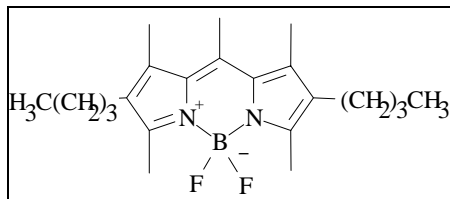




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## PYRRROMETHENE 580



**Chemical Name:** 1,3,5,7,8-pentamethyl-2,6-di-n-butylpyrrromethene-difluoroborate complex

**MW:** 374.32

**Melting Point:** 182.5-183.5°C

**CAS Registry Number:** 151486-56-5 **Exciton Catalog No.:** 05805

**Synonyms:** PM-570, PM-580

### Spectral Information:

$\lambda_{\text{max,abs}} = 518\text{nm (Ethanol)}^{218}$   
 $\epsilon_{518} = 8.3 \times 10^4 \text{ liter mol}^{-1} \text{ cm}^{-1}^{218}$   
 $\lambda_{\text{max,fl}} = 550\text{nm (Ethanol)}^{218}$   
 $\Phi_f = 0.90 \text{ (Ethanol)}^{218}$

### Selected Solubility Limits (25°C):

Solvent	Concentration	$\lambda_{\text{abs max}}$
Methanol	320mg/liter	518
Ethanol	540mg/liter	519
NMP	8.9g/liter	520
EPH	5.9g/liter	524
PPH	7.7g/liter	524
p-Dioxane	12.2g/liter	521
Propylene Carbonate	~1.5	524

### REPORTED LASER PERFORMANCE DATA

Max. Lasing Wavelength (nm)	Range (nm)	Pump Source (nm)	Solvent	Concentration (molar)	Conversion Efficiency	Stability (1/2- life)
580(bb)		FL <sup>218</sup>	Ethanol	$2 \times 10^{-4}$	-	-
552	545-585	Nd:YAG(532) <sup>220</sup>	Ethanol	$3 \times 10^{-4}$	83.5%	-
557	547-581	Nd:YAG(532) <sup>223</sup>	Ethanol	$8.6 \times 10^{-4}$ (osc), $1.2 \times 10^{-4}$ (amp)	38%	850KJ/L
569	545-583	Nd:YAG(532) <sup>239</sup>	Ethanol	$5.3 \times 10^{-4}$	28%	-
570(bb)		Nd:YAG(532) <sup>223</sup>	Ethanol	$8.6 \times 10^{-4}$ (P-580,osc), $4.5 \times 10^{-5}$ (P-597,amp)	31%	-
571(bb)		Nd:YAG(532) <sup>215</sup>	Acrylic Copolymer	$3.2 \times 10^{-4}$	85.0% <sup>s</sup>	See note B
575	555-592	Nd:YAG(532) <sup>219</sup>	Acrylic Copolymer	$3.2 \times 10^{-4}$	82.5% <sup>s</sup>	See note A
		Ar(all-lines) <sup>221</sup>	PPH	$2.8 \times 10^{-3}$	31% <sup>s</sup>	ca. 200Wh

bb (broad band); s (slope efficiency)

EPH (2-Phenoxyethanol); NMP (N-Methyl-2-Pyrrolidinone); PPH (1-Phenoxy-2-Propanol)

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For a current list of biology, biological stain, or biochemistry references for Pyrrromethene 580 from PubMed, click on the following link:

[Pyrrromethene 580](#) (zero references listed in PubMed as of May 2006)

### NOTES:

A. After 20,000 pulses at 0.6J/cm<sup>2</sup>, output energy had reduced by only 34%.

B. After 20,000 pulses at 75mJ/cm<sup>2</sup>, output energy had reduced by approximately 33%.

Pyrrromethene 580 is offered by Exciton under U.S. Patent Nos. 4,916,711 and 5,189,029 and other worldwide patents.

Use of EPH and/or PPH as a laser dye solvent is subject to U.S. Patent No. 4,896,329 (Exciton).