
Subject: Re: Conversion Factor

Posted by [Paul Van Delst\[1\]](#) on Wed, 05 Dec 2007 21:42:28 GMT

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Marshad2@gmu.edu wrote:

> Hi Guys:

>

> I have the following scale factors for 50 bands.

>

> "scale_factor"

> 0.10000000, 0.10000000, 0.10000000, 0.10000000, 0.10000000,

> 0.10000000,

> 0.10000000, 0.10000000, 0.10000000, 0.10000000, 0.01000000,

> 0.01000000,

> 0.01000000, 0.01000000, 0.01000000, 0.10000000, 0.01000000,

> 0.01000000,

> 0.01000000, 0.01000000, 0.01000000, 0.01000000, 0.01000000,

> 0.01000000,

> 0.01000000, 1.00000000, 0.00500000, 0.00600000, 0.00600000,

> 0.00600000,

> 0.00600000, 0.00600000, 0.00500000, 0.00100000, 0.00300000,

> 0.00600000,

> 0.00500000, 0.00500000, 0.00200000, 0.00100000, 0.00100000,

> 0.01000000,

> 0.01000000, 0.01000000, 0.01000000, 0.01000000, 0.01000000,

> 0.01000000,

> 0.01000000, 0.01000000

>

> FLAASH atmospheric correction software requires radiance to be in

> microwatts/centimeter^2/steradian/nanometer. Whereas, I have the

> radiance in watts/meter^2/steradian/micron. What shall I do?

Umm... convert the values to the required units?

micro == 10^{-6}

centi == 10^{-2}

nano == 10^{-9}

and

micron == micrometer.

Add the exponents accordingly (don't forget the ^2 bits!) and multiply.

cheers,

paulv

Subject: Re: Conversion Factor
Posted by [Brian Larsen](#) on Wed, 05 Dec 2007 22:01:44 GMT
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> FLAASH atmospheric correction software requires radiance to be in
> microwatts/centimeter^2/steradian/nanometer. Whereas, I have the
> radiance in watts/meter^2/steradian/micron. What shall I do?

just do the conversion...

1e6 microwatts in a watt
100^2 cm^2 in a m^2
1e3 nm in a micron

so just take your data

data = data / (1e6 * 100.^2 * 1e3)
or
data /= (1e6 * 100.^2 * 1e3)

Might have to cast things to a double to be safe... but sure I got
this right before you go too far with it...

Cheers,

Brian

Brian Larsen
Boston University
Center for Space Physics

Subject: Re: Conversion Factor
Posted by [Marshad2](#) on Wed, 05 Dec 2007 23:49:56 GMT
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On Dec 5, 5:01 pm, Brian Larsen <balar...@gmail.com> wrote:
>> FLAASH atmospheric correction software requires radiance to be in
>> microwatts/centimeter^2/steradian/nanometer. Whereas, I have the
>> radiance in watts/meter^2/steradian/micron. What shall I do?
>
> just do the conversion...
>
> 1e6 microwatts in a watt
> 100^2 cm^2 in a m^2
> 1e3 nm in a micron

>
> so just take your data
>
> data = data / (1e6 * 100.^2 * 1e3)
> or
> data /= (1e6 * 100.^2 * 1e3)
>
> Might have to cast things to a double to be safe... but sure I got
> this right before you go too far with it..
>
> Cheers,
>
> Brian
>
> -----
> Brian Larsen
> Boston University
> Center for Space Physics

Thank you guys. You all deserve appreciation.

Regards,

Arshad

Subject: Re: Conversion Factor
Posted by [devin.white](#) on Thu, 06 Dec 2007 12:21:40 GMT
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When you supply your radiance file to FLAASH, it prompts you to supply scale factors as well. You can provide either a single value for all bands or text file with an array of values (one for each band). To convert from what you have to what you need, choose single value and type "10". You don't need to mess with the scale factors stored in the HDF--those are automatically applied by ENVI when you initially open your file (they convert the stored integer data to radiance).

On Dec 5, 4:36 pm, Marsh...@gmu.edu wrote:

> Hi Guys:
>
> I have the following scale factors for 50 bands.
>
> "scale_factor"
> 0.10000000, 0.10000000, 0.10000000, 0.10000000, 0.10000000,
> 0.10000000,
> 0.10000000, 0.10000000, 0.10000000, 0.10000000, 0.01000000,

> 0.01000000,
> 0.01000000, 0.01000000, 0.01000000, 0.10000000, 0.01000000,
> 0.01000000,
> 0.01000000, 0.01000000, 0.01000000, 0.01000000, 0.01000000,
> 0.01000000,
> 0.01000000, 1.00000000, 0.00500000, 0.00600000, 0.00600000,
> 0.00600000,
> 0.00600000, 0.00600000, 0.00500000, 0.00100000, 0.00300000,
> 0.00600000,
> 0.00500000, 0.00500000, 0.00200000, 0.00100000, 0.00100000,
> 0.01000000,
> 0.01000000, 0.01000000, 0.01000000, 0.01000000, 0.01000000,
> 0.01000000,
> 0.01000000, 0.01000000
>
> FLAASH atmospheric correction software requires radiance to be in
> microwatts/centimeter^2/steradian/nanometer. Whereas, I have the
> radiance in watts/meter^2/steradian/micron. What shall I do?
>
> Best Regards,
