film. We recommend ORALITE® 5018 as the screen printing ink. Clear varnish is not required. The material can also be printed with the ORALITE® UV Traffic Sign Printer and the specifically developed UV digital inks ORALITE® 5019. For long-term, vertical applications outdoors, it is recommended to use the printed material in combination with ORALITE® 5061 Transparent Film. For detailed information please use the processing instructions published by ORAFOL No. 4.3. or contact the responsible employee of the ORAFOL Reflective Solutions Division. All ORALITE® products are subject to thorough quality control in accordance with ISO 9001:2015 during the entire manufacturing process and traceability is ensured through the roll number.

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## IMPORTANT NOTES

Observe the relevant national specifications when using the ORALITE® films. ORAFOL recommends that you obtain the current specifications from your local authority and ensure that the product complies with them. For further information, please contact ORAFOL directly. All ORALITE® products are subject to thorough quality control during the entire manufacturing process. It is ensured that they are of merchantable quality and free from manufacturing defects. The information published on the ORALITE® products is based on research results which the company considers to be reliable, but which do not constitute a guarantee. In view of the wide range of applications of ORALITE® products and the continuous development of new applications, the buyer should carefully weigh up the suitability and performance of the product for the respective purpose and they bear all risks in connection with such use. All specifications may be changed without advance notice. Any warranty is excluded for applications which are not listed in the Technical Data sheet or which are not performed in accordance with the processing guidelines set out by ORAFOL. The durability of the shields depends on a multitude of factors, such as for example the selection and preparation of the substrate, compliance with the recommended processing guidelines, the geographical application area, the weather conditions as well as the maintenance of the product and the finished shield. ORAFOL does not accept any liability for defects which can be traced back to an unsuitable substrate or inadequate surface preparation. You can find comprehensive information in the warranty document under www.orafol.com. ORALITE® is a trademark of ORAFOL Europe GmbH.

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