


RMN-GP's store offers the sale and communication of high-quality 3D scan files  
5 June 2022, screencapture of [https://www.photo.rmn.fr/CS.aspx?VP3=CMS3&VF=RMNR5N\\_92\\_VForm&FRM=Frame%3aRMNR5N\\_95](https://www.photo.rmn.fr/CS.aspx?VP3=CMS3&VF=RMNR5N_92_VForm&FRM=Frame%3aRMNR5N_95)

Text : « Discover our catalog of 3D reproductions from the most beautiful French museum collections!  
These 3D reproductions return in the smallest details the geometry and the original materials of the real works. »

ENGLISH  
TRANSLATION/FACSIMILE



Recherche avancée

Agence | Collections | Thèmes | Magazine


Sélections | Panier (0) | Commandes | Cos

**Collections**


- Paris et la région parisienne
- Les collections de région
- Les collections étrangères
- Les fonds photographiques
- Les collections 3D

## Les collections 3D


Découvrez notre catalogue de reproductions 3D des plus belles collections muséales françaises !  
Ces reproductions 3D restituent dans les moindres détails la géométrie et les matériaux originaux des oeuvres réelles.




**Musée du Louvre**  
[VOIR LA COLLECTION 3D](#)




**Musée d'Orsay**  
[VOIR LA COLLECTION 3D](#)




**Saint Germain-en-Laye, Musée d'Archéologie nationale**  
[VOIR LA COLLECTION 3D](#)




**Thermes et hôtel de Cluny, Musée National du Moyen-Âge**  
[VOIR LA COLLECTION 3D](#)




**Musée National des Arts asiatiques - Guimet**  
[VOIR LA COLLECTION 3D](#)




**Musée de l'Armée**  
[VOIR LA COLLECTION 3D](#)




**Musée Gustave Moreau**  
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**Ecouen, Musée National de la Renaissance**  
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**Châteaux et musées de Malmaison et Bois-Préau**  
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**Biérancourt, Musée franco-américain**  
[VOIR LA COLLECTION 3D](#)



**Pau, Musée National du Château**  
[VOIR LA COLLECTION 3D](#)

RMN-GP's store offers the sale and communication of high-quality 3D scan files of the work « *Panthère marchant* »  
5 June 2022, screencapture of [https://www.photo.rmn.fr/C.aspx?VP3=SearchResult\\_VPage&STID=2C6NU0AKQ9ZLI](https://www.photo.rmn.fr/C.aspx?VP3=SearchResult_VPage&STID=2C6NU0AKQ9ZLI)  
(the first two pages refer to inoperable pages)

L'AGENCE PHOTO

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Lightboxes Cart (0) Orders Cosmo ▼ FR EN

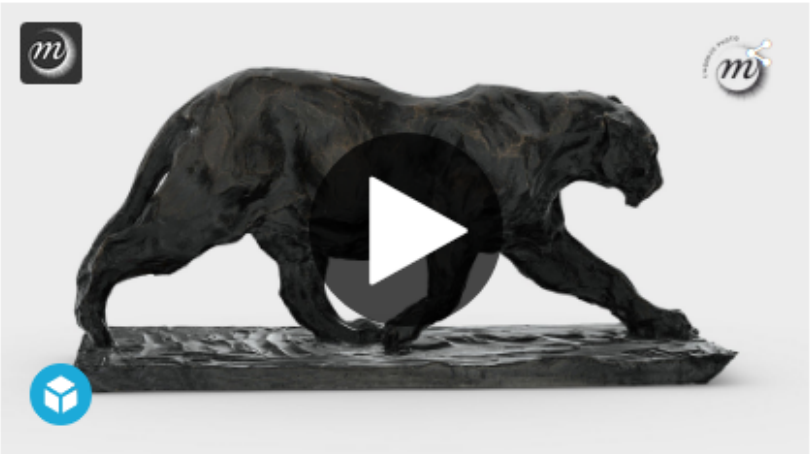
Active Lightbox:  
Ma Sélection (0) Open Lightboxes

Items per page Display  
Print 60 Flow

< Page 1 of 1 >

### Panthère marchant

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## Panthère marchant

Bugatti Rembrandt (1884-1916) (d'après), sculpteur italien

|                   |   |
|-------------------|---|
| SYSTEM IDENTIFIER | R6N135437   |
| INVENTORY NUMBER  | RF005988  |
| FONDS             | Sculpture   |
| DESCRIPTION:      | Moulage de RF3573, musée d'Orsay Paris.   |
| PERIOD            | <a href="#">Europe (période) - période contemporaine de 1914 à nos jours</a>  |
| TECHNIC/MATERIAL  | <a href="#">moulé (technique), patiné, résine synthétique</a>   |
| DIMENSIONS        | Hauteur : 0.24 m<br>Largeur : 0.49 m<br>Profondeur : 0.23 m   |
| LOCALIZATION      | Saint-Denis, ateliers d'art des musées nationaux, moulage et chalcographie  |
| CREDIT            | Photo (C) RMN-Grand Palais (Ateliers d'art des musées nationaux, moulage et chalcographie) / image RMN-GP                               |
| KEYWORDS          | <a href="#">3D</a> , <a href="#">copie d'oeuvre</a> , <a href="#">moulage</a> , <a href="#">panthère</a> , <a href="#">statuette</a>    |
| PERMALINK         | <a href="https://www.photo.rmn.fr/archive/R6N135437-2CMFQEQ2BIDO.html">https://www.photo.rmn.fr/archive/R6N135437-2CMFQEQ2BIDO.html</a> |

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[Print](#)

RMN-GP's store offers the sale and communication of high-quality 3D scan files of the work « *Panthère marchant* »  
5 June 2022, screencapture of <https://www.photo.rmn.fr/mycart> (the red lines are added and do not appear on the original page)

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Lightboxes Cart (1) Orders Cosmo ▼ FR EN

1 items in My Cart [Empty cart](#)

AUTHORIZATION  
REQUIRED



R0N135437  
**Bugatti Rembrandt (1884-1916)**  
(d'après)  
Photo (C) RMN-Grand Palais  
(Ateliers d'art des musées  
nationaux, moulage et  
chalcographie) / image RMN-GP  
Saint-Denis, ateliers d'art des musées  
nationaux, moulage et chalcographie  
**Panthère marchant**  
px × px (~ MB)  
[Add to lightbox](#)

SÉLECTIONNEZ LE TYPE DE PROJET

Usage privé sans divulgation (taille max. 2.000x3.000 pixels) ▼ \*

SÉLECTIONNEZ LA NATURE DU SUPPORT DE REPRODUCTION

Tirage couleur ▼ \*

SÉLECTIONNER UN MODE D'EXPÉDITION

Votre compte poste express (UPS, DHL, Fedex...) ▼ \*

Authorization required


Scan required

[Copy the above usage to all items in the cart](#)

[Duplicate this item for different usage request](#)

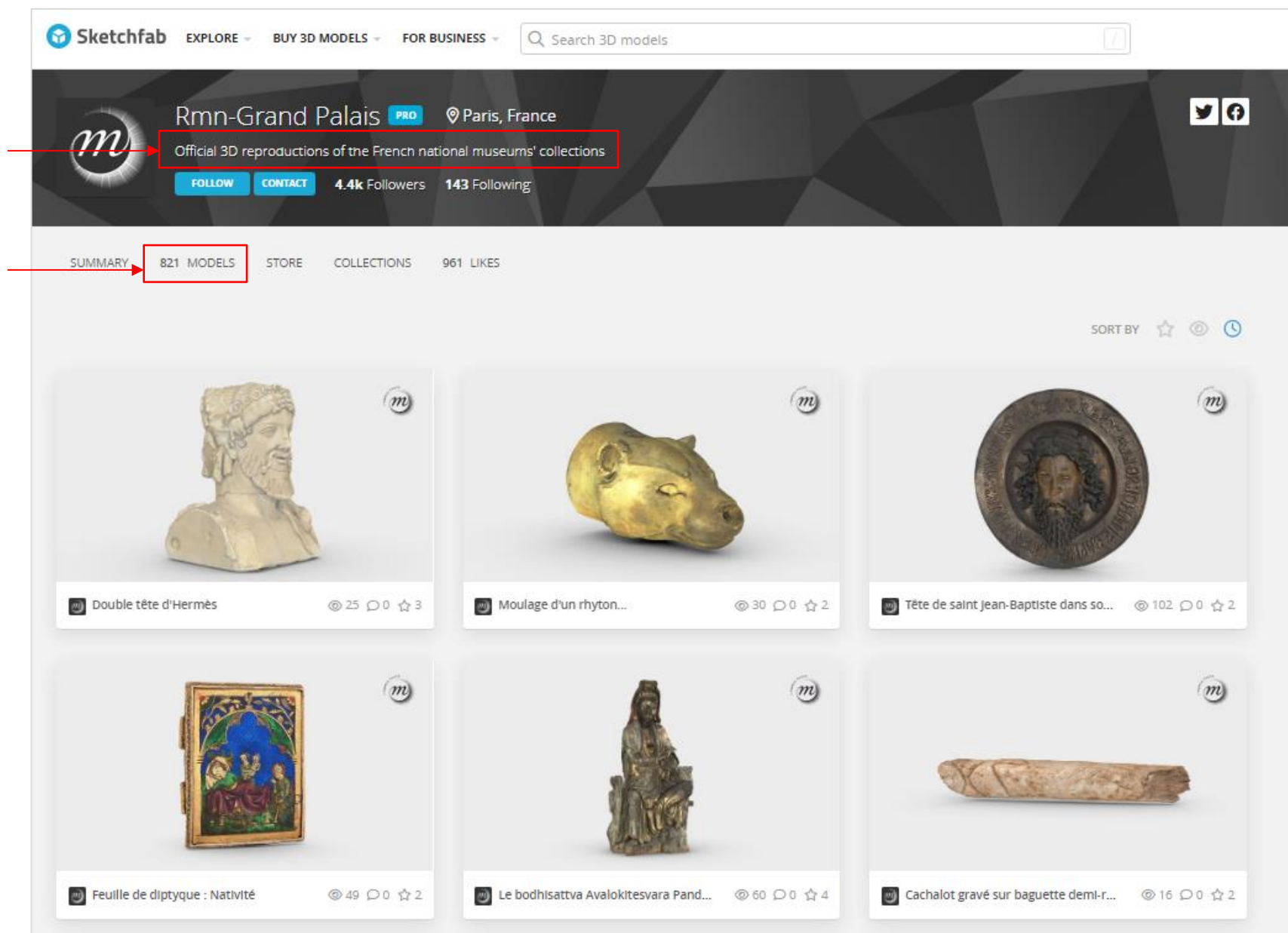
We will get back to you shortly

REQUEST AUTHORIZATION: 1 ITEM




Request authorization

RMN-GP advertisements offering to communicate 821 high-quality 3D scans, identifying the filenames of the low-quality versions  
14 July 2022, screenshoture of <https://sketchfab.com/francecollections/models> (the red lines are added and do not appear on the original page)







RMN-GP advertisement offering to communicate high-quality 3D scan files, identifying the filenames of the low-quality versions  
 5 June 2022, screencapture of <https://sketchfab.com/3d-models/panthere-marchant-rembrandt-bugatti-668fb318ce0446c4adfe6fe16949be27> (red lines added)



**Panthère marchant - Rembrandt Bugatti**  
3D Model

 **Rmn-Grand Palais** PRO  
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◀ Triangles: **600k** ▾ Vertices: **300k** [More model information](#)

**Panthère marchant**  
*Rembrandt Bugatti (1884-1916)*  
 Walking Panther  
 RF005988  
 LIEU DE CONSERVATION DE L'ORIGINAL : Paris, musée d'Orsay  
 Original en plâtre  
 Reproduction Rmn-GP en résine  
 DIMENSIONS : Hauteur : 24 cm Largeur : 49 cm Profondeur : 23 cm  
[Ateliers d'art des musées nationaux](#)  
[L'Agence Photo](#)  
 This is a light 3D model for web display. To use the high quality model contact [agence.photo@rmngp.f](mailto:agence.photo@rmngp.f)  
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 Published 5 years ago

**INSPECT THE 3D MODEL**  
MATERIALS AND MORE

Image formats jpg (2)

Download size 53MB  
[See all files](#)

All files

| 3D files | Format       | Extension | Size | From           |
|----------|--------------|-----------|------|----------------|
| RF005988 | Autodesk FBX | fbx       | 20MB | Source archive |

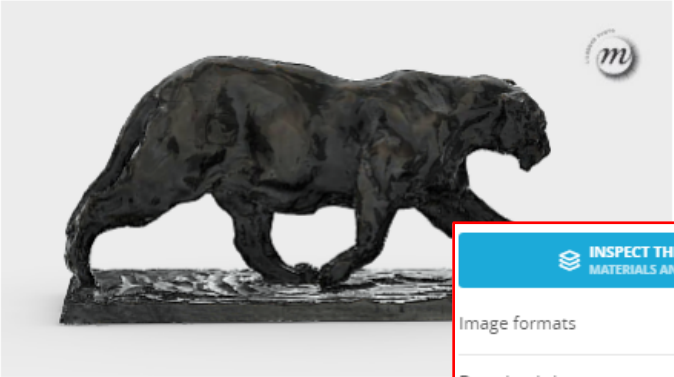
  

| Raw Textures       | Resolution | Extension | Size | From           |
|--------------------|------------|-----------|------|----------------|
| RF005988_normals   | 4096x4096  | jpg       | 4MB  | Source archive |
| RF005988_occlusion | 4096x4096  | jpg       | 3MB  | Source archive |

| Processed Textures | Resolution | Extension | Size | From           |
|--------------------|------------|-----------|------|----------------|
| RF005988_LP_600k_0 | 8192x8192  | png       | 16MB | Source archive |
| RF005988_normals   | 4096x4096  | jpeg      | 4MB  | Source archive |
| RF005988_occlusion | 4096x4096  | jpeg      | 3MB  | Source archive |

RMN-GP advertisement offering to communicate high-quality 3D scan files, identifying the filenames of the low-quality versions  
 5 June 2022, screencapture of <https://sketchfab.com/3d-models/panthere-marchant-87476ecb8a7546ef911804e7555e5f65> (red lines added)



**Panthère marchant**  
3D Model

**Rmn-Grand Palais** PRO  
FOLLOW

139 4

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Triangles: 221.9k Vertices: 129.5k [More model information](#) Report

**Panthère marchant**  
Rembrandt Bugatti (1884-1916)  
RF005988  
LIEU DE CONSERVATION DE L'ORIGINAL : Paris, musée d'Orsay  
Original en plâtre  
Reproduction Rmn-GP en résine  
DIMENSIONS : Hauteur : 24 cm Largeur : 49 cm Profondeur : 23 cm  
Ateliers d'art des musées nationaux  
L'Agence Photo

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Published 7 months ago

**INSPECT THE 3D MODEL**  
MATERIALS AND MORE

Image formats jpg (20)

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All files

| 3D files                 | Format                   | Extension | Size | From           |
|--------------------------|--------------------------|-----------|------|----------------|
| RF005988_PanthereMarc... | Alias/WaveFront Material | mtl       | 741B | Source archive |
| RF005988_PanthereMarc... | OBJ                      | obj       | 30MB | Source archive |

| Raw Textures                  | Resolution | Extension | Size | From           |
|-------------------------------|------------|-----------|------|----------------|
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 8MB  | Source archive |
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 8MB  | Source archive |
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 4MB  | Source archive |
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 7MB  | Source archive |
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 10MB | Source archive |
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 6MB  | Source archive |
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 9MB  | Source archive |
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 4MB  | Source archive |
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 5MB  | Source archive |
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 12MB | Source archive |
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 5MB  | Source archive |
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 7MB  | Source archive |
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 3MB  | Source archive |
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 4MB  | Source archive |
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 10MB | Source archive |
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 3MB  | Source archive |
| RF005988_PanthereMarchant_... | 8192x8192  | jpg       | 2MB  | Source archive |

Text:



Subject: « **Panthère marchant - Rembrandt Bugatti** »

URL of RMN-GP's advertisement of 5 January 2018:

<https://sketchfab.com/3d-models/panthere-marchant-rembrandt-bugatti-668fb318ce0446c4adfe6fe16949be27>

Text of the advertisement: (bold added)

Panthère marchant  
Rembrandt Bugatti (1884-1916)  
Walking Panther  
RF005988  
LIEU DE CONSERVATION DE L'ORIGINAL: Paris, musée d'Orsay  
Original en plâtre  
Reproduction Rmn-GP en résine  
DIMENSIONS: Hauteur: 24 cm Largeur: 49 cm Profondeur: 23 cm  
Ateliers d'art des musées nationaux  
L'Agence Photo

**This is a light 3D model for web display. To use the high quality model contact [agence.photo@rmngp.fr](mailto:agence.photo@rmngp.fr)**

© Rmn-GrandPalais/Reproduction 3D Rmn-GP

3D data files displayed in the advertisement:

**RF005988.fbx ( 20MB ) ( Environ 60000 triangles et 30000 sommets )**

Associated colorimetric data files displayed in the advertisement:

**RF005988\_normals.jpg ( 4MB ) ( 4096x4096 )**

**RF005988\_occlusion.jpg ( 3MB ) ( 4096x4096 )**

**RF005988\_LP\_600k\_0.png ( 16MB ) ( 8192x8192 )**

**RF005988\_normals.jpeg ( 4MB ) ( 4096x4096 )**

*Information collected from RMN-GP's advertisement on 5 June 2022*



Text:



Subject: « **Panthère marchant** »

URL of RMN-GP's advertisement of 20 December 2021:

<https://sketchfab.com/3d-models/panthere-marchant-87476ecb8a7546ef911804e7555e5f65>

Text of the advertisement: (bold added)

Panthère marchant

Rembrandt Bugatti (1884-1916)

RF005988

LIEU DE CONSERVATION DE L'ORIGINAL: Paris, musée d'Orsay

Original en plâtre

Reproduction Rmn-GP en résine

DIMENSIONS: Hauteur: 24 cm Largeur: 49 cm Profondeur: 23 cm

Ateliers d'art des musées nationaux

L'Agence Photo

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3D data files displayed in the advertisement:

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.obj ( 30MB ) ( Environ 221900 triangles et 129500 sommets )**

Associated colorimetric data files displayed in the advertisement:

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.mtl ( 741B )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1001\_ao.jpg ( 8MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1001\_basecolor.jpg ( 8MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1001\_metalness.jpg ( 4MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1001\_normal.jpg ( 7MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1001\_roughness.jpg ( 10MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1002\_ao.jpg ( 6MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1002\_basecolor.jpg ( 9MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1002\_metalness.jpg ( 4MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1002\_normal.jpg ( 5MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1002\_roughness.jpg ( 12MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1003\_ao.jpg ( 5MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1003\_basecolor.jpg ( 7MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1003\_metalness.jpg ( 3MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1003\_normal.jpg ( 4MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1003\_roughness.jpg ( 10MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1004\_ao.jpg ( 3MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1004\_basecolor.jpg ( 3MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1004\_metalness.jpg ( 2MB ) ( 8192x8192 )**


**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1004\_normal.jpg ( 2MB ) ( 8192x8192 )**

**RF005988\_PanthereMarchant\_RembrantBugatti\_LP.1004\_roughness.jpg ( 4MB ) ( 8192x8192 )**

**internal\_ground\_ao\_texture.jpeg ( 11kB ) ( 512x512 )**


Information collected from RMN-GP's advertisement on 5 June 2022

Promotional interview of RMN-GP of 8 May 2018, confirming the sale of 3D scans in recent past  
28 June 2022, screenshot of <https://sketchfab.com/blogs/community/seller-spotlight-rmn-gp-photo-agency/>  
(the red lines are added and do not appear on the original page)



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## Seller Spotlight: RMN-GP Photo Agency

CULTURAL HERITAGE · SELLER SPOTLIGHT · SKETCHFAB STORE · 8 May 2018

*The Photo Agency of the Réunion des Musées Nationaux – Grand Palais (RMN-GP) is the first institutional partner to join the [Sketchfab Store](#) – commercially licensing 3D scans of real artifacts from world renowned French museums.*

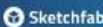
### An introduction to Réunion des Musées Nationaux – Grand Palais

Since 1946, the RMN-GP Photo Agency – a public institution under the authority of the French Ministry of Culture – has been officially responsible for promoting the collections of France's national museums. For more than 60 years, the agency has carried out photography, each year capturing more than 20,000 new on-site images expanding the agency's extensive media library, universally available at [photo.rmn.fr](http://photo.rmn.fr).

Our website provides comprehensive access to entire collections. Over one million photographs of artworks from France's national and regional museums are accessible online, including images of collections from the Louvre, the Musée d'Orsay, the Centre Pompidou, Chantilly's Condé Museum and Palais de Beaux Arts of Lille.


The agency also has an international distribution network of exclusive agents in many foreign countries. Prestigious foreign collections, including London's National Gallery, New York's Metropolitan Museum of Art, Dresden's Gemäldegalerie Alte Meister and Florence's Uffizi Gallery, are also available.

From Leonardo da Vinci's Mona Lisa to Monet's Water Lilies, from Titian to Fernand Léger, from Oceania's masks to Asian art, and including paintings, sculptures and drawings, the website allows visitors to tour the greatest collection of images of art.






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About Sketchfab

Enter new dimensions. With a community of millions of creators, we are the largest platform to publish and find 3D models online.

JOIN FOR FREE



#### How did RMN-GP Photo Agency begin working with 3D?

The agency began 3D scanning in 2013 and has produced models with more than 12 national museums including Le Louvre, Orsay Museum, Sèvres Limoges, the Picasso Museum, the Guimet Museum of Asian Art and more.

All the models the Agency produces are made available to institutions to enable their mediation and promotional activities.

#### How is Sketchfab used at RMN-Grand Palais?

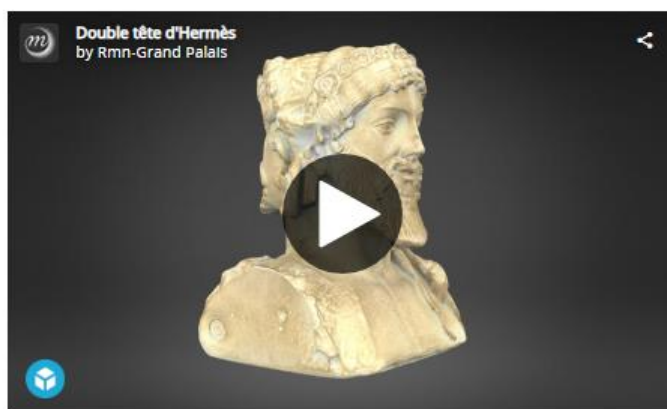
All RMN3D models are [available on Sketchfab](#) and in turn are embedded back into the website of the Photographic Agency of the RMN-Grand Palais.

The Sketchfab platform allows us to host and publish 3D files online and the 3D player allows the display of models on all browsers and on any screen – from smartphones and tablets to virtual reality headsets.

Publishing on Sketchfab allows easy integration of the models on the museum websites, as well as on social networks without having to install a particular plug-in.

The museums can thus display 3D models of the works in their collections directly on their [own websites](#), but also on the [social networks](#) or on scholarly websites, such as [Panorama de l'Art](#).

**Why did you decide to offer 3D models via the Sketchfab Store? How easy was it to use the Store (i.e. upload models, set a price, share)**



The Sketchfab platform is perfectly adapted to our needs; we can put high quality, high resolution models online, which is very important for the scientific community of museums. Many other museums around the world have also chosen to share on Sketchfab and it has been obvious to us to offer a selection of models for direct purchase on the website. Selling from the website is very simple and we can easily adapt and modify the price or the selection of models available for sale.

#### Sketchfab for Cultural Heritage

Sketchfab supports thousands of cultural organizations with discounted and free subscriptions so that they can share their collections online in 3D. To find out more and apply for a discount, please visit [Sketchfab for Cultural Heritage](#).

#### Recent Cultural Heritage News



Cultural Heritage Spotlight: Guimet Virtuel

16 June 2022



Cultural Heritage Spotlight: TapMall

20 January 2022



Cultural Heritage Spotlight: Museu do Computador

9 December 2021

**MORE CULTURAL HERITAGE NEWS**



**Why is it important to allow for commercial re-use of cultural heritage 3D content?**

**How do you hope the 3D data will be re-used?**

The presence of models from French national museums is very important because their display allows the promotion of these works of art. Their commercial use maybe in movies, video games or on the web and social networks contributes to knowledge and artistic education.

We acknowledge that the opportunities for re-use of 3D scanned cultural heritage models is in its early stages and are please to be leading the way.

**How and why does RMN-GP currently use 3D content online and within exhibitions (e.g. *Sites éternels*, *Gauguin l'alchimiste*)?**

In 2016, the agency made 3 models that were integrated into the scenography of the exhibition "Eternal sites" at the Grand Palais. Three emblematic works lent by the Louvre Museum were modeled and presented in the introduction of each sequence of the film "universal space", thus linking immersive videos and real works presented to the public.

The "Gauguin l'alchimiste" exhibition at the Grand Palais in 2017 was also an opportunity to highlight the agency's 3D models: more than 30 works by Paul Gauguin have been digitized in photogrammetry with a very high precision guaranteeing their geometric and colorimetric conformity: twenty-one carved and ceramic sculptures and eleven paintings, lent by the Musée d'Orsay, have been modeled. These 3D models have been included with the film's broadcast along the exhibition and extend the catalog and other publications of the RMN-Grand Palais with augmented reality.

**How do you see 3D changing the way museums and cultural organisations work in the future?**

3D models are becoming increasingly important for sharing, dissemination and exhibition use. 3D models are particularly suitable for use on interactive displays in museums, where museum patrons can view all sides of the work and zoom in or out to view all the details. In the future, augmented reality will enhance book editions, postcards and other print media.

Another direct application concerns education, given the current capabilities of smartphones and tablets, the potential impact of augmented reality could be very important in the short term.

## Preparing 3D data for re-use

Describe a typical workflow for how you create or capture 3D?



### What tools or equipment do you use?

Two modes of acquisition are now used by the agency, these are:

- Scanning by 3D scanner, mainly used [Artec Eva](#) and [Artec Spider](#) which use structured light, projecting the light in the form of parallel beams
- Scanning in photogrammetry using 24 x 36 camera positions.

The postproduction is different and does not use the same software, in the case of hand-held scanners the agency uses [Artec Studio](#) to achieve alignments and merging parts of the model. In photogrammetry, the software used is [Capturing Reality](#) (alignments and reconstruction).

The other software used, common to both methods of capture are:

- [Geomagic Wrap](#) (cleaning, refilling and rebuilding)
- [ZBrush](#) (Polygon cleaning and decimation)
- [Photoshop](#) and [Mari](#) (color corrections and layer creation)
- [XNormal](#) and [3DS Max](#)

VISIT THE RMN-GP STORE

### ABOUT THE AUTHOR



FRANCE COLLECTIONS

<https://sketchfab.com/francecollections/store>

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Text :

## **Seller Spotlight: RMN-GP Photo Agency**

8 May 2018

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All the models the Agency produces are made available to institutions to enable their mediation and promotional activities.

### **How is Sketchfab used at RMN-Grand Palais?**

All RMN3D models are available on Sketchfab and in turn are embedded back into the website of the Photographic Agency of the RMN-Grand Palais.

The Sketchfab platform allows us to host and publish 3D files online and the 3D player allows the display of models on all browsers and on any screen – from smartphones and tablets to virtual reality headsets.

Publishing on Sketchfab allows easy integration of the models on the museum websites, as well as on social networks without having to install a particular plug-in.

The museums can thus display 3D models of the works in their collections directly on their own websites, but also on the social networks or on scholarly websites, such as Panorama de l'Art.

### **Why did you decide to offer 3D models via the Sketchfab Store? How easy was it to use the Store (i.e. upload models, set a price, share)**

*The Sketchfab platform is perfectly adapted to our needs; we can put high quality, high resolution models online, which is very important for the scientific community of museums. Many other museums around the world have also chosen to share on Sketchfab and it has been obvious to us to offer a selection of models for direct purchase on the website. Selling from the website is very simple and we can easily adapt and modify the price or the selection of models available for sale.*



## **Why is it important to allow for commercial re-use of cultural heritage 3D content?**

### **How do you hope the 3D data will be re-used?**

The presence of models from French national museums is very important because their display allows the promotion of these works of art. Their commercial use maybe in movies, video games or on the web and social networks contributes to knowledge and artistic education.

We acknowledge that the opportunities for re-use of 3D scanned cultural heritage models is in its early stages and are please to be leading the way.

### **How and why does RMN-GP currently use 3D content online and within exhibitions (e.g. *Sites éternels*, *Gauguin l'alchimiste*)?**

In 2016, the agency made 3 models that were integrated into the scenography of the exhibition "Eternal sites" at the Grand Palais. Three emblematic works lent by the Louvre Museum were modeled and presented in the introduction of each sequence of the film "universal space", thus linking immersive videos and real works presented to the public.

The "Gauguin l'alchimiste" exhibition at the Grand Palais in 2017 was also an opportunity to highlight the agency's 3D models: more than 30 works by Paul Gauguin have been digitized in photogrammetry with a very high precision guaranteeing their geometric and colorimetric conformity: twenty-one carved and ceramic sculptures and eleven paintings, lent by the Musée d'Orsay, have been modeled. These 3D models have been included with the film's broadcast along the exhibition and extend the catalog and other publications of the RMN-Grand Palais with augmented reality.

### **How do you see 3D changing the way museums and cultural organisations work in the future?**

3D models are becoming increasingly important for sharing, dissemination and exhibition use. 3D models are particularly suitable for use on interactive displays in museums, where museum patrons can view all sides of the work and zoom in or out to view all the details. In the future, augmented reality will enhance book editions, postcards and other print media.

Another direct application concerns education, given the current capabilities of smartphones and tablets, the potential impact of augmented reality could be very important in the short term.

## **Preparing 3D data for re-use**

### **Describe a typical workflow for how you create or capture 3D?**

*[Présentation vidéo des processus de numérisation 3D par RMN-GP :*

*<https://www.youtube.com/watch?v=QrGPxDT1has>*

### **What tools or equipment do you use?**

Two modes of acquisition are now used by the agency, these are:

- Scanning by 3D scanner, mainly used Artec Eva and Artec Spider which use structured light, projecting the light in the form of parallel beams
- Scanning in photogrammetry using 24 x 36 camera positions.

The postproduction is different and does not use the same software, in the case of hand-held scanners the agency uses Artec Studio to achieve alignments and merging parts of the model. In photogrammetry, the software used is Capturing Reality (alignments and reconstruction).

The other software used, common to both methods of capture are:

- Geomagic Wrap (cleaning, refilling and rebuilding)
- ZBrush (Polygon cleaning and decimation)
- Photoshop and Mari (color corrections and layer creation)
- XNormal and 3DS Max

Pertinent text : « SOLID EXPERTISE IN SHOOTING 3D

The agency continues to lead the project France collections 3D, initiated in 2015 as part of a call for projects from the Fund for the Digital Society [Fonds pour la Société Numérique] and has accumulated nearly 2,000 models in high definition. The digitizations are carried out thanks to two technologies: with structured light scanners or based on a photogrammetry process developed by the agency. During 2021, the agency carried out 25 days of 3D capture. Scans made include the Venus de Milo, the Sleeping Hermaphrodite, the Lion of Monzón for the town hall of Monzón de Campos in Spain, the cross section of the Opera Garnier for a multimedia application developed by the Musée d'Orsay, as well as many works related to Napoleon I, in the dynamics of the bicentenary of his death (Austerlitz sword, bicorne hat, busts...). »

(The photo show the Venus de Milo bring 3D scanned by photogrammetry)



Depuis sa création en 1946, l'agence photographique réalise des prises de vue pour les musées nationaux, valorise et diffuse les fonds photographiques des collections nationales. Grâce à sa politique de partenariats internationaux, elle diffuse également les fonds de prestigieuses institutions étrangères telles que le British Museum, la Gemäldegalerie, le Metropolitan Museum of Art, le musée du Prado, le Los Angeles County Art Museum et bien d'autres encore... Aujourd'hui gestionnaire d'un catalogue de près de 1,5 million d'images numérisées de la Préhistoire à nos jours, elle est la deuxième agence d'images d'art dans le monde.

### 80 000 NOUVELLES IMAGES EN 2021

Le chiffre d'affaires réalisé par l'agence photographique en 2021 s'élève à 2 925 M€ en légère augmentation par rapport à 2020. Ce chiffre d'affaires a été cependant affecté par la crise sanitaire au même titre qu'en 2020. Malgré les contraintes sanitaires, l'agence a poursuivi les campagnes de numérisation des collections nationales. Ainsi, en 2021, 549 journées de prises de vue ont été réalisées dans l'ensemble des musées et au total, avec les intégrations des collections étrangères, ce sont près de 80 000 images qui ont été indexées et légendées par le service documentation et ont rejoint la base de l'agence. Soucieuse d'offrir des images de très grande qualité, l'agence utilise du matériel de pointe, dont des dos numériques de 150 millions de pixels, et investit depuis plusieurs années dans la technologie 3D, domaine dans lequel elle est devenue un acteur de référence.

### UNE EXPERTISE SOLIDE DES PRISES DE VUE 3D

L'agence poursuit la conduite du projet France collections 3D, initié en 2015 dans le cadre d'un appel à projet du Fonds pour la Société Numérique et cumule à ce jour près de 2 000 modèles en haute définition. Les numérisations sont réalisées grâce à deux technologies : avec des scanners à lumière structurée ou sur la base d'un procédé de photogrammétrie mis au point par l'agence. Au cours de l'année 2021, l'agence a réalisé 25 journées de captation 3D. Parmi les numérisations réalisées, la Vénus de Milo, l'Hermaphrodite endormi, le Lion de Monzón

pour la mairie de Monzón de Campos en Espagne, la coupe transversale de l'Opéra Garnier pour une application multimedia développée par le musée d'Orsay, ainsi que de nombreuses œuvres liées à Napoléon 1<sup>er</sup> dans la dynamique du bicentenaire de sa mort (épée d'Austerlitz, bicorne, bustes...).

### IMAGES D'ART ET PHOTO.RMN.FR : DEUX SITES QUI POURSUIVENT LEUR CROISSANCE

Lancé en octobre 2015, le site internet grand public « Images d'Art » a reçu 800 000 visiteurs en 2021. Il permet également à l'agence de se tourner vers de nouveaux canaux de distribution pédagogiques, scientifiques et commerciaux des images grâce à son interface technique (API). Au global, les sites internet de l'agence « Images d'Art » et « photo.rmn » ont dépassé 1.7 million de sessions pour près de 10 millions de pages vues.