

## DOTC

**Synonym:** 3-ethyl-2-[7-(3-ethyl-2(3H)-benzoxazolylidene)-1,3,5-heptatrienyl]-benzoxazolium iodide or perchlorate

**Catalog No.:** 08250 (iodide); 08251 (perchlorate)

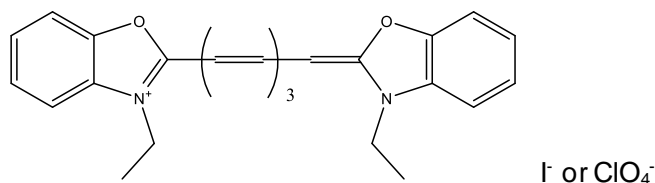
**CAS No.:** 15185-43-0 (08250); Not available (08251)

**Chemical Formula:** C<sub>25</sub>H<sub>25</sub>N<sub>2</sub>O<sub>2</sub>.I (08250); C<sub>25</sub>H<sub>25</sub>N<sub>2</sub>O<sub>2</sub>.ClO<sub>4</sub> (08251)

**Molecular Weight:** 512.39 (08250); 484.94 (08251)

**Appearance:** Steely blue-gray crystals (08250); Steel blue crystals (08251)

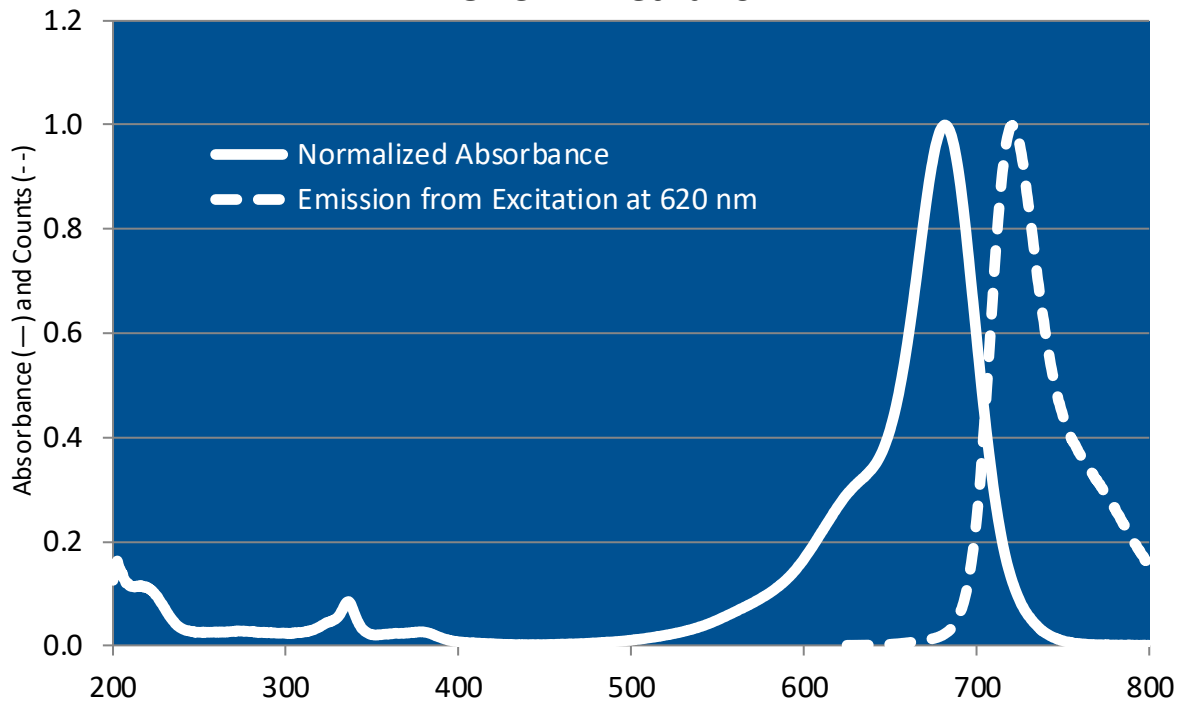
**Structure:**



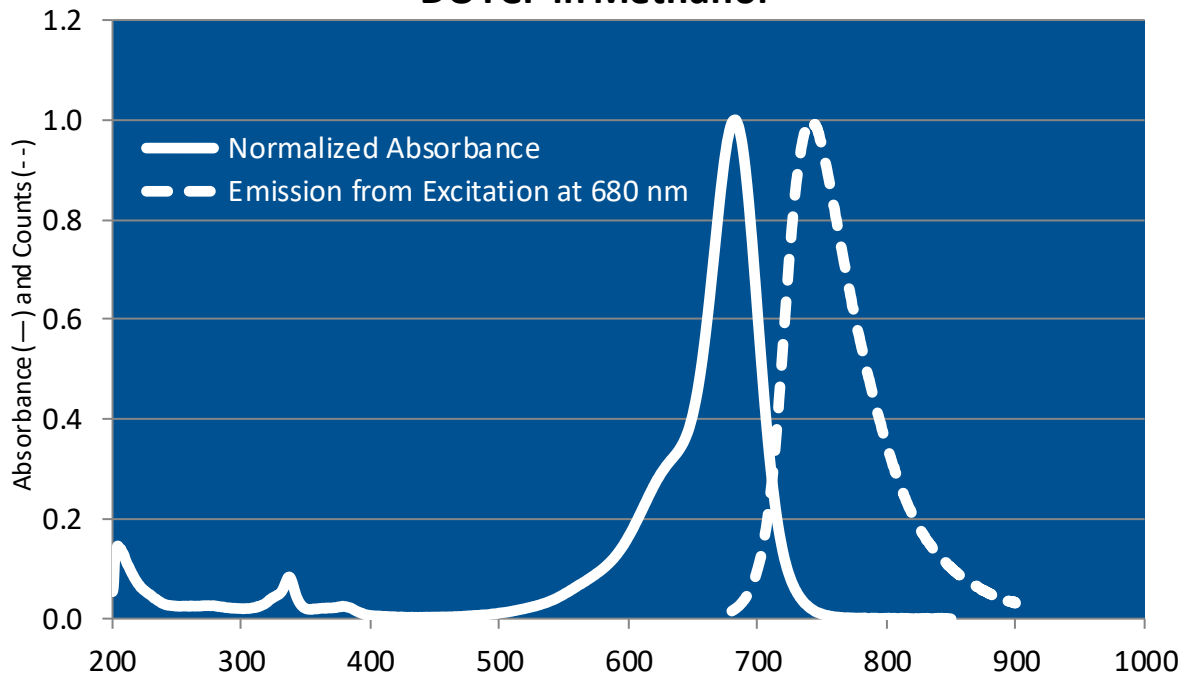
Lasing Wavelength Max. (nm)	Range (nm)	Pump Source (nm)	Solvent	Concentration (molar)	Abs λ-max	FI λ-max
732		FL→R610(622) <sup>65</sup>	MeOH/N <sub>2</sub> /COT	3 x 10 <sup>-5</sup>	687 <sup>e</sup>	725 <sup>e</sup>
745		FL→R610(622) <sup>65</sup>	DMSO	1 x 10 <sup>-4</sup>	695 <sup>s</sup>	719 <sup>s</sup>
	750-825	FL→R640(660) <sup>3</sup>	EG	1 x 10 <sup>-4</sup>		
798	777-800	XeCl(308) <sup>114</sup>	DMSO	1.5 x 10 <sup>-3</sup>		
803	776-832	XeCl(308) <sup>110</sup>	DMSO	1.5 x 10 <sup>-3</sup>		
	785-800	Nd:YAG→R610(585) <sup>67</sup>	DMSO	3.9 x 10 <sup>-3</sup>		
740		Nd:YAG→R610(585) <sup>67</sup>	DMSO	1.9 x 10 <sup>-4</sup>		
754	Δλ(bb)=23	Nd:YAG(532) <sup>102</sup>	DMSO	2.6 x 10 <sup>-4</sup>		
756	736-793	Nd:YAG(532) <sup>53</sup>	Methanol			
770		Nd:YAG→R610(585) <sup>67</sup>	DMSO	7.8 x 10 <sup>-4</sup>		
760	748-776	N <sub>2</sub> (337) <sup>111</sup>	DMSO	6 x 10 <sup>-3</sup> (DOTC), 1 x 10 <sup>-2</sup> (OX725)		
777	761-802	N <sub>2</sub> (337) <sup>111</sup>	DMSO	1.2 x 10 <sup>-3</sup>		
782	(bb)	N <sub>2</sub> (337) <sup>97</sup>	DMSO	2.5 x 10 <sup>-1</sup>		
791	752-839	N <sub>2</sub> (337) <sup>90</sup>	DMSO	1 x 10 <sup>-3</sup>		
795	760-830	N <sub>2</sub> (337) <sup>183</sup>	DMSO	11.6mg/20ml		
823	794-867	N <sub>2</sub> (337) <sup>90</sup>	DMSO	2.4 x 10 <sup>-3</sup> (DOTC), 5.8 x 10 <sup>-5</sup> (HITC)		
854	815-892	N <sub>2</sub> (337) <sup>90</sup>	DMSO	1.25 x 10 <sup>-3</sup> (DOTC), 1 x 10 <sup>-3</sup> (HITC)		
783	750-833	Kr(647,676) <sup>38</sup>	EG	7.8 x 10 <sup>-4</sup>		
795	765-875	Kr(646,676) <sup>17</sup>	EG/DMSO,84/16	6 x 10 <sup>-4</sup>		
800	755-870	Kr(647,676) <sup>36b</sup>	DMSO+EG or G	1 x 10 <sup>-3</sup>		
808	756-871	Kr(Red) <sup>68</sup>				
	742-874	Kr(647) <sup>71</sup>	EG/DMSO,3/1	1 x 10 <sup>-3</sup>		
	725-765	Ruby(694) <sup>35</sup>	DMSO	5 x 10 <sup>-5</sup>		
742		Ruby(694) <sup>95</sup>	Acetone	1 x 10 <sup>-4</sup>		
798	789-810	AlGaInP(laser diode, 690) <sup>208</sup>	EG	3.55 x 10 <sup>-4</sup>		

COT = cyclooctatetraene; DMSO = dimethylsulfoxide; E = ethanol; EG = ethylene glycol; G = glycerol; MeOH = methanol; S = DMSO

### DOTCI in Methanol



### DOTCP in Methanol



The information presented above is believed to be accurate but is not a specification. The customer is fully responsible for determining the suitability of this product for use in their application. Exciton, Inc. does not represent that the information is sufficient or complete for any specific application.

### Quantum Yields and Lifetimes

Absorbance (nm)	Emission (nm)	Quantum Yield (max = 1.0)	Solvent	Lifetime (ns)	References, Notes
	725		Ethanol	1.2	C-3
680	740	0.63	Dimethylsulfoxide		DCM-3
		0.63	Dimethylsulfoxide		CD-3

### References:

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For a current list of biology, biological stain, or biochemistry references for DOTC from PubMed, click on the following link:

[DOTC I or DOTC Perchlorate](#) (zero references as of May 2006)